CONSERVATION OF AN HISTORIC URBAN CENTRE
A STUDY OF DOWNTOWN POMBALINE LISBON

by

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Abstract

This dissertation aims to define a conservation proposal for an area of Lisbon's historic centre (the *Baixa Pombalina*), and simultaneously to develop a replicable method of analysis in urban conservation based on complementary stages of research.

Baixa Pombalina is an area rebuilt in the eighteenth century, following a major earthquake, under a gridiron plan. It is widely acknowledged as an important piece of period architecture and believed by some to have remained relatively unchanged. However, detailed analysis shows it to have been submitted to constant transformations as a result of economic pressures related to its role as a functional centre. Tertiary activities have virtually driven out residential and (to a lesser extent) commercial functions. The area has become an unattractive place in which to live. The maintenance of buildings has been neglected by owners so that few achieve minimum standards of safety and comfort. Given the dimension of the blocks - compactly built with narrow central lightwell - the flats have insufficient light and ventilation in many compartments. The remaining resident population is overwhelmingly poor and old.

The study aims to develop a proposal, based on the theory of Integrated Conservation, which will arrest the area's gradual decay and help to preserve a potentially important group of buildings. An important conclusion is that if conservation is to succeed, then it has to be understood as part of city planning in general and not just as isolated embellishment projects. Other key elements of the proposal are: moderation of growth of tertiary activities; restoration of the residential function in the city centre; re-establishment of a balance of uses; and heterogeneity and integration among people, activities and buildings. It is shown that the buildings can be appropriately readapted to fulfil housing requirements.

By means of the applied study of Baixa Pombalina, the thesis contributes towards the establishment of an appropriate methodology for conservation of historic centres. This approach takes into account various practical problems which conservation embraces: *what, why, how* and *for whom* to conserve?

The thesis is divided into three main parts. The first comprises a *historical appreciation* of the study area, focusing on antecedents and contemporary context. It includes comparative analyses with other European cities and aspects of urban planning in Portuguese and Spanish colonial development. Secondly, a *cognitive analysis* is provided, which examines the urban/architectural, social, demographic, economic and administrative components of the study area. Finally, the study has a *development and evaluation stage.* This involves an architectural assessment of the cultural and use value of Baixa which serves to identify future action and technical treatment for the buildings. There follows a presentation of the conservation proposal which is then compared and evaluated with the scenario of no conservation action being taken. The chosen method of evaluation examines the 'efficiency' of the options from the point of view of diverse sectors of the community.

An important aspect of the study is that it evaluates the reasons which justify conservation in Baixa Pombalina in a form that may be compared with other projects. This permits urban conservation to be approached in a less abstract manner than has hitherto been the case and provides a straightforward methodological basis for researchers and practitioners in the filed.

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Chapter 1

Introduction

1.1. Purpose and scope

This dissertation has two main objectives. First, it aims to conceive, discuss and evaluate a detailed conservation proposal for an area of Lisbon's historic centre known locally as 'Baixa' or 'Baixa Pombalina'.[1] This translates roughly as 'Downtown Pombaline Lisbon', an area of some 900m by 300m rebuilt after a major earthquake in 1775 on the orders of the Prime Minister of the time, the Marquis of Pombal. Second, but no less important, the thesis aims to establish - by means of this particular case study - a replicable methodological approach to the conservation of urban historic centres. This approach has five key components: (i) *historical appreciation* of the antecedents, contemporary context and subsequent evolution of the area under analysis; (ii) *cognitive analysis* which incorporates examination of the urban and architectural content of the area, as well as its social, demographic, economic and administrative background; (iii) *architectural quality evaluation* of the conservation area based on a rating scale of the values to be preserved; (iv) *development of options* for conservation or rehabilitation; and finally (v) *selection of an alternative* intervention aimed at preserving the historic centre, based on examination of the costs and advantages to different sectors of the community.

1.1.1 The case-study area and the historic centre

Lisbon's historic centre comprises a large patch-work area of sectors built at different times. Although the limits of this centre are debatable, there is not much doubt that the Baixa Pombalina is its prime focus (Figure 1.1). The earliest historical centre is defined by the Castelo area (Castle Hill). In the sixteenth century the city expanded westwards

[1] Pronounced "Bysher Pombaleener".

to the Bairro Alto and with the construction of Baixa Pombalina in the late eighteenth century the Castelo took an increasingly lateral position. Nowadays, most observers would agree that the historic centre comprises the area from Castelo and Alfama (north-east and east of Baixa Pombalina) to Bairro Alto and Madragoa (west of Baixa Pombalina). Given that Castelo, Alfama, and Madragoa are essentially residential areas and that Baixa Pombalina lies between them, the latter appears as the core of the historic centre.

There are other reasons, however, why the core of the historic centre is on the Baixa. First, its topographic location as a flat area between two hills facing the river Tejo means that it is the main entrance to the city for those coming from the south; second, Lisbon is a radioconcentric city which until very recently had most of its administrative and commercial activities centred on the Baixa; and third, because there is a concentration of public transport terminals in the area.

Baixa Pombalina as an area is clearly distinguishable by its gridiron plan. The aerial photograph in Figure 1.2 shows a pattern of main, secondary and cross roads which results in a standardized block of buildings. The Pombaline block or quarter is the generative element of composition in the gridiron plan which defines the urban scale, the use and the architectural order and language. The compositive rigidity shown in the plan is also seen in the facades, which although differing in accordance to the street type follow the same metric and austere design. The several buildings which constitute the block are unified through a continuous and uniform facade. The blocks are compact, long and narrow, with a central light-well to provide light and ventilation to the back of the building.

Three squares can be distinguished in this plan, all located in a terminating position in relation to the plan. One of these, the Comércio Square, is monumental and opens to the river Tejo. This square is clearly influenced by the French Place Royale and can be considered as the main structural element of Baixa. The other two squares, Rossio and Figueira, limit the north side of the area. They show a different relation to the plan, being conditioned by the street pattern and dimension of the blocks, rather than determining them, as is the case with Comércio Square.

Figure 1.1 The location of Baixa Pombalina in the city of Lisbon.

Figure 1.2 An aerial photographic view of Baixa Pombalina.

The urban structure of Lisbon's historic centre has had few morphological alterations over the years. Baixa Pombalina is a case in point as it retains today the original eighteenth century urban composition. Its buildings and plan have an important historical value given that they illustrate aspects of social and economic history (eg. Colonial and European influence) and display what were technological innovations (eg. a new system of construction, the wooden frame and standardization).

Nevertheless, the way Baixa appears and functions in the late twentieth century is markedly different from the original design. It has been subjected to a long and continuous transfiguration process. The prime moving force is the expansion of the tertiary sector in the form of systematic large-scale occupation of what were essentially residential units. At any one moment, large numbers of vacant dwellings are found and there is a high ratio of conversion of residential apartments into offices or shops. The remaining resident population is mainly made up of older women. It is also relatively isolated as few of the activities that are often found in residential areas are left. Thus, the Baixa Pombalina presents a classic example of the decaying urban historic centre. Tertiary activities relentlessly drive the residential function out, leaving a deserted and unattractive place to live or even to walk in.

The factors which have led to the decay of Baixa Pombalina are many: housing deterioration, decline of commercial activities, lack of adequate city planning, changes in consumer tastes, and so on. The maintenance of buildings has invariably been neglected by owners and the houses have become occupied by a predominantly low-income and ageing population. At the same time, the city centre has undergone an economic transformation with land values rising, reaching the point where the site has become more valuable than the buildings on it. There is some pressure to tear the buildings down and exploit the site more intensively so as to maximize its economic return. All these are man-made causes of decay.

Thus, one is drawn to conclude that there has been a loss of an important part of a common heritage, not merely to the historic centre but to the city as a whole. However, a strong campaign for the general rehabilitation of cities, and their historic centres in particular, is gaining acceptance. Lisbon's Municipality has recently begun to change

its attitude and policy, which before were strictly directed to development of new districts, neglecting the historic areas and condemning the historic centre to decay. It would appear that the time is ripe to reclaim the importance of Baixa as the centre where people can live and make use of the quality of life a city centre can give.

1.1.2 The Baixa Pombalina intervention

The choice of Baixa Pombalina as a case study is motivated, on the one hand, by the historical, aesthetic, cultural and use values the area exhibits, and on the other by the shortfall of public intervention in the area, which has led to degradation of the urban space and of the buildings there contained. Indeed, it was only as recently as 1992 that Lisbon City Council commissioned a study with the remit of finding ways to preserve the Baixa as a key component of the city's heritage and present life.

In this thesis we will be searching for ways and means of improving Baixa Pombalina for those who live and work there, for those who might do so in the future, and for the population of the city in general. The objective is to arrest the decay of a potentially fine group of buildings, thereby allowing existing and new users to carry out their business efficiently and to live safely in a pleasant environment. Whilst suggesting rehabilitation of those buildings worthy of retention and restoration of individual items of architectural interest we will, at the same time, attempt to maximize the full housing potential of the area. The visual significance of the group of buildings as part of the block will be reinforced. A consistent pattern of uses will be re-established in order to achieve greater balance. All in all, the aim is to revitalize the whole area, thereby contributing to the social, economic and architectural life of the city.

The proposed conservation plan will define a *conservation area of special architectural and historic interest*, the character of which is seen as desirable to preserve or enhance. An analytical study of the past and present attributes will be presented in order to determine which values from the past should be preserved and if necessary adapted to present requirements.

A process known as *integrated or comprehensive conservation* - representing the confluence of regional planning, town planning and architectural demands - will be selected as a general strategy for conserving the Baixa Pombalina area. This process aims to moderate growth of the tertiary sector and restore the residential function, which we believe to be the main element for successful conservation of the historic city centre.

The strategic functions Baixa held in the past have changed. Throughout the second half of the twentieth century, the residential function has been continually declining, giving place to offices (both public and private), banking, retailing and some entertainment. Simultaneously, the process of urban ageing and obsolescence is having a cumulative detrimental effect on the central area. This is manifested in three related aspects: (i) *physical deterioration* due to lack of maintenance and repair of the buildings, leading to problems of structural safety and insalubrious effects on residents and users; (ii) *functional maladjustment* due to activities being carried out that are incompatible with the division of the building space, leading to social and economic inefficiencies; and (iii) *cultural degradation* due primarily to prevailing societal tastes [although also likely to be influenced by (i) and (ii)], and which leads to the area and the buildings there contained to be viewed as ordinary and unworthy of conservation.

The process of urban obsolescence is clearly related to the issue of central city decay within the context of urban metropolitan regions. The modern city has to be analyzed as part of an intricate network of functional inter-dependencies. City growth has led to an elaborate specialized system known for its efficiency, but where the social costs are rarely taken into account. This system is defined by a strictly stable environment, but with a profound inability to adapt, change and accommodate to new conditions, leading inevitably to an increased risk of technical and social breakdowns.

Urban conservation should seek to arrest the process of ageing and obsolescence in a constructive manner. It should aim at redistributing city functions to central urban areas. Land use distribution, density and public transportation should be planned in an integrated way. This implies that metropolitan authorities should be empowered to plan land use and transportation as well as influence planned development by allocating property tax revenues. In order to conserve historic centres it is necessary to revise the

principle of functional separation of activities within the city and its metropolitan region. This implies a general change in ideas and values: an alternative town planning view of future life in the city.

The conservation proposal should also aim to achieve heterogeneity and integration among people, activities and buildings. A straightforward way would be to reduce the areas under single-use classification, and to develop packages of mixed uses. In order to achieve the integration, more housing choices should exist.

We will investigate the Pombaline Plan from the time of its conception and early evolution up to the present day. The plan has been considered by historians as unique for its time, and extremely well adapted to the existing medieval city. It shows a compositional rigidity which is the result of unity and integrity between the characteristics of the buildings and of the plan itself. From the eighteenth century up to the present day, the blocks of continuous uniform facades have been able to support commercial and service activities. This is due both to the simplicity of the distribution scheme and the dominant typology of rented floor apartments.

Although Baixa is an area of established architectural value we will be questioning its uniqueness. Comparison with other urban schemes, either in the established European cities or the new settlements of the colonial world, will be made. We will search for relationships and mutual influences in order to assess the values of the past, which together with the use and economic values of today can indicate which values we should preserve for the future.

In developing the conservation proposal we shall be working with four hierarchical delimitations of the study area. Such limits provide a conceptual framework for probing and dealing with the complexity of urban systems. They organize its constituent subsystems into a totality and permit prioritization of subsystems without missing the totality. Figure 1.3 helps to visualise the chosen limits.

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The first limit is provided by the original Pombaline Plan itself (Area A). More precisely, we concentrate on the main central zone, therefore excluding the rising bordering areas in which an ingenious adaptation of the gridiron plan was later applied. This area is studied to determine the principal characteristics of the Pombaline intervention. It is also the total area addressed by the conservation proposal. The second delimitation corresponds to a specific survey carried out in order to characterize the functional structure, state of the buildings and socio-economic and living conditions in the area.[2] In this partition (Area B), the main Terreiro do Paço Square and adjoining blocks are excluded, but it includes the other two squares to the north. A further delimitation is used for the analysis of commercial activities (Area C). It includes the three types of 'commercial streets' - primary, secondary and cross streets. Finally, Area D was chosen for a detailed architectural study of the Pombaline quarter. This case study, which includes three typical quarters in average or bad state of repair, is used as the basis for the conservation proposal.

1.1.3 Methodology of historic centre conservation

The second objective of the thesis is to contribute towards the establishment of an appropriate methodology for conservation of historic urban centres. There appears to be general agreement in the conservation literature that an applied study should address three questions: *what*, *why* and *how* to conserve?[3] However, the methods used to answer these questions tend to differ. The most common approach simply carries out a brief historical appreciation followed by a contextual analysis based on a field survey in order to understand the existing fabric and the reasons for its preservation, and is concluded by a proposal for conservation. Rarely does one find a rigorous and stable approach based on methodology and techniques that can be replicated in other studies.

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[2] Aggregated data drawn from two national censuses and municipal statistics are also used for this part of the analysis.

[3] See for example: Cesari, C., 'Hypothesis of Planning of Tools for Conservation Interventions on Historic Urban Areas', paper, ICCROM Library, Rome, March, 1985, pp.1-8; Feilden, B., 'An Introduction to Conservation, of Cultural Property', Unesco, April, 1979; Lowenthal,D., Our Past Before Us, Why Do We Save It?, The Blackwell Press, 1981.

The traditional approach to studying conservation areas is, however, deficient in a number of respects. Public decisions regarding conservation interventions are not carried out in isolation. In a world of scarce resources, one proposal is usually in competition with a number of others. Therefore, studies need to present the evaluation of reasons which justify conservation in a form that is comparable to those of other projects. They must also address the important question of weighing the costs and advantages of alternative forms of intervention from the point of view of different sectors in society. Conventionally, a proposal will mention the alternatives of conservation, rehabilitation, renovation or simple enhancement of an area. However, the preferred option is often selected without a clear specification of *whose* and *what type* of values are being promoted. In practice, urban conservation involves the technical input of a wide range of disciplines (eg. architecture, urban planning, sociology and economics) and an attempt to arrive at a consensus of the interests of different sectors of society (eg. property owners, consumers and municipalities). An applied conservation study should reflect such inter-disciplinarity and the various viewpoints and ambitions.

The method used in this thesis incorporates five components that can be divided into two main areas of analysis: the *verification stage* and the *development and evaluation stage*. In the former, the overall objective is to analyze the present day urban area in relation to the effects of construction and re-construction throughout history, economic and political events and various natural and man-made social forces. These create 'development stratifications' in the area under analysis, such as the transposition of different historical periods to present day conditions. The verification stage aims to synthesise and appraise such information. Fundamentally, it carries out a comparative study of architectural, social and economic transformations in the study area in relation to other contexts of interest (eg. contemporary urban interventions, the metropolitan city region, etc.). In the application to Baixa Pombalina it is useful to distinguish two main components of this analysis: (i) *historical context*, which includes examination of the urban/architectural evolution of the study area but also its relationship to contemporary interventions; and (ii) *cognitive context*, which refers to observed elements in the study area (eg. architectural structures, demographic make-up, traffic solutions, etc.). This method is quite distinct from the simple chronological examinations of the evolution of

the city which one often finds in applied conservation studies.

The second area of analysis implied by the method is called the *development and evaluation stage*. The key to this part of the methodology is that replicable evaluation methods are built into the process of developing urban interventions. We suggest that two different evaluations are carried out. The first, which follows directly after the verification stage, aims to ascertain the historical value, cultural quality and validity of occupational uses of the area under study. It involves an *architectural assessment*, using a predetermined rating scale, of the buildings and the area where action is to be taken in the future, as well as recommendations for future action and technical treatment. The two basic problems addressed by this assessment concern (a) historic/aesthetic features and (b) the potential future use of the area in relation to present technical problems.

There follows a phase where potential *intervention options* are developed. This might concern, for example, distinct strategies that involve restoration, repair, conservation or replacement. Equally it could involve various combinations of these. Another strategy that might be considered is that of doing nothing, which itself implies a particular future scenario for the area being studied. In the application to Baixa Pombalina we will see that a proposal for comprehensive conservation is contrasted to a scenario of little or no public intervention, which is what has been happening up to now. All proposals made during the planning phase should make reference to the various corrective or indirect measures that may be required to create conditions that enable the proposed intervention to be carried out. They should not simply focus on the questions that are directly related with the alterations suggested. It is crucial that the implementation and programming be included in the proposals *ab initio* and not be left unresolved.

Finally, in order to permit realistic and appropriate *selection of proposals*, it is suggested that a further evaluation stage be incorporated. This might comprise a full economic evaluation or the less ambitious process of community impact evaluation. In both cases one attempts to measure the costs and advantages for the community, which then serves as the basis for final decision making.

This then is the methodology suggested by the applied conservation study of the Baixa Pombalina area presented in this thesis. At some stages of the study it will be apparent that the analysis is not as wide ranging as might be desired (ie. as implied by the method described above). This is essentially due to data limitations. It is hoped, however, that the strengths of the method become sufficiently clear and that it is judged adequate for the case in study and for future applications to other conservations of historic city centres.

1.2. The dissertation structure

The dissertation is organized into four parts comprising a total of 14 chapters. The diagram presented in Figure 1.4 summarizes the main elements of the thesis structure. It inter-relates the main areas of research carried out and makes reference to the relevant parts of the thesis where they are included.

Part I aims to provide a theoretical background to the study of the historic city centre within the context of urban conservation. Problems of continuity, change and decay in the historic centre are reviewed through an historical perspective. Particular emphasis is given to the disadvantages brought about by city centre decay. These questions are treated generally but reference is also made, where appropriate, to the particular case of Lisbon. There is also a review of the conservation movement and its development in different countries which aims to provide the reader with the background and context to the present study. This analysis constitutes Chapter 2.

Part II is entitled *'historical context'* and is subdivided into three chapters. The objective here is to study Lisbon's historic evolution, concentrating in particular on the reasons for a gridiron urban pattern being chosen to rebuild the city after the 1755 earthquake, and also on whether the plan constitutes an original contribution to urban development in the eighteenth century, as some historians have argued. In Chapter 3, the evolution of Lisbon before the earthquake is analyzed. This is done from the perspective of various descriptions, drawings and maps produced at different stages of development. They constitute the major historical materials for studying the evolution of the city of Lisbon from the urban and architectural point of view. The chapter also

considers the effects of the earthquake and the immediate choices that were made with regard to the rebuilding of the city.

Chapter 4 examines the context of the Pombaline plan: concentrating on the European and Colonial precedents to the Pombaline plan. It has two distinct parts. The first studies the relationship of the plan and its architectural characteristics with those of other contemporary European cities. Attention is drawn in particular to interventions in France (Paris, Nancy, Bordeaux), Great Britain (London, Bath, Edinburgh), Italy (Turin) and Spain (Madrid). In the second part, a further comparison is made between the reconstruction of Lisbon and urban developments in the Spanish and Portuguese colonies.

Chapter 5 describes the various options for rebuilding Lisbon after the 1775 earthquake. It goes into greater detail when analysing the chosen plan, by Manuel da Maia, for rebuilding the damaged area (the so-called Pombaline Plan). It is shown that this constituted a sharp break with the urban pattern of the medieval city, defined by a rational gridiron plan. The chapter also points to further developments carried out in the area during the nineteenth century. Finally it is argued that both the European cities and the Colonial developments had a marked influence on the Pombaline plan. The former inspired the grand square on its southern side and the rationality of the building facades. The Spanish system of planning in South America influenced Portuguese colonial towns and the Pombaline plan itself, particularly with regard to the gridiron pattern of streets.

Part III presents what is referred to as the *cognitive context* of the study: that is, an observation of the present situation in all aspects relevant to the process of conservation. Chapter 6 describes the urban and architectural features of the Baixa Pombalina area. It is argued that the initial plan underwent a series of transformations, so that what we are now able to observe is in some important senses distinct from the intentions in the eighteenth century. We examine such details as the physical structure, the building block and the elevations. For this analysis a detailed survey focusing on three quarters was carried out.

The following three chapters, although concentrating on the case study area, relate that area to the city of Lisbon and its metropolitan region, given that developments in one cannot be understood without considering the other. Chapter 7 is concerned with the social, economic and living conditions in the area. It is supported by 1981 and 1991 census data, municipal statistics and a specific survey carried out in late 1992. The chapter identifies key elements such as the decline of the resident population in the Baixa area which is related to a general movement to the city's periphery; deterioration of housing conditions associated with an increasingly ageing resident population; and modifications in the pattern of uses brought about by the transformation of the area into one primarily dedicated to the provision of services. The existing housing market patterns are also analyzed. In Chapter 8, the commercial and administrative structure and existing retail and office market are examined. A detailed account of the background of commercial and administrative functions in the city, as well as the predicted evolution in the following decades is provided. The chapter includes a specific analysis of the commercial structure which reveals the existence of a close relationship between function and morphology. Another important conclusion is that commerce in the study area is becoming increasingly specialized and does not cater for the basic requirements of the resident population. As in the previous chapter, the information base draws on published data and a specific survey carried out for this study. Chapter 9 discusses traffic and movement in Baixa Pombalina, its development through time and the present situation. Although improvements have been made we question some of the premises used for recent modifications. Previously unpublished material relating to the study area is used together with data for the city as a whole. This enables the preparation of a traffic and movement proposal in a later part of the study.

Still in *Part III*, Chapter 10 discusses Portuguese legal, administrative and financing aspects of conservation. It examines both successes and failures and also attempts to formulate the necessary changes that are required in order to promote and implement suitable conservation strategies.

The analyses carried out beforehand are then taken as the input to *Part IV* of the dissertation. This aims to develop and evaluate a conservation proposal. Chapter 11

attempts to provide an explicit assessment of values that should be preserved. This constitutes a fundamental step in the elaboration of the proposal since it helps to determine the course of action to be applied. A method involving a *'building evaluation sheet'* is used, which provides systematic information to decision makers regarding the architectural, historical and use value of the study area and the appropriate action and technical treatment. Chapter 12 formulates an approach to conservation in Baixa Pombalina, based on the method of comprehensive conservation. It also compares and contrasts this proposal with the predicted evolution of the area if no new initiatives are undertaken: the piecemeal redevelopment scenario. The chapter has a number of key features: namely, an alternative distribution of functions in the study area; the physical conservation and rehabilitation of the buildings to accomplish the new desired uses; modifications in public spaces, traffic and pedestrianisation; and a scheme of financing the conservation initiatives (which is presented in Appendix 5).

Chapter 13 provides means for a rational selection of proposals by decision makers. It begins by discussing two methods of evaluation - the economic approach and community impact evaluation. The main part of the analysis evaluates the incidence of costs and benefits for different sectors of the community, with regard to the two proposals - comprehensive conservation and piecemeal redevelopment. This amounts to using the process of community impact evaluation, with slight modifications, as a means to aid decision making.

Finally, Chapter 14 presents conclusions, recommendations and suggestions for further research.

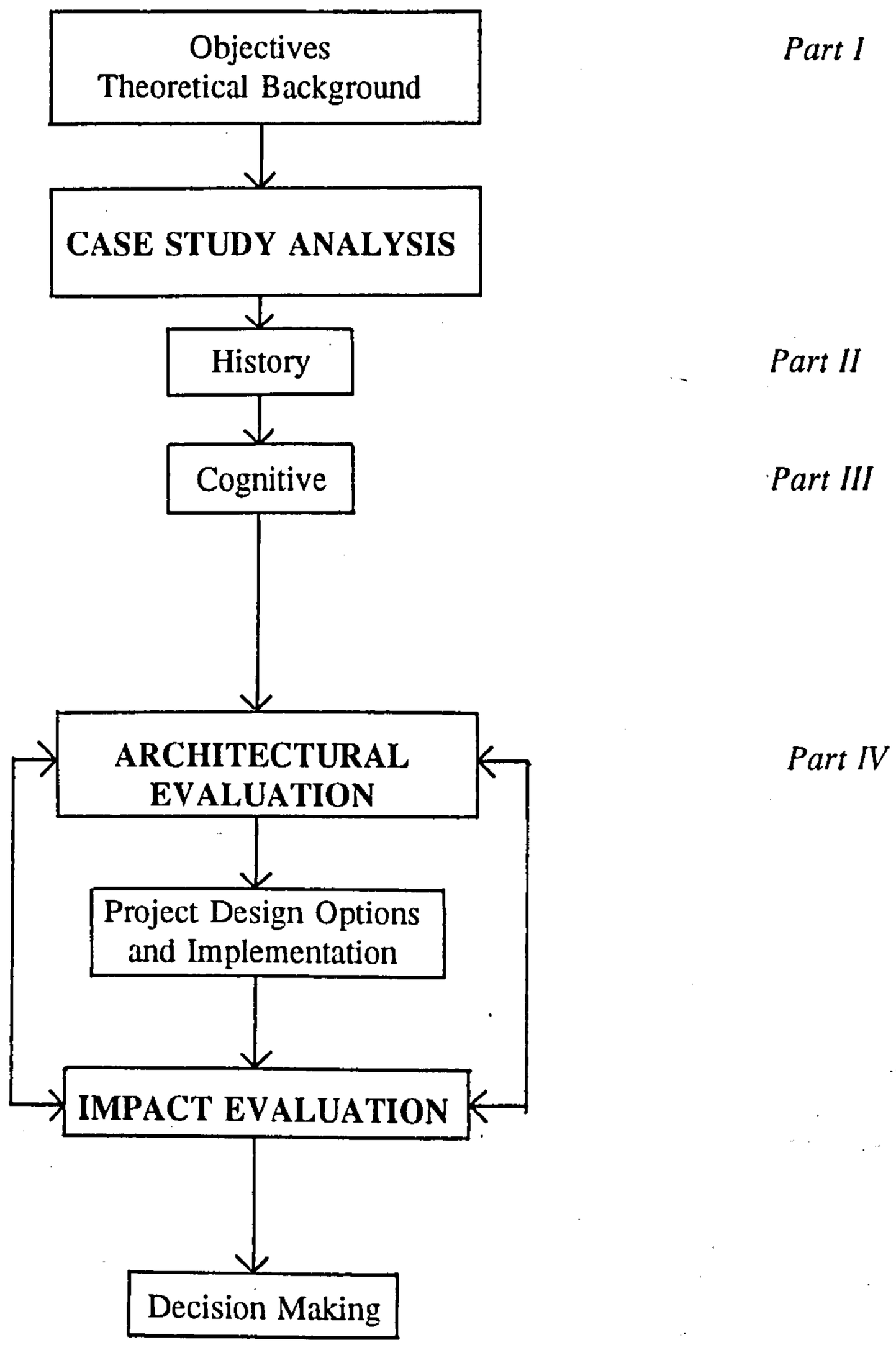

Figure 1.4 The structure of the dissertation

Part I: Theoretical Background

Chapter 2

The Historic Centre and its Conservation

2.1. Introduction

The aim of the present chapter is to examine the theoretical background for the proposed conservation of Lisbon's historic centre. Particular conceptual questions are discussed in subsequent chapters, namely those that are largely determined by the study area (i.e. the delimitation of the historic area to be rehabilitated, the activities that should be permitted within its confines and the measures proposed for its projected life). However, there are other questions, of a more fundamental nature, that need to be clarified beforehand. These concern, for example, the definition of the concept of an *historic centre*; the identification of suitable approaches to arresting its decline; and the key policy measures which these approaches suggest. In essence, the answers to such questions serve as a guide to the particular conservation approach employed. They provide theoretical reasoning to what is largely an empirical endeavour and facilitate the eventual formulation of intentions and policy action. Therefore, the present chapter is primarily a ground-clearing exercise but nevertheless a necessary one.

The chapter is organized as follows. In the following section the concept of an historic centre is examined. Section 2.3 provides a discussion of the reasons for city centre decline and identifies the need for its conservation. In Section 2.4 the focus is turned to the evolution of ideas regarding the conservation of heritage and cultural property since the nineteenth century. Particular attention is given to international initiatives, such as those of UNESCO. In Section 2.5 attention is given to the process of keeping historic buildings in use as a means of sustaining their durability and life. It is argued that a process known as *integrated conservation* is the logical meeting-point of the evolution of ideas on urban conservation (Section 2.6). Before concluding, this section analyses some integrated conservation programmes and identifies important operational issues that are implied by adopting such an approach, such as the need to consider

specific conservation interventions in the wider context of urban planning, the importance of having people living within city centres, and the need to give priority to pedestrians in the city centre.

2.2. The Historic Centre Concept

In subsequent chapters the terms 'city centre' and 'historic centre' will be frequently used. It is therefore important to clarify the meaning ascribed to such terms. A centre within an urban structure is usually associated with direction and decision-making functions, with trade and business and with public and private sector administration. It might vary in appearance and dimension but generally it has assumed these same functions throughout history.

On the european continent, the city centre often coincides with the old city core (or *historic centre*). By its pattern and its buildings one can immediately identify memories and values of previous generations. It is in the centre that one can recognize everything that the city stands for. As Sitte argues with reference to ancient cities: *'they [act] with a gentle yet irresistible power upon the temperament of the people ... anyone who has enjoyed the charms of an ancient city would hardly disagree with this idea of the strong influence of physical setting on the human soul.'*[1]

Some centres are clearly defined topographically either because they were built-up during a relatively short period of time, or they are surrounded by fortifications which still exist or were replaced by boulevards in the eighteenth or nineteenth century. Others are composite, made up of different structures either juxtaposed or in several layers showing different period of history. In marked contrast to the urban pattern of current times, they all reveal a high density of built-up area compared to open space. They often show a compact urban organization with continuous alignments, buildings with regular dimensions intersected by large historic monuments; and they contain the most valued built environment, since they are the oldest. It is in the centre that a daily conflict between new and old, and between different functions and population groups

[1] Sitte, C., City Planning According to Artistic Principles, Phaidon Press, London, 1965, p.3.

is most noticeable.

However, the definition of an historic centre may not always be so straightforward. Its area may not be easily delimited according to certain monuments and their surroundings, nor to a particular period or style, nor to some ancient areas that have survived. Historic centres differ in form and character even when they are the result of a same ideology or historical period.

At the same time, the advent of new urban planning techniques and an increasing awareness of our common heritage have resulted in a requirement that the term 'historic centre' be given a precise meaning. Argan suggests that it should be taken as the urban entity that existed prior to the industrial age, since from that period the city changed its scale, structures, functions and social composition.[2] This argument can only be understood from the point of view of a city whose origins are remote from the pre-industrial age and which expanded its initial borders at a later period. In fact historic cities in europe can be divided in two major groups, that is medieval cities and seventeenth/eighteenth century cities and industrial towns. They all are historical and have an historic centre, although they have different urban patterns and character.

In fact a precise definition of 'historic centre' is risky because, as well as with cities, the historic centre is an urban system with rich internal diversity. This should be studied and defined for each particular case in order to ensure that certain areas are not excluded, just because they can not be precisely dated or because their architectural and aesthetic features are not very important.

There are also opposing views. Some writers suggest that it is unsuitable to use the term 'historic centre' as it might lead to the rigid connotation which the term 'monument' held for so many years.[3] Furthermore, the more recent concept of 'conservation area' can cause similar problems. All these protective measures are

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[2] Argan, G. C., 'El Concepto del Espacio Arquitectónico desde el Barroco a Nuestros Dias', História da Arquitectura y del Arte, Nueva Vision, Buenos Aires, 1966.

[3] Cesari, C., 'Considerations on the Problem of Integrated Conservation', unpublished paper, ICCROM Library, Rome, 1985, p.1-7.

themselves a cause of segregation. They create separate privileged areas, and assign to them special functions, for culture, tourism, commerce. They produce legal pressures which unfortunately reduce the importance of areas around a monument or out side the conservation area borders. Less attention is paid to surrounding buildings or areas and in time this leads to a different quality of environment along the borders. This can also undermine the quality of the conservation area or of the buildings themselves. Inevitably lines and classifications have to be drawn up but conservation attitudes do not have to be confined. A greater respect for marginal areas and confined buildings is needed.

The importance of the city and of its centre is a vital question which has been analyzed by many writers such as Camillo Sitte, Patrick Geddes, Lewis Mumford. They in one way or another emphasized the role of the city as a 'monument' built by mankind which develops from generation to generation. Mumford has argued that '*the most precious collective invention of civilization, the city, second only to language itself in the transmission of culture, became from the outset the container of disruptive internal forces, directed towards ceaseless destruction and extermination. As a result of that deep-rooted heritage, the very survival of civilization, or indeed of any large and unmutilated portion of the human race, is now in doubt - and may long remain in doubt whatever temporary accommodations may be made*'.[4] This is a characteristically passionate statement which emphasizes the decline in the quality of urban life which, according to the author, is man's most precious creation.

'*Today's city is an immensely complex organism, its multifarious activities impacting on, and interacting with, one another in patterns which, in their totality, are beyond the capacity of the human mind to grasp.*'[5] Some aspects of its organization and functions, such as traffic and transportation, commercial activities, the development of districts or the decline of shopping areas are obvious, but there are some aspects that are difficult to analyze and quantify, such as the importance of the cultural life of the city. The latter is generally related with the centre as this reflects the values of the city. These

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[4] Mumford, L., The City in History, Pelican Books, Harmondsworth, 1961, p. 67.

[5] Middleton, M., 'The spirit of the city' in: Cities in Transition, the Impact of Technological Change on Urban Policies, Council of Europe, Urban Renaissance in Europe nº22, 1983, p.21.

reveal a mixture of commercial prosperity, traditional historic values, cultural activities and an appearance reflecting pride in the city. The centre of the city is the place where the intensity of life is tied primarily to economic activity and where life is the most intense in the city.

2.3. The Decline of the City Centre and its Disadvantages

In most industrialized countries after the Second World War, the restructuring of the economy at national, regional and local level, together with the idea of living closer to nature led to an exodus from city centres. Left behind was an ageing environment and an agglomeration of relatively poor people. The population in city centres began to decline, as did the physical and economic environment, eventually leading to a stage of absolute paralysis with regard to the erection of new buildings or the adaptation of the old to new uses.

The decline of the city centre has also been considered to be the result of economic and social decline. It is fair to say that society has been responsible for the crisis of the city centre, not only with regard to litter, noise, pollution, degradation and the demolition of buildings, or even with the destruction of a district in the city, but also with regard to a more profound problem, the conflict between private interests and the common good. Naturally, it will be extremely hard to alleviate such problems when a society treats production and consumption as more important than general environmental conditions.[6] On the other hand, actual physical decline can in itself contribute to economic decline. This is the case where empty degraded buildings create an adverse environment for surrounding buildings. It also reduces the incentive to maintain neighbourhood buildings in good condition and may lead businesses to close because the number of customers is decreasing. Residents may leave, driven out by vandalism and fear. Maintenance of buildings is neglected by owners and by their inhabitants who are predominantly from low-income groups of the population. The first reason for the physical decline of a city centre is that social values prevent people from seeing any development potential in old buildings or sites, together with the fact that investment is often oriented to where

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[6] Tanghe, J., Living Cities, Pergamon Press, Paris, 1984, p.11.

success is already established.

Perhaps not so apparent, is a further cause for the city centre decline, namely conflicts in government policy. On the one hand the government has to deal with urban and regional policies which have a specific spatial objective and a direct effect on the physical urban space. On the other hand, it has to promote financial, trade, defence and housing policies, which aspire to copy established patterns within those sectors and which are significant in urban life. This is easily detected if one looks at the city where there is the relocation of housing, transport routes, employment, etc., because those are elements that are immediately noticed in changed access costs for any family or business.[7] It is obvious that decisions about high tax rates on property, taxation in general, local government spending, construction of highways, are an influence on the decline of the city.

Ironically, another reason for city centre decline can be the listing of buildings. Until very recently this has been thought of as a means of protecting the buildings from change and re-use. In fact a listed building consent process allows for works of alteration or extension and for the introduction of new uses. The 1970s and 1980s have been times of testing architectural skills and the potential introduction of new functions.

By allowing a city centre to decay one disregards the investment already made in the old buildings; the material assets, the investment in labour, and equally important what Bicknell has called the 'cultural investment', - the unquantifiable combination of will, philosophy, politics and the accidents of history that bring buildings into existence. [8]

Culture is a puzzling term, used in a very wide variety of ways. If one wishes to take the German School view and distinguish between culture and civilisation one can accept that the essence of culture is the production of new values while the essence of

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[7] Harvey, D., 'Social Process, Spatial Form and the Redistribution of Real Income in an Urban System', M. Steward (ed.), The City: Problems of Planning, Middlesex, 1972, p.298.

[8] Bicknell, J., 'An Affair of Values, Resources and Investment', T.A. Markis (ed.), Building Conservation and Rehabilitation, Butterworth, 1979, p.83.

civilization is the consumption and reproduction of existing values.[9] Culture in Webster's definition, "*is the capacity for learning and transmitting knowledge to succeeding generations through the use of tools, language and any systems of abstract thought*'.[10] Culture is accumulative but through its process of creation it leads to continuity. There can be no culture without continuity.

Buildings are the prime witnesses to the fabric of many societies. It is the understanding of these societies through social history, archaeology, art and architectural history that provides the lessons for later societies to use or enjoy. This combination is what gives people a sense of their past and a sense of place and identity. The past is the source of individual and collective identity, it gives significance to cultural symbols. Thus if the continuity between past and present is preserved, a sense of order will be maintained. If the city is man's most precious collective invention it is heartening to see that many citizens are again becoming aware that living in cities can have its own intrinsic value as a form of community life because the city represents culture and culture is diverse and pluralistic.

It is now generally recognized by planners, sociologists, architects and residents that the traditional urban fabric still offers the best climate for human well being in urban areas, as it is formed by small scale surroundings, privacy, security, variety, a sense of place and identity. The problem arises when elements such as the conservation and exploitation of the built heritage, the diversity of economic functions, and the preservation of social fabric, are not working simultaneously. These are aspects that Local Authorities should always stand for, to support an integrated urban renewal where the cultural, economic and social aspects are linked together, unless they prefer to be left with a depopulated area supporting only offices and shops.

Whenever buildings start decaying the people living in them suffer and are forced to live in an area with decaying services. The wealthier move into new dwellings, leaving

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[9] Miller, J., 'The European Context: Experience and Lessons', in: Heritage and Successful Town Regeneration, Architectural Heritage Reports and Studies, nº14, Report of the Halifax Colloquy, Council of Europe, Reports and Studies, 1989, pp.13-20.

[10] Webster's Third new International Dictionary, Merrian-Webster, Massachusetts, 1986, p.552.

behind their old homes for the poor. So it does not make sense to argue that decline provides low-cost housing to people in need who have relatively small budgets.

The city as a cultural force still continues and the city centre is not losing its vitality or power to attract. Its attraction for the young and active provides it with continuing energy. What it has lost is much routine service and production which does not contribute to advancement. What it has gained is an increase in new contributors to society's evolution and wealth, in particular government, business and education. What is need is political acceptance and intensive research and development programmes in public transport and building, combined with a clear recognition of the required variety of activities. This could lead to city centres which provides greater opportunities for people than ever before.

The survival of the city centre is synonymous with the survival of the cities themselves, which are much too costly to abandon. After all, to let cities decline is of no benefit because there can be no richness of culture without continuity. Some kind of intervention is needed, and this should try to cure not only the symptoms of the infirmity but also its roots and causes.

The city and its centre are places where high concentrations of people, jobs, opportunities, functions, and buildings are found. Therefore, one might ask if concentration is bad. One could also argue, in a very simplistic way, that up to a certain point concentration is even necessary (or at least efficient in most cases) in terms of less waste of resources and lower unit cost. For example if one is building for a large concentrated population the costs of services, both utilitarian and social, are obviously lower than if one had to build in a widely spread-out area.

Urban centres have a special character that is difficult to replace. Conservation should become an integral part of the urban and regional planning process of local authorities. With them most of the important decisions rest and they have a special responsibility for the protection of architectural heritage.

2.4. Views on Conservation of the Historic Heritage

Man has always been conserving and caring for old buildings and cities; that in itself supports the idea that they are valuable and worth preserving. But the change of emphasis from a 'monument' to a much wider concept of what has come to be called 'the heritage' began as the result of the two World Wars. The extent of destruction in the European countries heightened an awareness both of the monuments and of their urban settings. Germany, Italy, Britain, France and Poland were obliged to repair their historic cities. This new awareness was further accentuated during the last twenty five years by the rapid pace of social change. At the end of World War II, in 1945, the League of Nations gave way to the new United Nations organization. The International Committee of Intellectual Cooperation was succeeded by the United Nations Educational, Scientific and Cultural Organization (UNESCO), and in 1964 the International Museums Office, was formed into the International Council of Museums (ICOM). In 1956 an International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM) was founded. At the Assembly of Unesco in Florence in 1954 a convention was established, 'The International Register of Cultural Property under Special Protection', in which an important item was expressed: *'the definition of cultural heritage covering movable or immovable property of great importance to the cultural heritage of every people, such as monuments of architecture, art or history, whether religious or secular; archaeological sites; groups of buildings which, as a whole, are of historical or artistic interest'.*

Governments began to recognize the need for extending the protection once afforded only to individual buildings. This was shown at the 2nd International Congress of Architects and Technicians of Historic Monuments (in Venice in 1964) which was concerned with the 'monument in itself as something different from an isolated architectural creation' and also with their 'settings'.[11] *'The concept of an historic*

[11] This Charter became a fundamental international document in conservation theory, since it was the base for many national legislations and 'regional charters' all around the world, but intimately related to the action of the International Council of Monuments and Sites, (ICOMOS) which was founded at the same Meeting. Although this Charter had a generic recommendative character it influenced other normative documents as happened much more later in Portugal with the 'I.P.P.C. organic law', publication, Dec.34/84.

monument embraces not only the single architectural work but also the urban or rural setting in which is found the evidence of a particular civilisation, a significant development or an historic event. This applies ... also to ... works ... which have acquired cultural significance with the passing of time.'[12] The Venice Charter on Historic Monuments is also a clear statement of current widely held views. Although trying to preserve the widest scope, it reveals that its authors thought mainly in architectural terms.

The key difference between the Venice Charter, and the nineteenth-century ideas of Morris, Ruskin and the Society for the Protection of Ancient Buildings (SPAB) is that of flexibility. The Charter allows for extreme circumstances. Unfortunately, however, there is not a great deal of guidance over what constitutes extreme circumstances.

The Venice Charter codifies the principles already sketched out in the 'Athens Charter' (1941) which marked the end of a phase in the development of the concepts of conservation, by abandoning stylistic restoration and emphasizing the conservation of authentic historic monuments and works of art. It was the first policy document accepted at an international level providing guidelines for the restoration of authentic historic monuments and works of art. It dealt with historic towns, emphasizing the preservation of their historic values, refusing modern architecture, and taking into consideration social and hygiene problems, as well as traffic.[13]

The Venice Charter clearly shows a maturing consciousness towards all historic periods and all types of historic structures. Article 3 states : *'The intention in conserving and restoring monuments is to safeguard them no less as works of art than as historical evidence.'* It deals with concepts of conservation and restoration of monuments and mentions historic sites. It omits, however, architectural groups, districts, town centres, villages and vernacular complexes. To overcome this problem, a separate document was drafted at the meeting, concerning the 'Protection and Rehabilitation of Historic Centres'.

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[12] Venice Charter, Article I, 1964.

[13] Jokiletho, J., 'A History of Architectural Conservation', Dphil Thesis at the I.oA.A.S., University of York, September, 1986, Volume I.

New 'requalification policies' emerged by the end of the sixties when new normative instruments were developed such as the 'Malraux Law' (1962), where priority was given to the preservation and recuperation of urban groups (*secteurs sauvegardés*) having architectonic or historic value. This was similar to the British law on 'conservation areas' which resulted from the Civic Amenities Act (1967).

It was clear that in those interventions where the intention was to restore and conserve, forgetting other issues such as socio-economic and local culture, important questions were raised in order to control the eviction of local residents with the subsequent arrival of a new social class able to afford the new speculative market. The issue of a connection between the physical intervention in historic areas and its socio-economic development begin in the sixties and seventies to be the new way of thinking of an urban conservation plan such as the one developed for Bologna in 1969. In Europe during the seventies and eighties there was clearly an effort to promote, defend and institutionalise urban heritage. UNESCO and other bodies published recommendations on historic conservation, enhancing the conservation of culture and the community within the urban context.

In 1972, at the Unesco World Heritage Convention a clear differentiation was made between *'monuments'*, *'groups of buildings'* and *'sites'*[14]. In the same year the 'Paris convention' for the 'Protection of the world cultural and natural heritage', also sponsored by UNESCO, aimed to prepare administrative , legal and financial measures to support the preservation of heritage. From that year on UNESCO has progressively classified buildings and groups of buildings as World Heritage Sites. One year before, the first European Symposium on Towns of Historic Interest in Split (Yugoslavia) had proclaimed the important role of Local Authorities in the process of preserving architectural heritage. This was followed by the Zurich Conference in July 1973 and culminated in 1975 with the proclamation of the 'European Architectural Heritage Year' and a congress in Amsterdam which produced the 'Amsterdam Declaration', defining the concept of *'integrated conservation'* which gave a strong basis for conservation

[14] Portugal adhered to this convention in 1978, with the following urban sites: Convent of Christ in Tomar, Jerónimos Monastery, Batalha Monastery, Angra do Heroísmo and Évora historic centres, being classified as National and 'world interest'.

planning in historic towns. Conclusions and recommendations were put forward, particularly with regard to the implementation of a new policy for the protection and integrated conservation of historic towns, old quarters of cities, and towns and villages with a traditional character as well as historic parks and gardens. The conservation of these architectural complexes, it was argued, should be viewed from a broad perspective, embracing all buildings of cultural value, from the greatest to the humblest, without disregarding those of our period and their surroundings.

In 1976 'Recommendations concerning the safeguarding and contemporary role of historic areas', published both in Warsaw and Nairobi defined urban conservation as: 'The conservation of historic towns and urban areas, is understood to mean those steps necessary for the protection, conservation and restoration of such towns and areas as well as their development and harmonious adaptation to contemporary life.'

Later in 1981 a campaign for the renaissance of European cities started and the 'European Year for the Cities Renaissance' was promoted. Portugal presented a project for the recuperation of Angra do Heroismo, the plans for Ponte de Lima and Beja. As a result of these actions which were promoted by the Council of Europe, conclusions were published through the 'Berlin Declaration'.

In 1985 the 'Convention for the Safeguarding of 'European Architectural Heritage' in Granada (at which Portugal was present) had as one of its aims the promotion of legal safeguards, the definition of financial help to the countries there represented, the development and co-operation between governments towards an exchange of knowledge, the dissemination of development policies and the participation of people in the process of conservation.

Two years later the 'International Charter for the Historic Towns Conservation' was produced and approved by ICOMOS. This underlined the importance of a new policy, able to promote the socio-economic, environmental and functional values of certain urban areas with the proposal to achieve better living conditions and allow for the establishment of community facilities. It is included in the 'Integrated Conservation' concept which is defined in Section 2.6.

Over the last decade there have been significant changes in public and professional attitudes towards urban conditions. This evolution of concepts and strategies for conservation shows clearly a growing respect for the culture of places and sites and for the importance of their integration into a wider context. The accepted view today is to look at the existing situation, keep it when possible and desirable and then to apply policies. This is related to the concept that conservation of heritage is no longer seen as simply a cost but also as an investment in the economic life of the city. Furthermore, it becomes a social matter - about people, rather than simply a physical problem. There is also agreement on another issue: the need to bring people back to the city centre. [15]

The progress of continuity and change inherent in a city implies the preservation of the historic city. This aims for the preservation and renovation of historic buildings and districts, but above all aims for the recognition of its heritage by a society. The planning and management of historic cities involves several technical and political decisions, as well as the reclassification of uses in the city and the metropolitan region, an heritage consciousness and the existence of a market. The main dilemma of conservation in European cities for the next generation will be to determine whether the legatee for such heritage will be the tourist, the residents, the commercial investor, or the community in general.

2.5. New uses for old buildings

Protection of architectural heritage is generally approached in a scientific way and care is taken to ensure that the authentic form, and substance of a site are preserved. Nevertheless, conservation technicians are as divided as ever over the way in which essential interventions ought to be carried out. There are two main divisions, those who insist primarily on the conservation of the authentic, the original fabric of buildings, and those who consider that the real importance of buildings lies in their value as urban and/or historic symbols. The latter are even prepared to accept reconstruction at times. There are, however, arguments against this second alternatives. Firstly, more often than not reconstruction displaces people who live in the area. Second, it pretends to show

[15] Nuttgens, P., 'Heritage and Successful Town Regeneration', Report of the Halifax Colloquy, Council of Europe Reports and Studies, n.14, 1989, p.104-105.

a false and static side of history and thirdly, the values on which it is based are restrictive and specialized. But whenever dealing with large scale interventions it is necessary to introduce new functions with consequent adaptations.[16]

One of the main conclusions reached at the European Symposium of Historic Towns, held at Split in Yugoslavia in October 1971, was that: *'the main objective of preserving historic buildings and communities should not be to keep them as mere museum pieces but to give them a useful social function while respecting as far as possible their original vocation and content.'* This argument is justified by Lowental: *'The past is what we make of it, not only what it was; the process of preservation changes the look and feel, if not the form and substance, of protected sites and artifacts. We must accept many such transformations as inevitable. We may value what is authentic, but most relics we live with have been - have to have been - adapted, transformed, modernized'*.[17] And by Linstrum who alerts us to the necessity of evaluating the viability of a building's new uses: *'a continuity of useful life in a durable fabric, which may be achieved by various means, and decisions have to be taken about what is required and what is permissible'*.[18]

The process of converting a building from one use to another is ancient and commonplace. *'New uses for old buildings may often be the key to their preservation. Controls over land use allocation, density, plot ratio, day lighting and other controls should be relaxed where this would enable historic buildings to be given a new lease of life. A sensitive and sensible application of the Building Act 1984 and the fire safety legislation is also extremely important. This advice is particularly important at the present time when the future of so many old buildings is threatened by neglect and decay if not by wanton destruction or redevelopment proposals. Local authorities are asked to help owners find ways of keeping their buildings in economic use and thus in*

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[16] Due to the difficulty in establishing a common language in Conservation because citizens, professionals and nations have different interpretations of the terms which leads to mis understandings at local and international level, Appendix 1, an attempts to clarify the notions based on definitions that are most accepted internationally.

[17] Lowental, D., Our Past Before Us, Why Do We Save It?, The Balckwell Press, 1981.

[18] Linstrum, D., 'The Principles of Conservation, The York Gospel', paper, 1991, p.1.

repair'.[19] Without re-use many old buildings would have been demolished and replaced by new structures. What have been the resultant benefits?

Considering Historic Buildings as an Economic Asset[20]

(i) A developer will be able to make use of all, or part of the basic structure, foundations, fittings and services, saving on the cost of buying and installing new materials. The contractor may also be able to use existing road access and public utilities and thus reduce his site costs.

(ii) Many traditional buildings conserve energy. Developers and designers of new buildings, especially speculative commercial office blocks and industrial schemes, have been slow to realise that thick walls, small windows and natural lighting and ventilation lead to economy in energy consumption. These advantages are common in traditional masonry-built structures, specially when large internal areas can be reduced by subdivision without destroying the essential architectural quality of the building as a whole.

(iii) The conversion of an existing property rarely takes as long to complete as the provision of a new replacement building, which first involves demolition, then site preparation and finally complete reconstruction. Quicker completion on site means a more rapid return on investment and quicker repayment of loan charges, which may themselves be lower.

(iv) Completely reconditioned traditional buildings are likely to continue in use for as long as all but the most exceptional new replacements, and fabric maintenance costs need not be disproportionately high. Well publicized and expensive failures in modern development suggest that it may sometimes prove wise to rely on the familiar and well-tested constructional principles used in structurally secure older buildings.

(v) Demolition costs can be saved. Demolition will be particularly expensive if the building is large; if for reasons of public safety and the risk of damage to adjoining property, all or part of it must be dismantled by hand; or if there is little possibility of salvaging material of commercial value for re-use. Where listed buildings are concerned developers cannot not assume that fine fittings or ornamental features can be sold at the

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[19] Secretary of State in Circular, 8/87, paragraph 19.

[20] Following the issues presented by, New Uses for Older Buildings in Scotland, Scottish Development, Majesty's Stationery Office, Edinburgh, 1981.

present inflated prices of the antique market.

(vi) A well conceived conservation of an historic building can bring prestige to its owner.

There will be Local Benefits such as:

(i) The surrounding area will nearly always gain some advantages when a redundant building is brought to life by an appropriate new use.

(ii) The outward appearance of many historic buildings is dramatically improved during conversion by stone cleaning, restoration of rendering and paintwork, renewal of historic detail and by improved landscaping. When such a restored or adapted building forms part of a group, neighbouring owners may often be encouraged to bring their properties up to an equal standard.

(iii) Local authorities in particular stand to benefit from approving and encouraging attractive new use. If the quality and economy of the surrounding area are raised, the community will receive multiple benefits.

and Non-Economic Benefits:

(i) Old buildings also serve an educational purpose by preserving direct evidence of former technologies and vanished life-styles, and by maintaining specific associations with events or people famous in a local or national context. Therefore they act as resources for local history and, taken together, for the history of the nation.

(ii) Without continuing effective re-use of historic buildings, evidence of vanished ways of life may only be available second-hand in libraries, museums and archives.

The cost of converting a building is in most cases less than the cost of new construction, the reason being that many of the building elements are already there. However this cannot always be taken for granted. For example in conversions where structural upgrading is necessary to comply with current standards of fire protection, or when new fire escape stairs are required, the cost of rehabilitation is going to be greater than that of new construction. The work is not worthwhile, unless there are overriding environmental benefits as in the case of historic buildings.

The economic arguments for the rehabilitation and re-use of a building are the first to be discussed, therefore the first step is to produce a cost feasibility study in order to decide whether or not rehabilitation is viable. The most important factors are: (i) the expected rental income; (ii) the estimated cost of development, (iii) the cost of acquiring the leasehold or free-hold of the site, (iv) the cost of finance.[21] Generally there are two problems encountered in revitalising the architectural heritage. First to find a compatible use for the old buildings and second to meet the financial costs, not only of restoration, but also of rehabilitation. Apart from the economic discussion on the re-use of old buildings, the aspects concerning the historic aesthetic and social values should have equal importance for the establishment of new uses to old buildings.

2.6. Integrated Conservation as a means of preserving the historic centre

The present burdens on urban centres from functions that are incompatible with the structure of historic towns can only be solved by the decentralisation of all activities which require mass participation. Yet at the same time, historic centres should be kept alive, and the task is to select those activities which are ideally suited to historic centres. Also crucial is the achievement of heterogeneity and integration among, people, activities and buildings. To achieve this it is necessary to progressively reduce the size of homogeneous zones and reduce areas under the same classification. Therefore it is necessary to create different packages of mixed uses. This zoning change needs to be supported by the local authority and enacted by the local government.

Mutually compatible activities (shops, services and housing) should be encouraged, and conversely there should be a discouragement of mutually incompatible ones (eg. schools and noisy activities). Some re-allocation of land use according to these general principles is inevitable for the city centre conservation. But how far can these changes go? The measurement of functional change is likely to be achieved but the point at which changes become dangerous is not so precise. It is here that the relationship between the physical heritage and the level of functional activity which forms the present environment requires a high degree of interpretation.

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[21] Highfield, D., Rehabilitation and Re-use of Old Buildings, University Press, Cambridge, 1987, p.3.

It is therefore important to determine the level to which a building, or a group of buildings, and its activities fulfil the requirements of the socio-economic life of a city, as well as those of its historic interests and reduce the rate of growth before that level is reached. This is a difficult task, however not an impossible one. Integrated Conservation has been providing answers for this concern. Accordingly, it involves several disciplines (such as architecture, planning, economics, sociology, etc.) but above all it involves the responsibility of local authorities and a call for citizen participation. The success of any policy of integrated conservation depends on taking social factors into consideration, and the legal and administrative supportive measures. It needs appropriate financial means and requires the promotion of methods, techniques and skills in restoration and rehabilitation.

The essence of *Integrated Conservation* has been explained in the following terms. It comprises *'interventions based on the optimum re-utilization of the existing architectural patrimony. Conservation should therefore be effected, i.e. integrated, through restoration work directed principally toward providing functional dwellings and efficient services; restoration and rehabilitation for the optimal use of 'all' the existing building stock, historic and recent. It is in practice 'reuse' of the building environment, meaning by the term 'reuse' the process of reintroducing onto the market a building patrimony of merit which is presently underutilized or abandoned; the intent is not only that of halting the waste but, given the present economic situation, of opposing the unjustifiable investment in new construction.'*[22]

The main option of an integrated conservation strategy for historic centres is to moderate the growth of the tertiary sector, by creating for example, several centres and restoring the residential function. There has to be an inter-relation between the historic centre and the periphery, and it is essential to undertake a social recuperation of the historic centre in order to guarantee active conservation of the architectural heritage.

One of the main requirements of integrated conservation is related to the reconcentration and redistribution of urban areas. Therefore, land use, distribution, density and public

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[22] Cesari, Carlo, 'Considerations on the problem of integrated conservation', paper, ICCROM Library, Rome, 1985, pp. 1-7,(p.3).

transport ought to be planned as a whole. This can only be achieved through the interaction of metropolitan authorities which are empowered to promote general plans and determine land uses and transportation policies as well as the allocation of property.

Many examples of integrated conservation in Europe, either positive or negative, can be cited. Each of them involves to different degrees, physical conservation, the preservation or restoration of the urban tissue for aesthetic, historical or touristic reasons; or the improvement of the living conditions in the neighbourhood. But these aspirations were and often continue to be in conflict.

In cases such as in Plaka (Greece) the dilemma was whether to conserve the existing surface buildings or to dig below the surface to explore the ruins.[23] More concern was taken with the preservation and enhancement of existing buildings and improved amenities for the residents, as compared to the desires of the archaeologists. In Bologna the purpose of the local authorities was to carry out a rigorous study of historic buildings and types, designating them for different levels of restoration with a view to bringing back to the city centre the working-class which was moving out to the suburbs. The option was to conserve the whole of the city centre, with both demolition and functional change. The city proposed, for ideological as well as practical reasons, a program for expropriating property in the inner city, rehabilitating it with public funds and treating it as public housing. The whole conservation process was thus linked to the maintenance of pre-existing functional and social patterns as well as to integral transport and land-use plans. Citizen participation was considerable, and the experience became a model of how to carry out a programme of integrated conservation despite the existence of only 300 rehabilitated dwellings. Many Italian cities, such as Milan, Bergamo, Pesaro, Brescia and Ancona among them followed the Bologna example.[24]

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[23] Plaka is an area below the Acropolis in Athens, a neighbourhood of the nineteenth century or older, on the top of ancient Greek remains. Zivas, D.A., 'Areas of concern: the saving of Plaka', Part I, in: Monumentum, volume 26, Nº 1, March 1983, pp.3-22.

[24] Cervellati, P.L., and Scannavini, R., Bologna; Politica e Metodologia del Restauro nei Centri Storici, Società Editrice Il Mulino, Bologna, 1973.

Amsterdam has also been, since 1970, the object of a vast urban renewal project. This involved both the old part of the city and the nineteenth century area with an emphasis on housing (slum clearance, new construction, housing rehabilitation, and relocation) and on improving the residential environment (public transport, social-cultural facilities, play areas, parking, and other traffic measures). Substantial support which came from the National Government, consisted of a multiyear financial and legal plan to be executed by both the Amsterdam and National Governments.[25]

A well known intervention took place in the Jordaan neighbourhood. This has been the object of an integrated plan, aiming for the preservation of values, keeping up the social and cultural facilities and bringing them gradually up to a higher standard in order to attract those groups of inhabitants who are leaving the area and the city. The old pattern of streets and canals was kept, housing was increased and businesses reduced, especially those causing traffic problems. In order to stimulate housing in the area and provide neighbourhoods suitable for families with children several improvements were essential such as the creation of green open spaces (built by cleaning the courtyards of sheds) or small squares by demolishing some buildings.

In Chester the conservation programme emphasized the need for confidence in the economic future of the city, to attract the necessary investment for both the restoration of buildings and new developments. This objective emerged from an understanding of the whole town, the way its parts are related to each other and its role in regional and national terms. Conservation in Chester was seen as a fundamental element in planning for the future of the district and a key element in the economic regeneration of the city and in the creation of a higher quality of life for the residents.[26]

The Chester policy on conservation stressed the importance of having people living within the city centre, therefore it promoted the protection of existing houses in the city

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[25] Unesco, 'protection and Cultural Animation of Monuments, Sites and Historic Towns in Europe', Unesco, 1980, p.269-315.

[26] Insall, D.W., Conservation in Chester, Conservation Review Study, Chester City Council, 1986.; and Insall, D. W., Department of the Environment, Conservation in Action: Chester's Bridgegate, HMSO, London, 1982.

centre and the creation of new ones. To handle the financial problems of conservation a new concept was introduced, a positive 'Conservation Rate' and the establishment of a 'Conservation Fund'. The objective of the conservation Fund was: to assist in the payment of fees or charges for providing specialised conservation services; to aid in the establishment of Historic Buildings Trusts and the repair of buildings in the control of such trusts; and to finance the publication of conservation reports. An important advantage of this fund was to free the Conservation Programme from the restrictions of an 'end of financial year accounting'. This is based on the accumulation in each financial year of sum not spend within that year but saved for future use. In this way it was possible to pre-save for works in large schemes or for years when grants are very small.

Although with some failures, related to an over-emphasis in the city centre, to less attention being paid to the edges of the conservation area and to the loss of important listed buildings, Conservation in Chester has succeeded well. Chester has been rediscovered as a place to live and to shop. It has a high standard of the historic environment attracting residential use and a successful shopping centre. Conservation in Chester has the general support of the city and the district. The results of the programme have all been possible through public support and confidence which enables the Council to levy a 'conservation rate' and the use all available means to save historic buildings.

In Portugal in Oporto the Ribeira-Barredo intervention of 1974 aimed at integrated conservation. The area is part of Oporto's historic centre dating from the eighteenth and nineteenth centuries. It was in very poor condition and had the highest density in the city, 422 persons per hectare. The project had three objectives: (i) the provision of better housing, (ii) architectural conservation, and (iii) cultural renovation. Above all the aims were to coordinate all these objectives in order to conserve the physical and social character of the area. Although this programme encountered some problems and difficulties, such as the relatively slow development of the process, the unpredictability of securing jobs in the area, as well as the philosophy of intervention applied to the

buildings, the work has some merit.[27]

It demonstrated that improvements could be made in an area of neglect and physical degradation, in contrast to the proposal, in the existing master plan for its demolition. It had important lessons for the rest of the country. It also demonstrated the value of integrated conservation, through the successful combination of housing improvement, architectural conservation and cultural renovation.

Methods used for dealing with traffic in historic areas are familiar all over Europe. Attitudes towards traffic in towns and city centres have changed as the adverse effects of the growth of motor vehicle ownership of the past decades are felt today. The idea of inducing the private car owner to use improved public transport is widespread, although it is a fact that for many people the possession of a car represents a major advance towards a better way of life. The impact on the environment may be considered to be of little cost compared with the increased freedom of movement and range of activities that a car provides. In most European countries to use a car, even allowing for the fixed costs, is still cheaper, more comfortable and quicker for travel to the city centre (despite the traffic jams) than public transport. However, the possession of a car within the centre of an urban area contributes to a worsening in the quality of life through a deteriorating environment.

One of the most popular policies in most Central European Countries has been traffic calming. The objective is to improve the street environment on residential and main roads in built up areas for the 'weaker' road user.[28] It was originally developed in the Netherlands in the late 1960s and early '70s. Carmen Hass-Klau gives a definition which can be used both in a wider or in a more restrictive sense. In the wider sense it may be defined as an *overall transport policy* concept, which includes, apart from a reduction of the average motor vehicle speed in built-up areas, a strong promotion of

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[27] Concrete was largely introduced in the medieval structure of the buildings, leading to the destruction of its historic value, therefore reducing the evidence for future generations, which was later in the process revised and changed to a more careful attitude.

[28] Hass-Klau, C., 'Traffic and Transportation in Cities', Civilising the City, Quality or Chaos in Historic Towns, Nic Allen, Edinburgh, 1990, pp.41-48.

pedestrian, public and bicycle transport. It also involves different restrictive measures against motor vehicles according to the defined needs of the built-up environment. Road parking and parking restrictions are two of the possible measures.[29] It has three main objectives: (i) to reduce the severity and the number of accidents in built-up areas; (ii) to reduce air and noise pollution; (iii) at the same time to improve the urban street environment for non-motor users.

These measures have been widely promoted in several countries. In the Netherlands road pricing is being introduced between 1992-95. This system will be cordon based and will operate with prepayment of electronic value cards. The objective will be to reduce the forecasted growth in peak hour urban car use in 2010 (vehicle Km) from 72% to 42%. Also in Germany the experience of traffic calming has been a success. First started in the 70s in small-scale residential areas, it is now being enlarged in some cities to all of its residential areas. The result has been a reduction in the severity of accidents, a drop in pollution levels and there has been a tendency for car users to drive more serenely in other areas. In Italy there is a strong attempt to restraint traffic into city centres. In Bologna the option was to close 5sq Km of the city centre to cars apart from tourist and service vehicles. At the same time 12.000 parking spaces were created outside the town with buses connections every two or three minutes.

The city centre can be a desirable place to work in but also to live and spend leisure time in. Public transport must cease to be treated as a second class service, and must be improved, so that people actively wish to use it. Another way of attracting people to use public transport has been experimented within Bologna (Italy) where since 1973 all public transport is free at certain periods of the day.

It seems accepted that public transport should complement the automobile and not compete with it. Good results can be achieved with each of the two sectors and an investigation is under way.[30] However, it is not too early to say that the possibility of

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[29] Hass-Klau, C., The Pedestrian and City Traffic, Belhaven Press, London, 1990, p.4.

[30] For further information of these approaches and results see: 'Optimizing Street Operations Through Traffic Regulations and Control', (Washington, D.C., National Cooperative Highway Research Program, Rep.110, 1970), and op. cit., 'Optimizing Flow on Existing Street Networks', (Rep.113, 1971).

having a free choice is still very far away. Karl Krell argues that 'no free country has yet found a satisfactory answer to the question of who should be forced to use a different means of transport', and he followed by saying that 'solutions like implementing road pricing and higher parking rates are an anti-social measure'.[31]

The publication of 'Traffic in Towns' underlined the importance of the segregation of motor traffic from pedestrians and encouraged some Local Authorities to think about pedestrianisation. Norwich, which was one of the case studies in the report, became the first town to close a street (in 1967) to motor traffic. It also had a powerful influence on the overall planning structure of land use and transportation planning which was seen as being in unity.

The increase in the number of pedestrianized streets has been considerable over the past twenty years. Concurrently, politicians and the public are concerned about the extent to which the city environment can be improved by reducing traffic, and consequently reducing all levels of pollution and accidents. However the reasons why traffic has been banished from a particular street and how a new function is expected of a redesigned street should and must be well documented.[32] Nothing has been published on the wider, strategic aspects of pedestrian improvements. To be successful it is necessary for buses to run at frequent intervals.

There are a small number of historic areas in Europe and the Americas where the concept of pedestrianisation is extended to entire central areas, as in Dubrovnik and Venice. In Britain many town centres have been pedestrianized and improved. In 1966 the Minister of Housing and Local Government together with the city and County Councils commissioned a study for four historic towns, Bath, Chester, Chichester and York. Also, a project to link pedestrian streets with existing covered arcades in Leeds has been implemented with great success. Efforts are starting to link that area with the

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[31] Krell, K., 'Using urban planning concepts to reduce travel and improve the environment' in Traffic, transportation and urban planning, International Forum Series, George Godwin, 1981, Volume I, p.42.

[32] Thompson, J.M., 'An evaluation of proposals for traffic restraint in central London', Journal of the Royal Statistical Society, Series A, volume 130, nº3, 1967.

main railway station and with peripheral parking. However the experience of large cities such as New York, Paris or Rome shows conflicting evidence. Careful prior planning which considers possible the effects of such measures before their implementation is required, together with objective evaluation criteria. Furthermore, public information campaigns regarding the implementation of such schemes should be conducted.

The level of air-pollution and noise in a pedestrianized street is decreased considerably. Noise levels can drop up to 10 dbA, although they increase on adjoining streets. Therefore it is important to have the basis for formulating policy guidelines on pedestrianisation but it is also necessary to consider in advance the effects of such actions on traffic and on the environment. Often pedestrianisation has been conceived as a process of traffic removal, as there is still the idea that a scheme is good when a large amount of traffic is removed. Sometimes, just by identifying or quantifying the environmental characteristics it is possible to alleviate traffic problems and achieve much more pleasant conditions for city users.

2.7. Conclusion

There is no doubt that considerable city centre rehabilitation would have taken place without the growing conservation movement. The conservation movement, having been applied to architecture and housing is now widely interpreted in relation to the whole city and its region. Consequently, a greater understanding of the complexity of activities is possible and a more sensitive design approach.

Conservation is a wide concept, which involves and permits change and preservation. Conservation means breathing life into buildings, sometimes by restoration, sometimes by sensitive development, sometimes by adaptation to new uses and always by good management. The best use for an historic building is generally its original use, and preservation may be the best option. Often the test is to find the right type of new use or adaptation which keeps a building in active and economic use, while not destroying its historic or architectural character.

Continuity and change are essential for life in the city. Flexibility can support change in urban areas which seek conservation. Conservationists should understand the past in order to allow for cities to evolve, welcome the future and accommodate the present without risking a break of continuity with the past.

Most European countries have in the past two decades enacted comprehensive legislation dealing with both conservation, planning and development control. This largely results from the Amsterdam Declaration which provided official recognition for conservation as the principal theme of architecture and planning. The Declaration gave significance to the historic, physical and social components as part of the same process of conservation. It also emphasises the importance of architectural heritage as being indispensable for a balanced and complete life in which 'memory' is essential. It also considers historic centres as a means of favouring social balance and integration.

The concept of integrated conservation has now been firmly established and the 'spirit of social justice' has become the 'first of considerations in all urban and regional planning'. Progress has been in the elaboration of programmes and in the co-ordination between the authorities responsible for conservation, but, there is still a long way to go. More legal, administrative, financial and technical support is needed. It is vital for governments and local authorities to ensure that the interests of architectural conservation are recognized as an integral element in planning. Local authorities should use their powers and capacities to develop special policies for conservation areas and to make special administrative arrangements in order to have public participation, coordination between the several departments and professional interests and for access to specialist advice on architectural matters. Considerable efforts should be made to keep the public informed and involved with conservation and to provide specialized training for conservation craftsmen in order to ensure the continuity of historic buildings. Integrated conservation must be seen as one of the permanent elements of social life and not just an administrative constraint.

Part II: Historical Context

Chapter 3

Lisbon before the Earthquake

3.1. Introduction

Part II of the dissertation examines the historical context of Baixa Pombalina. It aims to study the 1755 reconstruction plan for Baixa and understand the reasons for the selection of a gridiron pattern at that time. Its originality and contribution to eighteenth century urban development is also debated and questioned. This analytical study of the past covers the historical evolution of Lisbon's urban and architectural moments and its relationship to contemporary interventions. This analysis is approached in three directions: (i) the earthquake and its antecedents; (ii) the area's contemporary context, including the european and colonial precedents; (iii) the plan's realisation and subsequent evolution up to the present day. These constitute respectively, Chapter 3, 4 and 5.

The present Chapter 3 starts at the moment when the city was damaged by a major earthquake. It estimates the ruined area and follows by reporting only the first measures for the reconstruction. (Section 3.2)

In Section 3.3 the pre-Pombaline city, is investigated, from its origins to the eighteenth century. Through selected iconographic material which is comprised of written descriptions, plans and pictures, we aim to analyze and contribute to the perception of Lisbon at that time and to give information on the transformations the city was, going to undergo in the eighteenth century with the introduction of a gridiron plan.

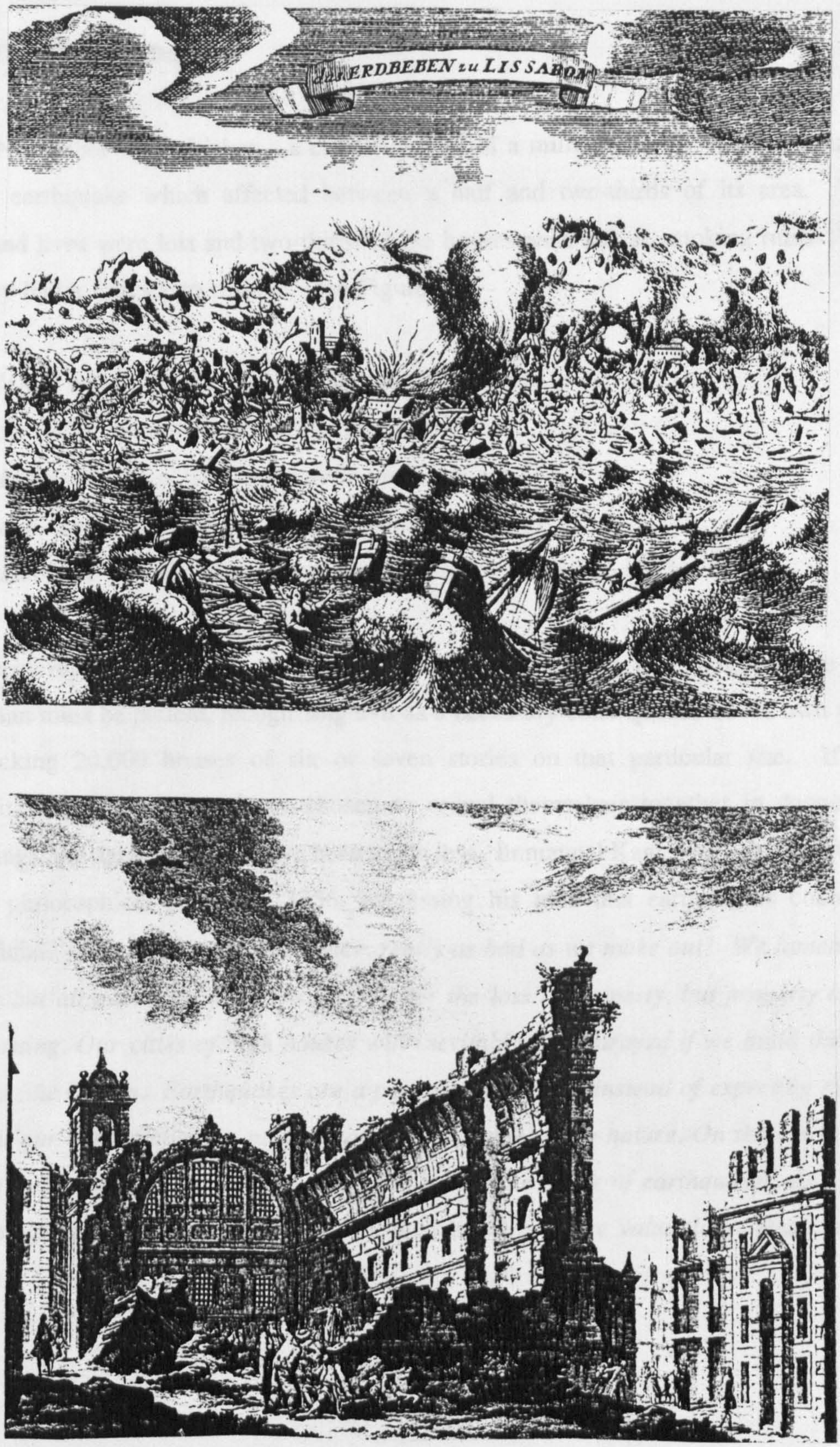

Figure 3.1 Lisbon seen from the Tagus river during the earthquake (anonymous). Engraving showing the ruins of the church of S. Nicolau (M.M.Pais et Pedegache).

3.2. The 1755 earthquake

On 1 November 1755, Lisbon - a city of quarter of a million people - was devastated by an earthquake which affected between a half and two-thirds of its area. Ten thousand lives were lost and two-thirds of the houses were left as smoking ruins. The country had a tragedy to resolve. (see Figure 3.1)

> *'Quel crime, quelle faute ont commis ces enfants*
> *sur le sein maternel écrasés et sangants ?*
> *Lisbonne, qui n'est plus, eut-elle plus de vices*
> *que Londres, que Paris, plongas dans ces délices ?*
> *Lisbonne est abîsmée, et l'on danse à Paris'.* Voltaire, 1755[1]

Rousseau rejected Voltaire's gloomy picture of man's unhappy fate on earth.[2] He said that man must be patient, recognizing evil as a necessary consequence of his own folly in packing 20.000 houses of six or seven stories on that particular site. If the inhabitants of the city had not chosen to crowd themselves together in dangerous buildings, the damage would have been much less. Immanuel Kant, too, published three short philosophical papers in 1756, expressing his idea that earthquakes could be beneficial. *'Are they, in the first place, really as bad as we make out? We lament the dead; but all men must die. We grieve over the loss of property, but property is not everlasting. Our cities of high houses will inevitably be destroyed if we build them in places like Lisbon. Earthquakes are a part of nature; and instead of expecting nature to suit our convenience we must accommodate ourselves to nature. On the credit side let us remember that the subterranean fire that is the cause of earthquakes also gives us hot springs and baths, and that it has also formed the valuable minerals in the rocks...'*.[3]

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[1] Journal Encyclopédique, April 1756.

[2] Kendrick, T. D., The Lisbon Earthquake, Methven & Ltd., London, 1956, p.129.

[3] ibid., p.132.

We can imagine a destroyed city where 30.000 people either lost their houses or lay buried under the ruins. Kant wrote in the chapter *'Awful loss of life - destruction of property' 'For four days the city continued a prey to the flames, during which period violent shocks were repeated at various intervals. Among the buildings destroyed, were the magnificent Palace of the Patriarch, built by Dom John V; the Royal Palace; and churches and convents without number; while of private palaces and common dwelling-houses overthrown, some idea may be formed from the fact that entire streets became one mass of ruins.'* He then added *'When this catastrophe occurred, the royal family were fortunately at the small palace of Belém in the suburbs of Lisbon. Their consternation was great; the whole court was in tears.'*[4]

The 1755 earthquake brought about the transformation of the city in a way that was as important and unique to Portugal's history as it was rare in european town-planning. King José I, who reigned between 1750 and 1777, virtually abandoned power, handing it to the future Marquis of Pombal, Sebastião José de Carvalho e Melo. *'What is to be done'*, exclaimed Dom José, *'to meet this infliction of divine justice?' ... 'bury the dead, and feed the living,'* ('senhor enterrar os mortos, e cuidar dos vivos') was the calm and immediate reply of Pombal.[5]

This opportunity, born as it were out of disaster, was grasped immediately. It was a pretext which allowed Pombal to seize the reins of power, making an immediate impression by the energetic measures he took to combat the widespread panic. Pombal was a nobleman from the lesser nobility, fifty years old when he began a series of far-reaching actions. First, he aimed to bring down the traditionalist aristocracy and the Society of Jesus (which for 200 years had controlled the country through the court, the schools and Brazilian commerce). He had the police behind him, a force created in 1760; a judicial system; the new army; and the commercial middle class, who enjoyed many privileges. The new intellectuals, the converted Jews and the freed slaves also supported him.

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[4] ibid., p.132.

[5] Smith, J. Esq, Memoirs of Marquis of Pombal, vol.I, Longman, London, 1843, p.92.

In 1753 and 1759 he created companies with Portuguese capital (Brazil, Indias Agricultura e Produção Vinícula do Norte do País) and the Commercial Assembly in 1755, in order to control economic activities and protect national interests against the British ones, which, during the previous sixty years, had enjoyed a privileged position in the Portuguese commercial world. More than half the industries belonged to foreigners, and most of them were created after 1770. Portugal was living on Brazilian gold. The Pombaline middle-class lived a life without ostentation; only later, around 1792, would they have palaces. Pombal was the 'Leader of the highly commercial middle class' in a 'country of importers, where ideas, institutions and men were imported',[6] His outlook, based closely on the ideas of the Enlightenment, in a way '*had not done more than distort, caricature and compromise*'.[7]

The newly rebuilt city would permit Pombal to create the structure for his political plans and the new social order. A man of determination with a practical mind, he took control of the city immediately. He ordered a topographic survey to be made which provided an 'x-ray picture' of the city seen through its ruins. This was to serve as a basis for successive explorative lay-outs of the urban structure. Prohibition, on pain of immediate demolition, of any kind of permanent construction or reconstruction, both in the suburbs and within the city itself, was decreed, and confirmed several times in a draconian manner.

His authoritarian scheme was organized in:

(i) A single ideological and programmatic approach.
(ii) A consistent urban and architectural proposal.
(iii) A stimulating, but also repressive, legal and administrative system.
(iv) A rationalized system of construction and technology.

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[6] Marques, A.H.O., History of Portugal, volume II, Columbia University Press, London, 1972, p. 207.

[7] Sérgio, A., 'Notes about the Marquis of Pombal', Grei, nº2, p.138.

3.3. The pre-earthquake city

The historical analysis of pre-earthquake Lisbon shows that from as far back as the twelve century the castle and the cathedral became the two dominant elements from which the city would develop. From Osberno, an English crusader who helped in the conquest of the Moors, we have the oldest description of Lisbon dating from the twelfth century. He defined Lisbon as an active city, both socially and culturally. He described the city: 'As implanted on the top of a round hill and its walls come down to the river bank, from which it is separated just by a wall ... Its buildings are agglomerated so closely that except for the commercial ones, it would be difficult to find one street with more than eight feet in width (2,5 m), a width that it is not unusual to find today in the oldest part of the city'. Osberno also talked about the place where Lisbon cathedral stood, where he found a 'Mosque of five naves', but the Portuguese King Afonso Henriques subsequently ordered the construction of a Christian cathedral to replace it.

Lisbon was a disordered and confused agglomeration, where the streets changed to winding alleys closely packed inside the walls. The city was surrounded by vegetable gardens and outlying settlements. The relationships between the interior and the exterior of the city were the most characteristic urban features of Lisbon in the thirteenth and fourteenth centuries. The Rossio was pivotal as a market place by the city gate where farmers came to sell products.

The first expansions that overstepped the 'Moorish Walls' were in a medieval development beside the houses inside the walls. The city had new areas to the east and south, a low one built on the sediment which had accumulated by the silting up of the river Tagus, and other areas built up outside the city gates. Lisbon extended from the river front up to the Rossio.

A large proportion of the population was christian. They were allowed by the arabs to live in the outskirts, (*arrabaldes*). At that time, between the Madalena and S. Julião Parish, was the 'Big or the Old Jewish Quarter' (*Judiaria Grande ou Velha*), which occupied a relatively extensive area between the present Madalena, Correeiros, Vitoria and Comércio streets. Another jewish quarter called the 'Small or New', was a simple

road flanked by houses on the site now occupied by the Bank of Portugal and the S. Julião church. A third jewish quarter would have existed near S. Pedro de Alfama tower, on the present Judiaria (*Jewish*) street, between the Rosario Arch, Terreiro do Trigo, up to S. Rafael Largo.

At this time a sense of nationality began to emerge. The old city began gradually to adapt to western and christian culture, not only by modifying its urban character but also through the construction of new churches and convents and the transformation of the existing ones. One of the first steps was the rededication of the old mosque by the restitution of the christian faith. Very soon the reconstruction in romanesque style began. Besides the small churches founded all over the city, two parish churches, S. Vicente and Santos Mártires, were erected. The city was limited to an area of 155 hectares with seven parishes, by the old walls between the castle and the river

By 1373 the city had expanded beyond the moorish walls and covered six times the original area. King Fernando I then built another fortification named Fernando's walls after a large fire which was started by the Castilians. The walls would have been able to enclose 65.000 people in an area of 103 hectares (254 acres). It was said that Lisbon had seventy-seven towers and thirty-six gates. During this century, growth was gradual and continuous, proceeding from the castle hill, specifically towards the north, west and south. Lisbon had seven important convents, some noble houses, some public buildings, the mercantile port and the Royal Customs (built in 1288). The Ribeira and Nova dos Mercadores street were the busiest areas in the city. Figure 3.2. illustrates Lisbon in the fourteen century. A nucleus by the castle and two lines of city walls are clearly seen, enclosing a city of tortuous streets and alleys from which the religious buildings emerge as important landmarks.

Figure 3.2 Plan of Lisbon in the fourteenth century.

From the fifteenth to the sixteenth century, Lisbon suffered many urban, economic, scientific and social alterations, as it expanded towards the sea, attracted by the maritime interests vital to its development. The city had already overflowed beyond Fernando's walls, enclosed in an area of 254 acres, more than six times the area enclosed by the moorish walls. In 1415 expansion to Africa began, preceded by the discoveries of Porto Santo, Madeira and the Azores. Lisbon was now a very busy port with about 500 commercial boats.

With the discovery of the sea-routes to India (Vasco da Gama in 1498) and Brazil (Pedro Alvares Cabral in 1500), the centre of power due to trade was effectively transferred from the Venetian empire in the mediterranean to the atlantic coast. The insignificant capital of Portugal had become a world metropolis. King Manuel began to erect his new palace near the river.[8]

All european and Portuguese products went from Lisbon to the orient and vice-versa. The 'New Street of the Merchants' (Rua Nova dos Mercadores) was the most attractive place in Lisbon. It had rich bazaars with spices, silk, ivory, carpets, amber, wood, leather, china, gold, silver, pearls, diamonds and rubies, from Guinea, China, Japan, Persia and India. Foreign bankers opened branches in Portugal, which had become the most commercialized country in europe, with Lisbon's growth as a world emporium.

The importance of the city's low-lying area has been recognised since the time of King João I who had promoted its development. The branch of the Tagus which had flowed there was already dry, and the area was leveled between the hill of S.Francisco and the castle. The conditions thus created between the river and the commercial area of Rossio, allowed the establishment of a regulated network defined by an axis: a main street, between rows of commercial buildings and parallel to the river; two long streets leading to Rossio and then the transverse ones (not perpendicular). Figure 3.3. summarises the four main evolutionary stages; Lisbon in the fifth, tenth, twelve and fifteenth centuries.

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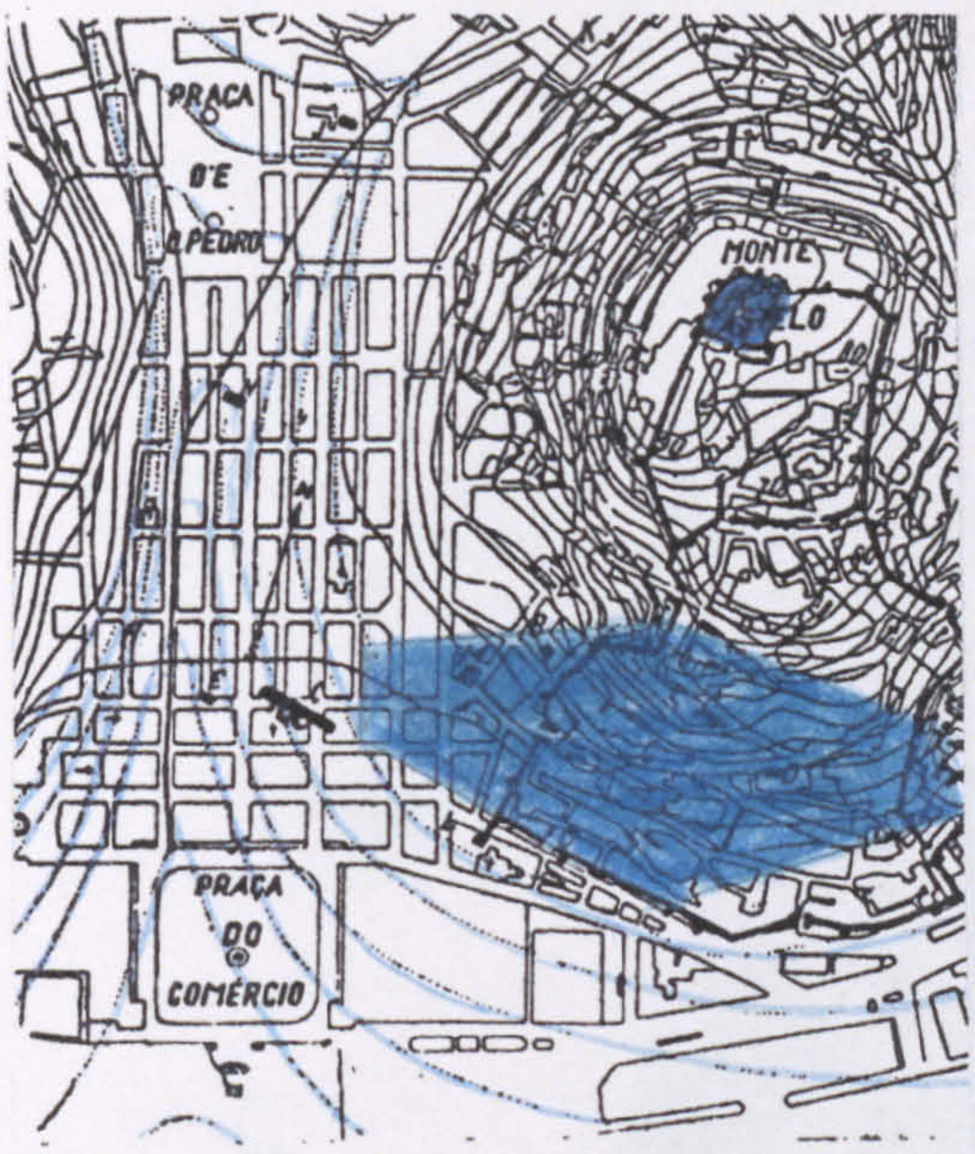
[8] Gaspar Correia illustrates, '...*Every day he came and he went to be in the warehouses, he decided to have ... his lodging in those warehouses; where they became nobles, and under which big houses to collect and manufacture the India and Mina goods*'. Correia, G., Lendas da India - 1510, Lisbon, 1858 - 1866.



Defensive Castle

Populated area

V Cent.

Primitive nucleus

New expansion

Moorish walls

X Cent.

Primitive area

Moorish quarter

XII Cent.

Fernando's walls

New areas

XV Cent.

Figure 3.3 Lisbon's evolution

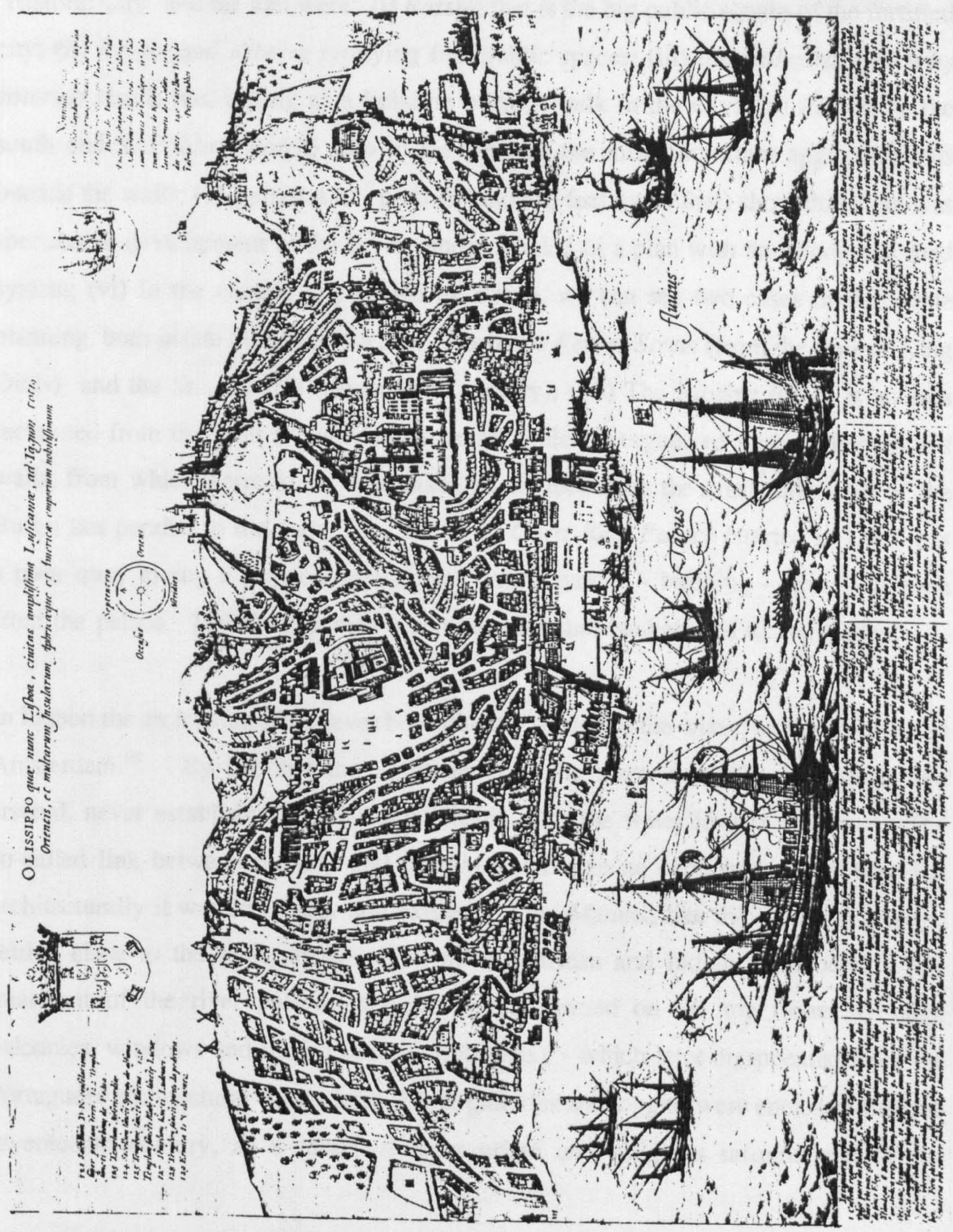


Figure 3.4 Iconographic view of Lisbon in 1572 by George Braun

A sixteenth century description by Damião de Gois[9] is complemented by a plan published in 1572 in the work *'Civitates Orbis Terrarum'*, directed by George Braun, (Colonia, 1572 and 93, see Figure 3.4). It is shown as a big *'fish bladder'* to quote Damião de Gois. The city limits are Fernando's walls, which determine physically the 'Historic City' and the loci were: (i) *Rossio*; that is the big public square of the fortified city; (ii) *Rossio* and *Ribeira* typifying free public spaces; (iii) the *cathedral which by contrast* stands out, arising as a building of huge bulk in the city; (iv) *Ribeira* in the south and *S. Paulo - Bairro Alto* in the west as the most important agglomerations outside the walls; (v) *Bairro Alto* - plots of land (30 feet by 60 feet) show that there was speculative development of the urban land, included in a plan with an orthogonal road system; (vi) In the chaotic city drawn by Braun, we can see two cases of deliberate planning, both inside Fernando's walls: - *Nova dos Ferros Street* (from the time of King Dinis) and the *St. Ana Hill* (seventeenth century); (vii) The *Ribeira Burgo* is an area reclaimed from the river (King Manuel aterro) which is organized through Fernando's walls, from which Terreiro do Paço takes its alignment on the north side. All of the Burgo lies parallel to the water line; and (viii) *Corte Real Palace* (started in 1585) has a river quay giving a physical ambience - river - garden - building - street - as seen from the palace. The river formed a complement, and background to the garden.

In Lisbon the architecture has never been directly related to the water, unlike Venice and Amsterdam.[10] By contrast the buildings near the river, even the boat-yards and arsenal, never established a direct relationship with the water in a fromal way. The so-called link between the city and the river had been an economic connection, but architecturally it was absolutely non-existent. King Manuel, like the Venetian princes, settled close to the river, to the ships, to the African and Indian warehouses. The treatment of the river palaces' facades were crowned on the top floors by large balconies, windows and roofed terraces (mirantes), - which later disappeared from the Portuguese architectural vocabulary. These galleries and loggias were enclosed after the seventeenth century, as a result of strict urban and religious reforms and of the

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[9] In: Urbis Olisiponis Descriptio , 1554.

[10] In Venice we have the progression: - main canal - building - garden - building - main canal; and in Amsterdam - the canal - street = via - building - garden - building -street - canal -.

omnipresent power of the Jesuits. The city and the houses were both based on a group of closed autonomous spaces joined by a complicated pattern of ways largely destroyed by the earthquake and the Pombaline reconstruction. The 'Casa dos Bicos' remains as a memorial of the fifteenth century.

When King Filipe II of Spain became also King of Portugal in 1585, he ordered his architects Juan de Herrera and Filippo Terzi to renovate the royal palaces and above all to dignify the old Royal Paço in Ribeira. Adjoining the King Manuel fort by the Tagus he built the tower traditionally called the Terzi, which characterized the Terreiro do Paço and the Lisbon court until the earthquake of 1755. Its military origin is shown in the ground floor above which were three high floors, and completing the square tower a large lead covered dome. Despite the fact that it was destroyed in 1755, the tower was a long-lasting image as it was replaced in the reconstructed square but in a more symmetrical composition. It was also a model for Mafra Palace-Convent, and was echoed in a neoclassical style in the Ajuda Palace.

Portuguese culture in the second half of the sixteenth century was profoundly influenced by Italian ideals and by the mathematical studies connected with the discoveries. Military architecture was not only a vehicle for the new style but was also the basis of a new way of planning. By the beginning of the second quarter of the century in 1527 a new urbanization begun near the walls in Alto de São Roque. This was planned on a grid, with long streets north-south crossed by west-east ones. It was a private development, and by the end of the century the city had its best example of renaissance planning, with 408 dwellings and one thousand six hundred inhabitants, the Bairro Alto. About the Bairro Alto, P. Baltazar Teles in the seventeenth century wrote: *'This is the district which, if not the most visited, is at least the most praised; the houses are very noble; the work of Roman architecture in a Modern style: it is the highest part of the city, the most disposed to the North; the most washed by the winds, and the most pure air; and as the rain flows to the sea everything stays very clean, and healthy, and free from the troubles(diseases) which other areas in the city suffer from: the streets are very generous and very well laid out'.*[11]

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[11] In: Crónica da Companhia de Jesus da Provincia de Portugal.

Although there are some mistakes in the Tinoco plan, (see Figure 3.5) it is the oldest surviving drawing showing Lisbon in plan. Four structural elements of sixteenth century Lisbon were very clearly established by the two hills, the castle and S. Francisco hill, and the two big open spaces, Rossio and Terreiro do Paço:

1. *The Castle area*, which covers the hill surrounded by the arab walls;

2. *West of the castle hill*, (which Osberno had reported as being the outskirts of the arab city), corresponds more or less to the actual grid of Baixa Pombalina. This forms an important link between the lower part of Fernando's walls, Nova dos Ferros Street, Ribeira Paços and the cathedral area (SE), and still continues to penetrate to the interior of the city up to the junction between the same Nova dos Ferros Street and Rossio. To this street, which penetrates as far as the Ourives do Ouro Street, we can join two others, Ourives da Prata and Nova do Almada streets. Rossio was a place connected with religious activities and a point of contact with the interior of the country;

3. *Ribeira Burgo* which chronologically followed the arrival of city maritime activities was established south of Fernando's walls, and between this wall and the banks of the Tagus. The buildings are parallel with the river and the city walls. Nova dos Ferros Street can be considered as the first sign in the city of seagoing activities, (river road) but located inside the walls. The Ribeira Burgo was the start of the development of an urban area for the new commercial and maritime classes;

4. *Bairro Alto*, a residential area of the first half of the sixteenth century, typifies a period in planning, which resulted from the rise in population in Lisbon, connected with the commercial activity in Ribeira.

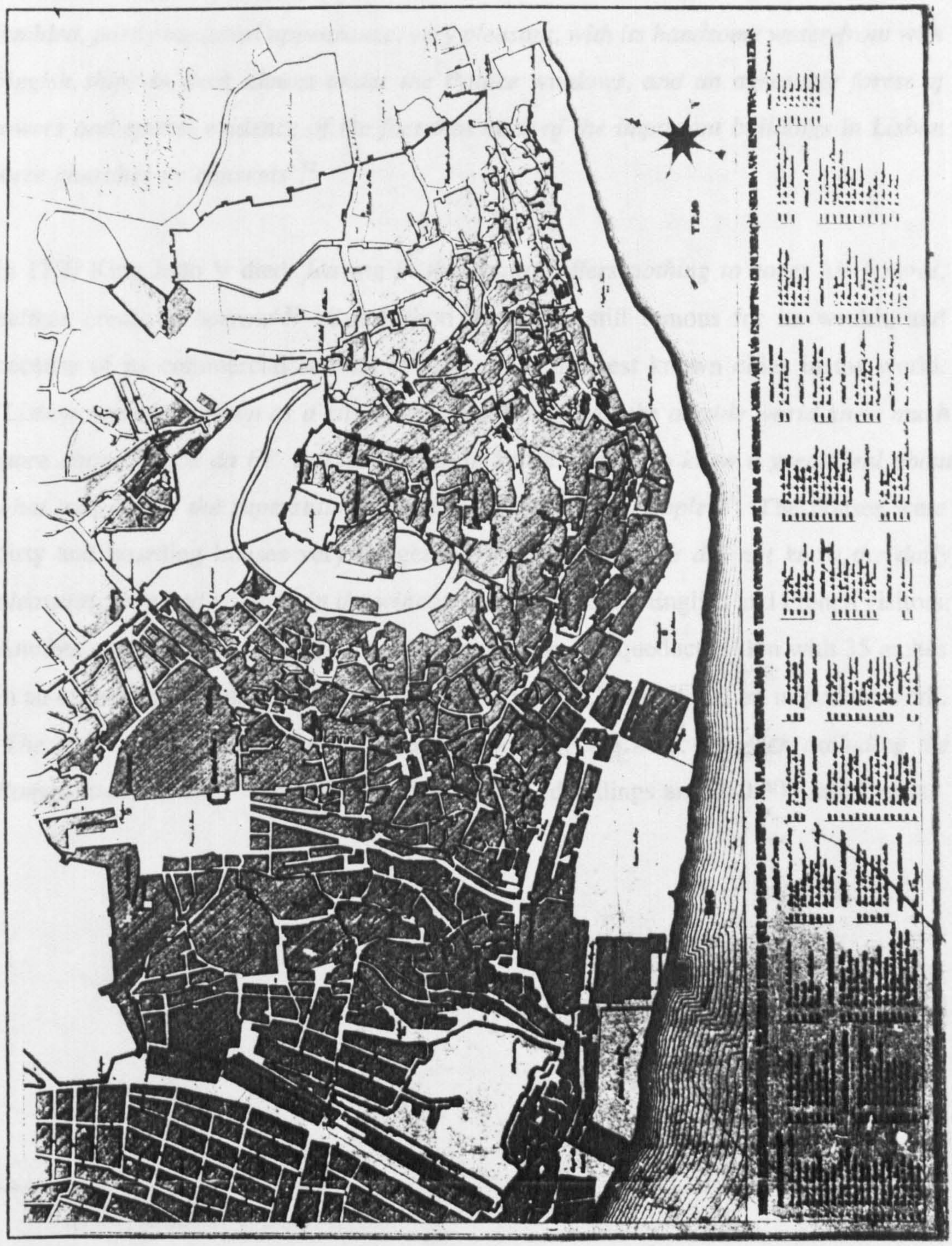

Figure 3.5 Tinoco's plan of Lisbon in 1650

Lisbon *'Was not an easy place to describe to those who have never seen the city, Lisbon is bumpily and abruptly hilly ..., Lisbon was not before the earthquake, a city of great architectural beauty in plan or style, and apart from a large open space by the river flanked by the Royal Palace and Government buildings it must have had a jumbled, partly medieval appearance, very pleasant, with its handsome water-front with biggish ships in dock almost under the Palace windows, and an agreeable forest of towers and spires, evidence of the fact that most of the important buildings in Lisbon were churches or convents'.*[12]

In 1750 King João V died *'leaving in the public coffers nothing to cover his funeral, neither credit to borrow'.*[13] But Lisbon itself was still famous for its wealth, and because of its commercial activity it was one of the best known cities in the world. *'Lisbon was also known as a city of the Inquisition, and the outside world knew much more about 'Autos da Fé' in Lisbon than in Spain; they also knew a great deal about what was called the superstitious idolatry of the Lisbon people'.*[14] The houses were dirty and boarding houses very dangerous. *'The Portuguese did not know the daily pleasures, they had no glass in the windows'*, it was said by English and French visitors. Another construction undertaken in this century was an aqueduct (18km with 35 arches in an extension of 1km in which the highest arch is 65,25m). It was an important work. *'The most magnificent and sumptuous enterprise of this kind, not even excluding the Roman and French'.*[15] The city then held 90.000 dwellings and 360.000 inhabitants.

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[12] op cit., Kendrick, T. D.,1956, p.28.

[13] Balbi, A., Essai Statistique sur le Royamme de Portugal et d'Algarve, Paris, 1822, p.303.

[14] op cit, Kendrick, T. D., 1956, p.29.

[15] Journal Etranger, Paris, 1755.

3.4. Conclusion

Later from the fifteenth to the sixteenth century with the beginning of the maritime enterprises, Lisbon expanded towards the river and sea becoming a busy port. When King Manuel transfered his residence from the castle down to a new palace by the river side, this area became the most attractive place in Lisbon. This was a large open space directly related to colonial expansion and commercial activities. The Rossio and Terreiro do Paço were the two wide open spaces, but the area between them was a labyrinth. The streets were, as today, devoted to commerce, and the Rua Nova or New Street (today S.Julião and Comércio Streets) was, in fact, a public promenade in the sixteenth century. These urban spaces will later become important structural elements in the rational Pombaline plan. Commercial activity and the exploration of new territories through voyages of discovery, had been the preoccupying interests of Lisbon and Portugal for many years. By the eighteenth century Lisbon was still famous as a port, but its economic situation was no longer secure, as the country was dependent upon Brazilian gold for its survival.

The following three figures intend to provide an image of the spaces and buildings referred to above. Figure 3.6 shows the east side of Rossio square before the 1755 earthquake. In the medieval pattern of streets the two main commercial squares and the circulation axes are underlined. Figure 3.7 shows the castle and the cathedral and focuses attention on the religious buildings and land, which were the only spaces with outstanding dimensions in the city apart from the two public squares, the Rossio and Terreiro do Paço. Figure 3.8 presents an image of Terreiro do Paço square and the S. Francisco hill before the earthquake, and the plan showing the main buildings constructed by King Manuel. The Bairro Alto, a new district planned in the fourteenth century that showed an innovative urban composition can be seen on the west side of the plan.

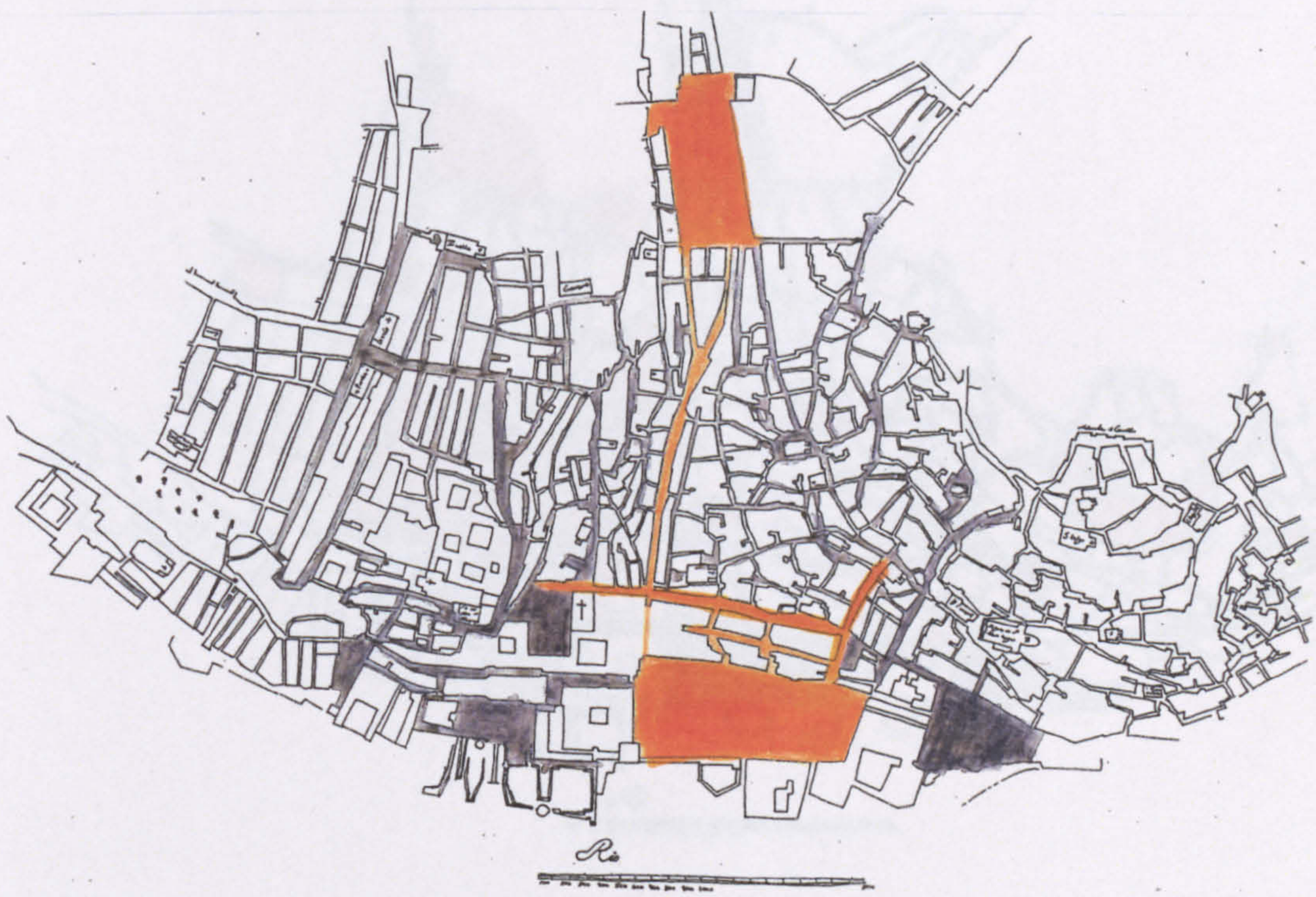
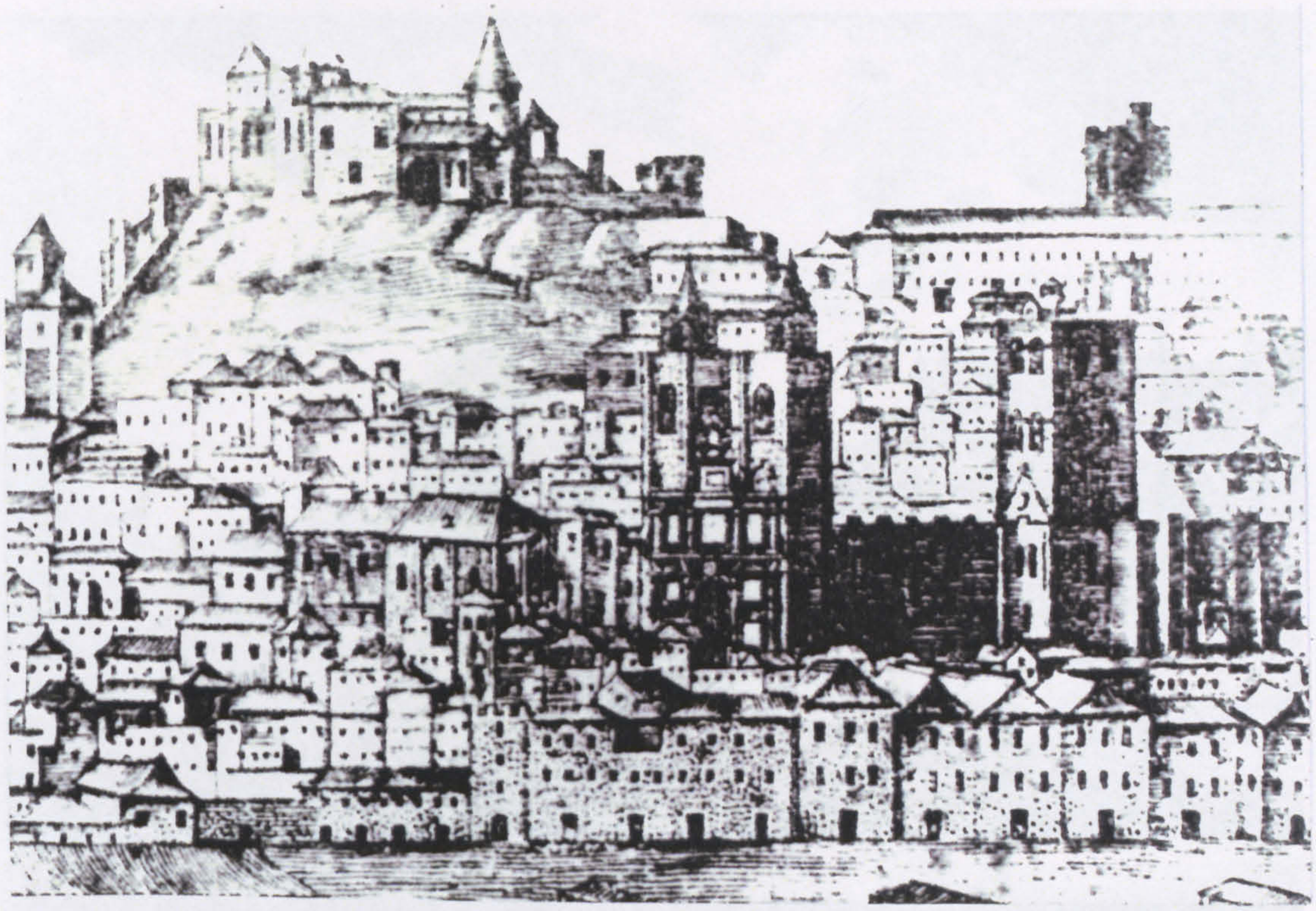


Figure 3.6 Rossio square before the earthquake (anonymous). The medieval city, the commercial squares and the main circulation axes.



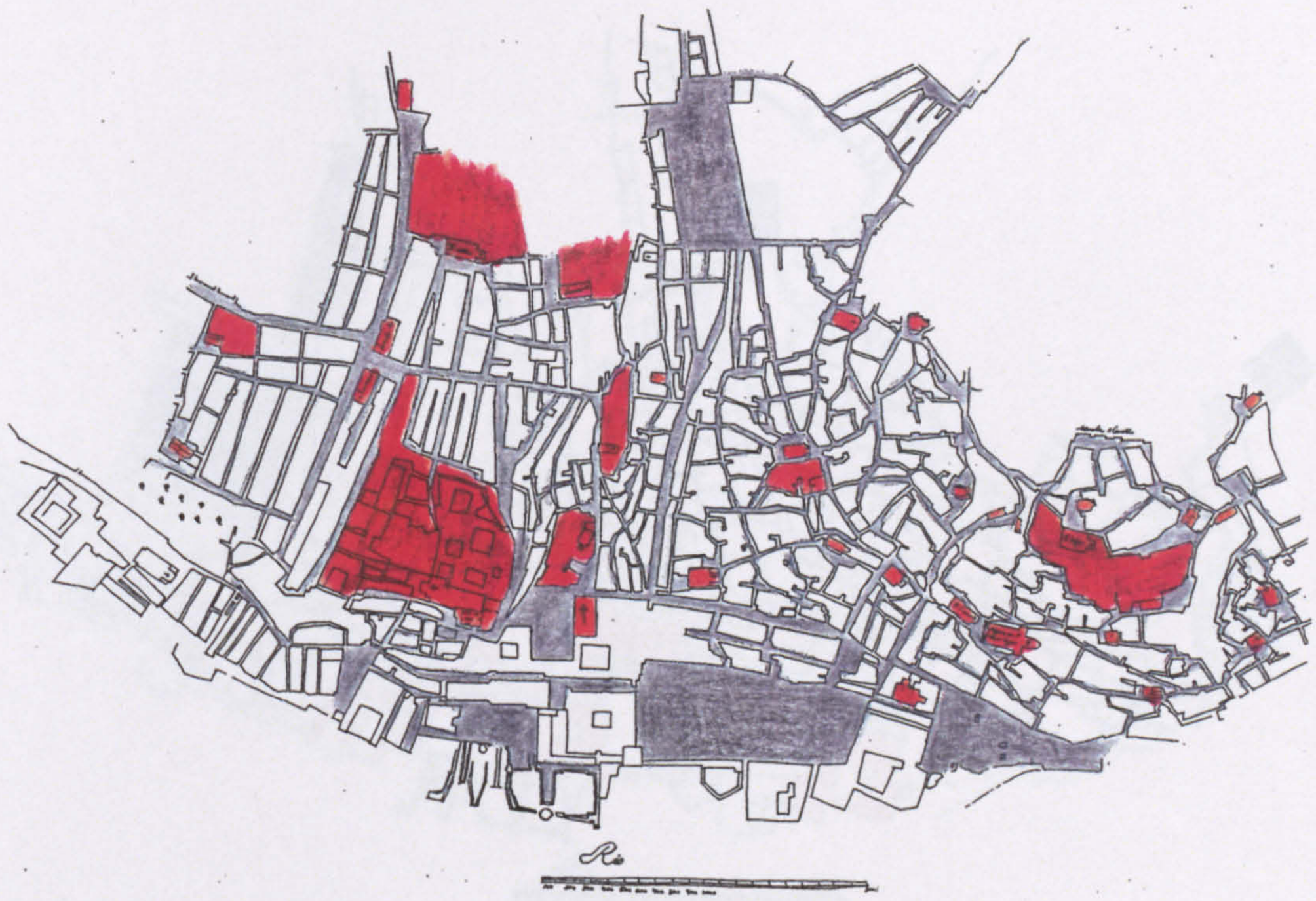
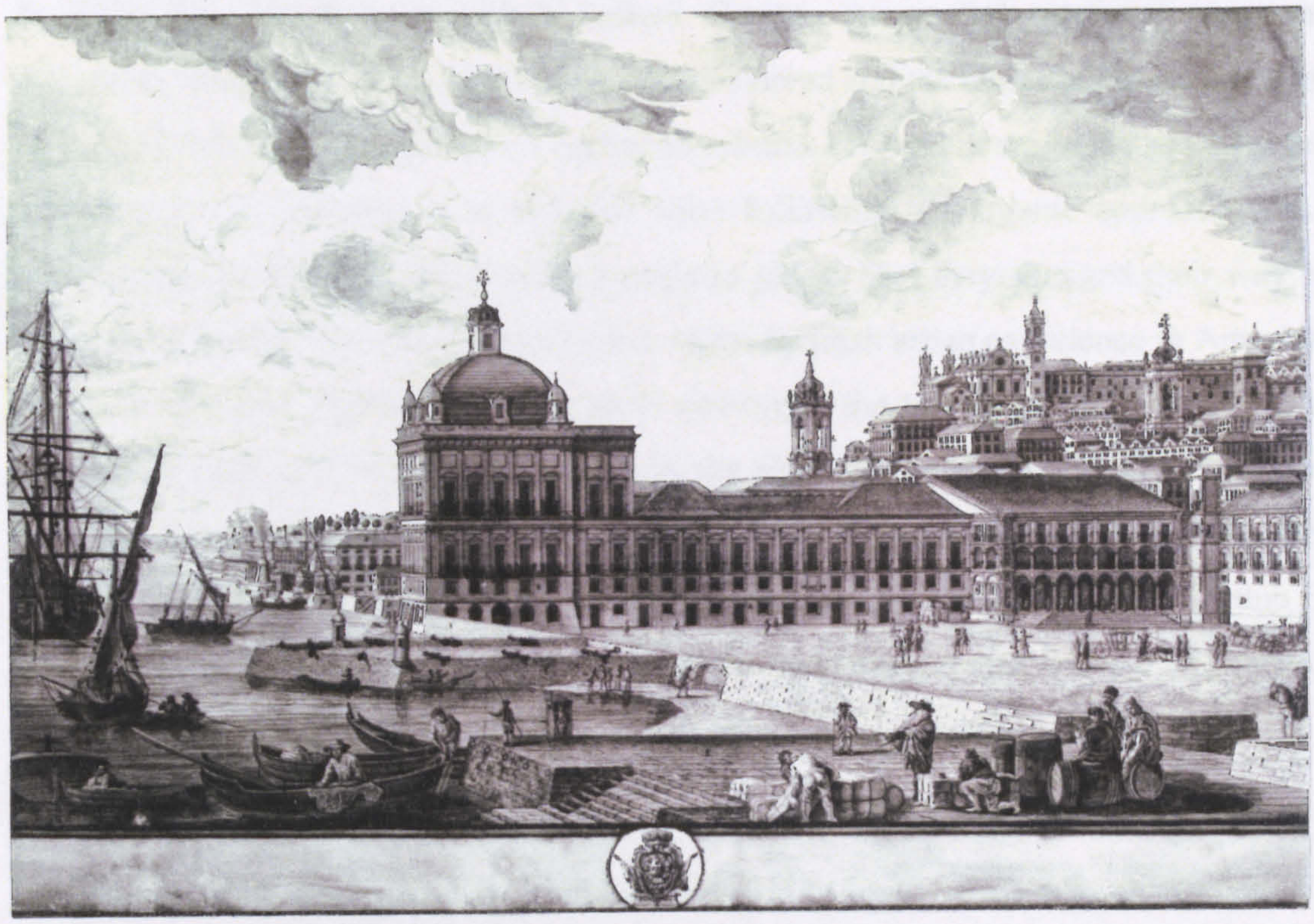


Figure 3.7 Detail of the engraving documenting the Filipe II of Portugal, 1622 by Domingos Vieira Serrão. Medieval plan of Lisbon underlying the religious property.



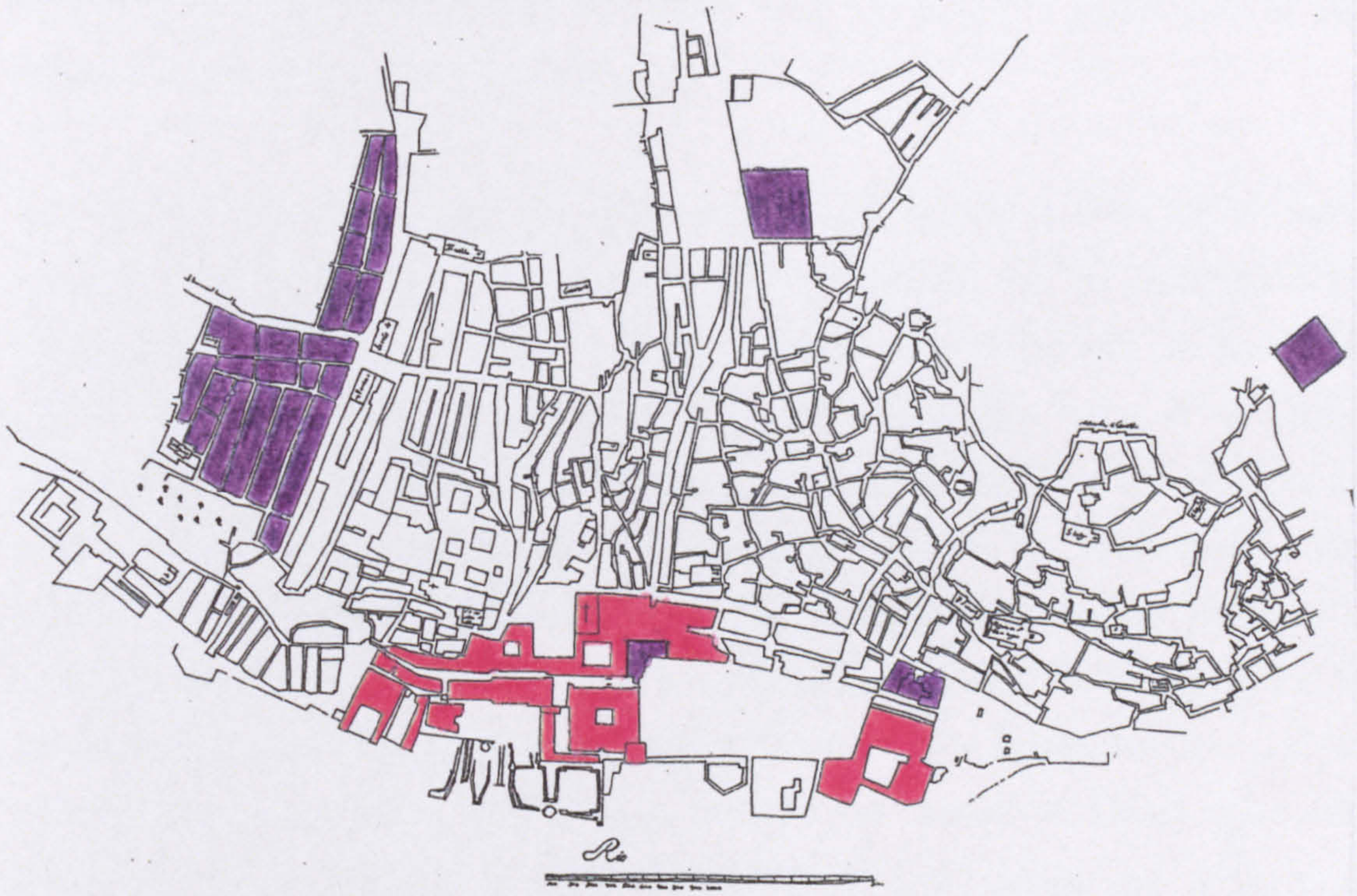


Figure 3.8 Terreiro do Paço square and S. Francisco hill, west side by Zuzarte Fc., 1782. Medieval plan showing the main constructions undertaken during King Manuel's reign.

In 1755 the city went through a radical change, the central medieval area was completely destroyed. Four proposals were considered and the most radical was chosen. A gridiron plan was the preferred option to rebuild Lisbon. One might ask why the Portuguese were building their colonial cities following the organic approach while concurrently rebuilding Lisbon using a gridiron plan? Had they changed their way of thinking about the city? Was the influence of the Spanish urban experience in America, based on the grid system, so strong as to determine the new plan for Lisbon? Was Manuel da Maia and his team influenced by the plans for the reconstruction of London after the fire in 1666, or by the urban improvements taking place at that time in other european cities? Or, was the Pombaline city a unique and exceptional intervention in Portuguese planning history? These are the issues proposed for analysis in the following chapter.

Chapter 4

European and Colonial Influences on the Rebuilding of Lisbon

4.1. Introduction

This chapter examines the contemporary context of the plan for rebuilding Lisbon in the eighteenth century. This is done through an analytical study of selected european cities and Portuguese and Spanish colonial settlements. The reason for this analysis emerges from the necessity of understanding the selection of a gridiron plan to reconstruct a medieval city and ascertain the existence of influences. Due to the fact that the Pombaline plan for Lisbon alone will be presented and studied in the following chapter along with a concluding discussion, the intention here is to give a global view of the precedents and context to the rebuilding plan.

The reasons for these two topics involve several aspects. Manuel da Maia and his team had at the time knowledge of other european developments, (in his dissertation he specifically discusses and comments on the enlargement of Turin and the measures applied in London after the Great Fire in 1666). They also knew of the great interventions undertaken in France, (the places royales). Therefore it is reasonable to think of such influences on the Pombaline plan, specifically in the composition of the squares. However these interventions (with the exception of the great fire) had a different character since they all aimed for urban embellishment. Although a grid is sometimes used as a guiding element, none of them has the characteristics of a plan. Consequently, our attention is directed to the fact that Manuel da Maia's team was formed by an engineer with a great knowledge of fortifications and of colonial settlements, where the grid pattern was largely used.

Specific case studies are presented in terms of factual and interpretative accounts of their evolution in the seventeenth and eighteenth centuries. In doing so it is shown how these

might have influenced the rebuilding of Lisbon in 1755.

The chapter is subdivided into two main parts. In the first we aim to study the context of the Pombaline city. (Section 4.2) We begin by analyzing the glorious French places royales, then we will turn to the plans for the rebuilding of London after the fire in 1666, (Section 4.2.2.). We will study the projects which led to the embellishment of Bath on such a magnificent scale, we shall look at Craig's New Town in Edinburgh and, also to the Turin's extensions, (Section 4.2.3). Finally, we shall try to determine the importance of the Spanish plaza mayor as a common feature in the european cities. In Section 4.2.5, a description of the condition of port cities during the Renaissance and Baroque periods is provided in order to compare Lisbon with cities such as Antwerp, Bruges and Amsterdam, all of which were devoted to maritime trade, and were very different from the great urban developments represented by other european cities.

In the second part, (Section 4.3) the principal objective is to carry out a comparative analysis of Spanish and Portuguese approaches to the colonial city in order to aid our understanding of the reconstruction of Lisbon in the eighteenth century. The Portuguese left their built heritage throughout the world - including cities which are now part of the World Heritage List, such as Bahia, Olinda, Ouro Preto and Goa. (Section 4.3.1) These are marked by an important degree of cultural symbiosis not found in their Spanish counterparts. The reason for this can be explained by the medieval legacy of the organic system of planning (Section 4.3.2). Portuguese colonial cities were based on this approach, which was far less rigid than the gridiron, the alternative chosen by the Spanish. (Section 4.3.4) Lastly, the town of Vila Real de Santo António built in the south of Portugal under a grid plan is analyzed in Section 4.3.4.

4.2. The Concept of the City in Pombaline Times

In order to understand the concept of the city in Pombaline times it is useful to compare works of the late sixteenth century, that is the early Baroque, with those of the seventeenth century. This is because from the fifteenth century onwards, architectural design, aesthetic theory, and the principles of city planning were directed by identical ideas, foremost among them the desire for discipline and order, in contrast to the relative

irregularity and dispersion of Gothic space.

There are several features to be studied in Renaissance urban planning: - the fortification system, the way the cities developed, the redesign of sectors by the construction of new main streets, normally initiating further growth, the planning and building of new districts, usually residential, and the layout of some new towns. The planner used the gridiron as the most widespread system for residential districts when new additions to existing areas were required. It was also used for the planning of new towns and continued to be the best pattern to combine with the primary street system.

The conceptual ideal of the early modern city was that of order, with a focus on the dominant elements, in great contrast to the outlines of the medieval nuclei, which were the result of many centuries of slow and irregular growth. From the fifteenth century onwards, planners found spatial manipulation to be an absolute necessity and from the end of the fifteenth century, a geometric form was normally the basis of urban design. Palaces and public buildings dominated open areas in long perspectives. The Champs Elysées was created in the 1660s in order to give the king a processional route to travel along from the Louvre to his summer palaces and hunting fields. During the late Renaissance, under the supervision of the Papacy major improvements were made to urban conditions in Rome. Between 1503 and 1513, Pope Julius II planned two straight streets on either side of the Tiber: the Via Lungara and the Via Giulia. Leo X (1513-1521) laid out Strada Leonina (Via Ripetta) which is the eastern street radiating from Piazza del Popolo. Later Paul III (1534-1549) completed the scheme with Via Babuino, the third axis being the Via Lata (today the Corso) which was already in existence as the ancient northern entry into Rome. Pope Pius IV (1559-1565) also had plans for a rather empty area in the southeast, the Strada Pia (now Via del Quirinale and the Via XX Settembre). The Franciscan Pope Sixtus V has been considered to be the first of the modern town planners because he was able to carry out a master plan balancing religious and secular functions and point the way for future developments. *'He left medieval Rome untouched and concentrated his energy, from the very first, upon new adventures'*.[1] His first aim was to link all the seven main churches and holy

[1] Giedion, S., Space, Time and Architecture, Geoffrey Lumbercege, Oxford University Press, 1954, p. 77.

shrines of Rome: San Pietro in Vaticano; San Giovanni in Laterano; Santa Maria Maggiore; San Paolo Fuori le Mura; (and two more later),- Santa Croce in Gerusalemme and San Sebastiano - which were visited as an essential part of a pilgrimage.

Along with the road system Sixtus improved sanitary conditions in the city, and bestowed upon Rome an urban plan which enabled many important works to be carried out in later years, such as the impressive Piazza del Popolo designed in its present-day form in 1816-20 by the Italian architect Giuseppe Valadier.[2] In Venice, the medieval market was developed gradually to form the Piazza di San Marco and the Piazzetta linking the Grand Canal, the Doge's Palace and the basilica of San Marco in a spectacular space.

Throughout Europe, the enlargement of streets, the construction of residential squares such as the Place Royale in Paris, and the building of the great domes of the new St. Peter's in Rome, the Sorbonne and Val-de-Grace in Paris and St. Paul's in London were undertaken. Enormous changes took place within the city boundaries as in Vienna, Geneva and Antwerp. New towns were built, such as Palma Nova in 1593, Coewarden in 1597 and Philippeville in 1555, where Italian, Dutch and French engineers had an opportunity to put into practice Renaissance geometric theories. Versailles, from the 1660s the great symbol of power,(and far from finished at the end of Louis XIV's reign in 1715) leads one to conclude that the city was the king's most distinguished platform.[3]

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[2] 'The stimulative power of the fan motif of the Piazza del Popolo becomes evident through its many repetitions and variants from Vaux-le-Vicomte and Versailles to Christopher Wren's plan for London. As to corresponding developments of the eighteenth century such as the square in Aranjuez, the basic scheme of Karlsruhe, the Friedrichstadt in Berlin, the Place de l'Odéon in Paris, and elements of L'Enfant's plan for Washington, D.C., it would be difficult to decide whether the original idea of the Piazza del Popolo in Rome or its further glorification in Versailles was the stronger influence'. Zuker, P., Town and Square, from the Agora to the Village Green, Columbia University press, New York & London, 1959, p. 149.

[3] Morris, A. E. J., The History of urban Form; Before the Industrial Revolutions, Georege Godwin Limited, London, 1979.

4.2.1. France and the Places Royales

Looking first at France, we see that Paris as the capital was still very rural in character and that open spaces were rare, while those that existed belonged to private owners. During the period between the reign of Francis I (who took up residence in Paris in 1528) and the end of the eighteenth century, not much was done to re-structure the medieval area. With the exception of the creation of the Champs Elysées, and the laying out of the first of the grand boulevards by Louis XIV, little was done to develop the future city. The work done in the city was carried out in isolated areas, on the undeveloped spaces around the city, or consisted of grafts on to the existing fabric. Nevertheless this activity produced some fascinating works.[4]

In Paris the main projects were begun in the seventeenth century. They resulted in the enlargement of the walls of Charles V on the Right Bank, in order to include the new western suburbs as far as the Tuileries Gardens, and the reorganization of the street system with the opening of squares, geometric in design, surrounded by uniform houses and centred on a statue of the sovereign. The Place Royale, Place Dauphine, Place de la France (never executed) and the enlargement of the Palais du Louvre were also included in the plans of that time (see Figure 4.1). Louis XIV, the Sun King (1661-1715), was the major figure responsible for the new architectural projects, such as the Place des Victoires, Place Vendôme and the Palais des Invalides. At the same time the old fortifications were dismantled and replaced by the tree-lined 'Boulevards'. Paris became an open city, over-spilling its 1,200 hectares with a population of approximately 500.000. The court moved from the Louvre to Versailles, which gradually became the second capital of France. Versailles covered an area almost equal to Paris. It is, in fact, in Versailles that we find the ideal city of the seventeenth century: the palace forming the centre of two extensive spaces, defined by radiating perspectives.

The Place Dauphine was designed as an unusual wedge-shaped space with an important difference from the squares that were to follow during the Baroque period. The statue of the king is located outside the enclosed space. It is on its central axis, but stands

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[4] Benevolo, L., The History of the City, Scholar Press, London, 1980.

outside in a small area by the Pont Neuf, but directly related to the square. The king is facing the place, and not the city. The square was designed to provide accommodation for bankers and merchants. It was built in the old space of the Palais-Garden and shows a unified design with shops on the ground floor, probably inspired by the Piazza at Livorno. In the Rue Dauphine (dating from the beginning of the seventeenth century) the inhabitants were obliged to 'build in the same similar way, the facades of their houses'.[5]

In contrast to the Place Dauphine, the Place Royale (today called the Place des Vosges), which was inaugurated in 1611, had no commercial activities. It was a square for spectacle and habitation, and can be considered as the prototype of the residential square. The square was formed by 38 houses, designed with uniform elevations. The houses were provided with an arcade on the ground floor and two upper floors with slate-covered roofs containing dormer windows.

The idea of promoting such developments was to attract the aristocracy to form a background for the monarchy. As in the other 'Places Royales' the statue of the king was present, here on horseback (1639). Another square, the Place Vendôme, this one designed by Mansart between 1685 and 1699, and named Place Louis XIV in honour of the king, exhibited in its centre an immense equestrian statue. The square is basically a rectangle with its corners cut off, creating an octagonal effect. The buildings have three storeys with an additional row of dormer windows and a uniform roof. The total height had to be lower than the fifty-four foot high statue. The centres of the two long sides and the four corners of the square have pediments and columns, but the statue no longer exists; it was replaced by the Colonne d'Austerlitz in 1810 erected by Napoleon.[6]

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[5] Lavedan, P., French Architecture, Penguin Books, Harmondsworth, Middlesex, 1956, p.239.

[6] ibid., 1979.

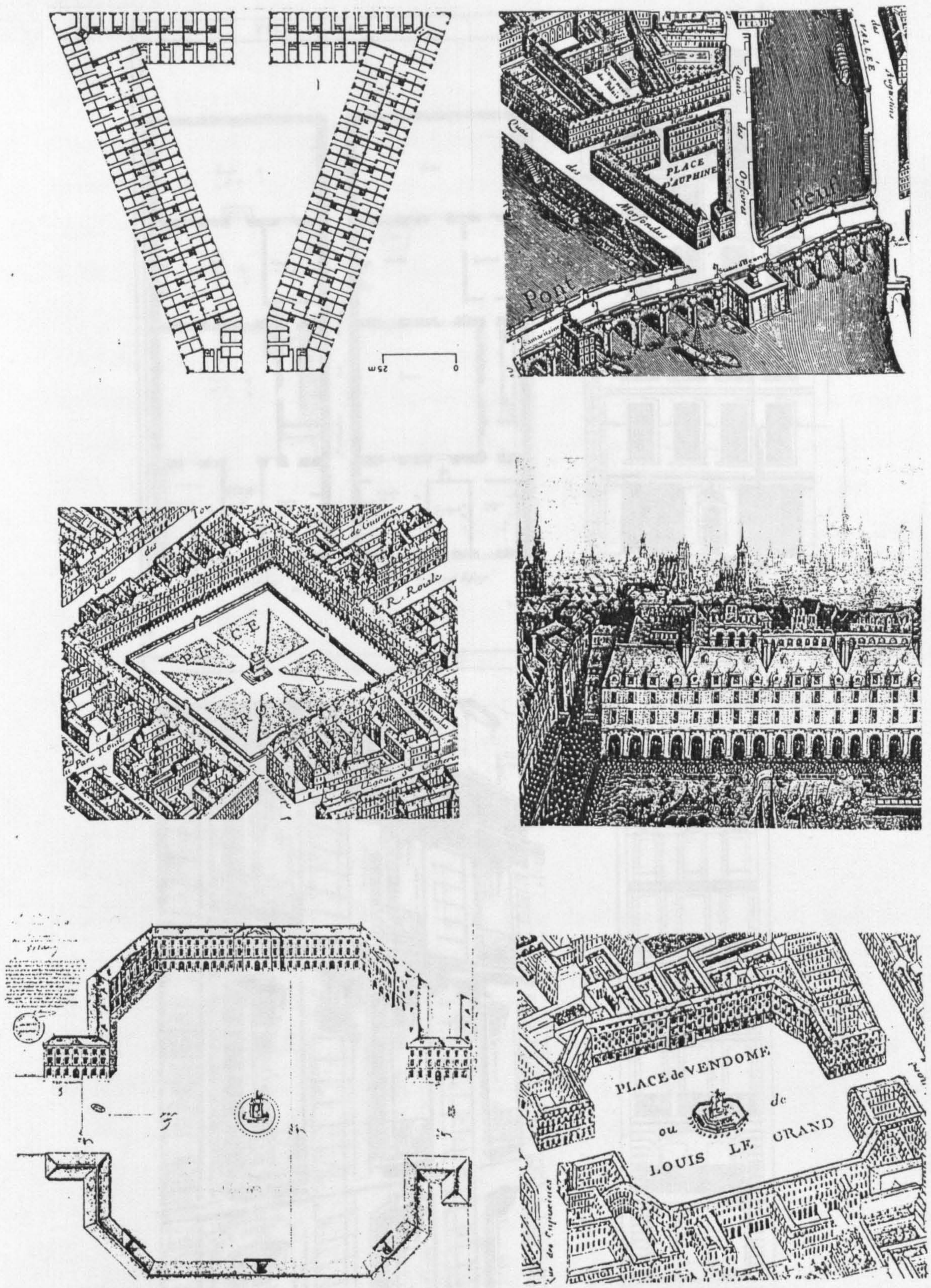

Figure 4.1 Place Dauphine and the Pont Neuf from Turgot plan (1734-39); Place Royale (1611) and Place Vendôme (1685 -1699)

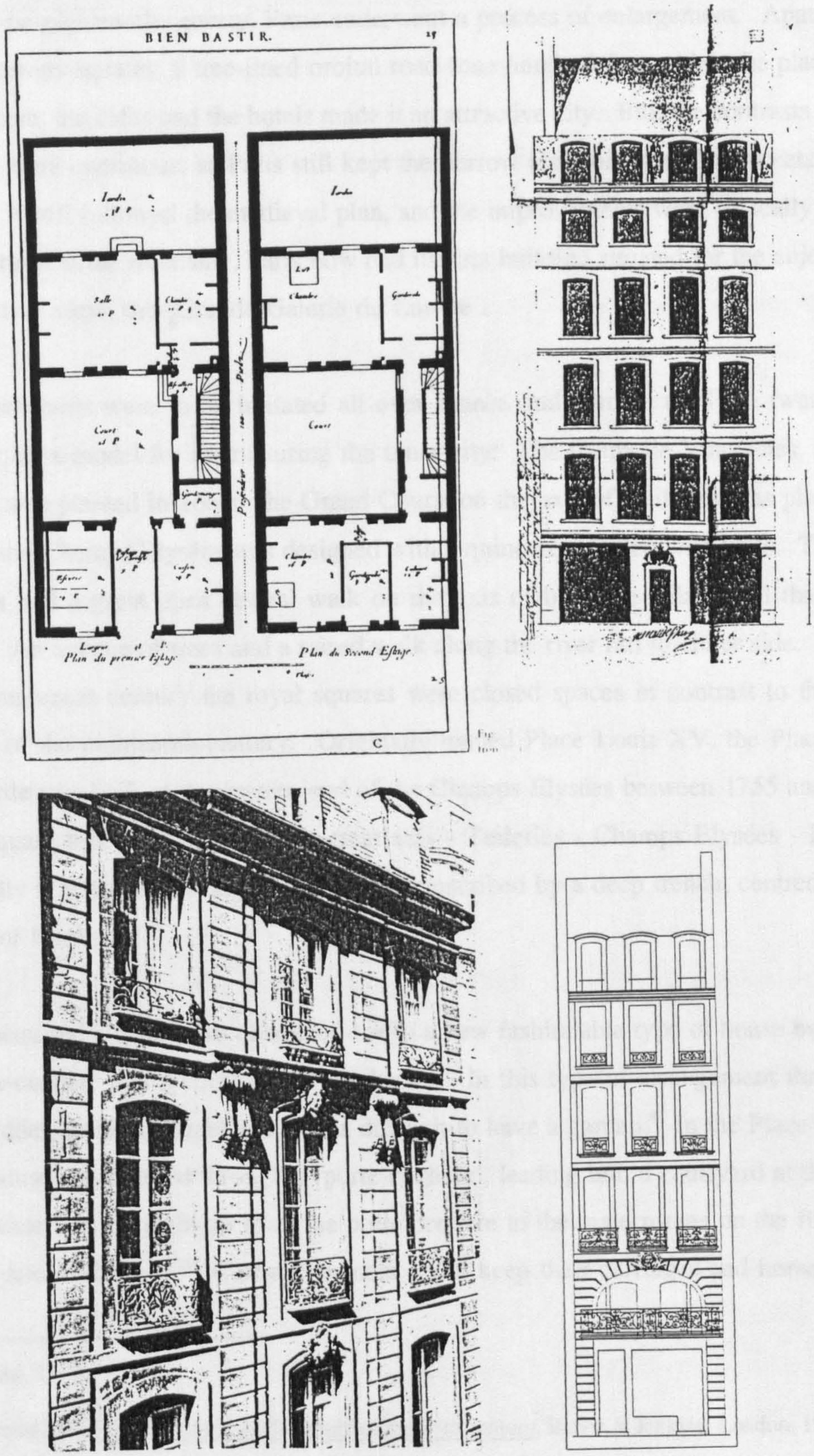

Figure 4.2 The apartment building in Paris

During the eighteenth century, Paris underwent a process of enlargement. Apart from the numerous squares, a tree-lined orbital road (one hundred feet wide), the places for amusement, the cafes and the hotels made it an attractive city. But, the contrasts within the city were enormous, as Paris still kept the narrow and noisy, treeless streets in the centre. It still followed the medieval plan, and the improvements were basically on the periphery. On the river side, Paris now had its first building situated for the enjoyment of the river view, the 'Grande Galerie du Louvre'.

The boulevards were to be imitated all over France and europe, until the twentieth - century, as a model for restructuring the inner city: The Cours de Vincennes, a triple avenue was planted in 1660; the Grand Cours, on the axis of Tuileries was planted in 1670; the Champs Elysées was designed with a quincunx planted with trees. The new gardens had a great open central walk on the axis of both the Palace and the Grand Cours. An avenue of trees and a raised walk along the river ran to either side. During the seventeenth century the royal squares were closed spaces in contrast to the open spaces of the eighteenth-century. Originally named Place Louis XV, the Place de la Concorde was built at the eastern end of the Champs Elysées between 1755 and 1775. This square belongs to Le Nôtre's great axis - Tuileries - Champs Elysées - Infinity. Basically it comprises a large platform circumscribed by a deep trench, centred on the statue of Louis XV.[7]

Paris acquired a distinctive character due to a new fashionable type of house built with a porte-cochère and a courtyard at the back.[8] In this type of arrangement the facade was hidden from the street and it was difficult to have a garden.[9] In the Place Royale, each house was entered through a 'porte-cochère', leading into a courtyard at the back: a staircase went straight up from the porte-cochère to the main rooms on the first floor of the house above it.[10] Carriage owners could keep their carriages and horses in the

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[7] ibid, 1979.

[8] Gallet, M., Paris Domestic Architecture of the 18th century, Barrie & Jenkins, London, 1972, p.64.

[9] By comparison in London since the early seventeenth century the houses were directly open to the street and had a back garden.

[10] Olsen, D.J., The City as a Work of Art; London, Paris, Viena, Yale University Press, New Haven and London, 1986.

courtyards of their houses. The first floor was reserved for the owner or principal tenant, who took the whole house on lease and sublet the other storeys. As one ascended in the building, the ceilings and the rents were lower, thus allowing in this way different social classes to live in the same block of apartments.[11] (see Figure 4.2)

In Paris the desire was to live in a one-floor apartment among others, whereas in London and in England generally, the ideal house was the single family house, however small. The apartment building had existed in Paris as well as in Venice and Vienna since the seventeenth and eighteenth centuries. Even in buildings not built as apartment blocks (for example, houses in the Place Vendôme the owners of the house occupied only the main floor and let out the rest.

Equally important to the Paris places royales, are those at Nancy and Bordeaux. At Nancy the Place Royale, (today the Place Stanislas 1752-) designed by Emmanuel Héré de Corny for the Duke of Lorraine, father-in-law of Louis XV, was a splendid project consisting of a succession of three spaces: the Place Stanislas, the long Place de la Carriére and the Hemicycle in front of the Palais du Gouvernement. (see Figure 4.3) The idea was to make a connection between the medieval part of the city (the Ducal Palace) and the large Renaissance extension.

The Place Stanislas was a rectangle of 100mX120m, the exact size of the squares in Bordeaux and Rennes. The principles adopted by Héré were: a) not to separate the new square from the old city, b) that there should be no conflicts in style with the total complex (he kept as a model l'hôtel de Craon). Héré set up the boundary and added the hemicycle, a rectangle with semi- circular colonnades at both ends. Thus we have a Place Royale, a long Avant-Cour and a Cour d'Honneur, and in the middle a Triumphal Arch (8m in height).[12] The spatial composition is a juxtaposition of directions, contractions and extensions, but the dominant element is a longitudinal axis. The Place Stanislas, with its rounded corners formed by rich open work grilles in gilded wrought-iron work, has a continuity of space, yet with variations in height of the

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[11] Today the situation is generally inverted if one considers that the best light, air and view can be gained from the upper floors and the climbing problem no longer exists.

[12] op cit, Lavedan, P., 1979.

surrounding buildings. This aids the transition to the Place de la Carrière, a regular, longitudinal promenade, whereas the hemicycle is unified by a continuous colonnade which surrounds the ground floor of the Palace. The 'Palais du Governement' which faces the Place Royale is a building that already existed at the time when the plan was drawn up. Today the Palais accommodates two large private houses, the Customs Office and the Academy of Music. The Place de la Carière was the parade ground and the site of noblemen's houses. Near the Place Royale were the new law courts and a 'bourse'.

Broadbent [13] examines this square in detail and mentioned that *'the backs of the Place Stanislas are even more irregular than anything in the Piazza for, like the Woods in Bath, Héré built merely facades behind which others then built as they pleased'*. This concept was also applied to the Baixa Pombalina facades and in many colonial cities in South America. It seems that the exterior facade was treated as a scenario embellishing the urban life.

The Place Royale at Bordeaux, now Place de la Bourse, was designed by Gabriel the Elder in 1729, and completed by his son Jacques-Ange Gabriel in 1743.(see Figure 4.3) Its shape is that of a rectangle (100mX120m) surrounded on three sides by buildings and on one by a balustrade; all four corners are cut away, as in the Place Vendôme. In the corners two enormous fountains were planned. The two lateral sides are occupied by the Hôtel de la Bourse and the Hôtel des Fermes. All the other buildings were for private use, but, as in the other squares, with an imposed design of unified facades. The connection with the old city was established by two streets, one old, Rue Saint-Rémy, and a new one, Rue Royale, which was framed by small pavilions, imitating the design of the other facades. The square also had an equestrian statue of Louis XV, replaced in 1869 by a fountain.[14]

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[13] Broadbent, G. Emerging Concepts in Urban Space Design, Van Nostrand Reinhold, Hong Kong, 1990, p.57.

[14] op cit, Lavedan, P., 1979.

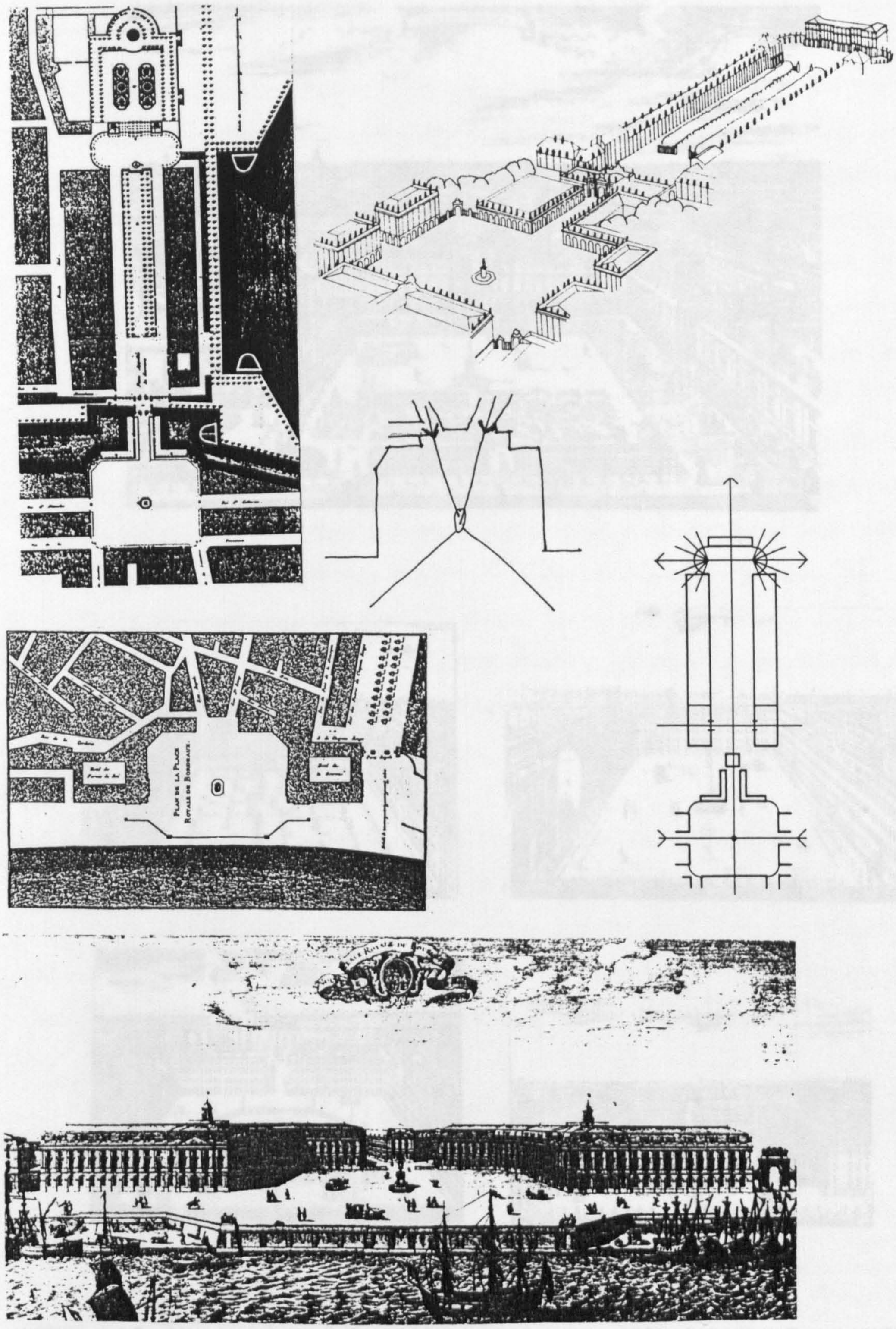
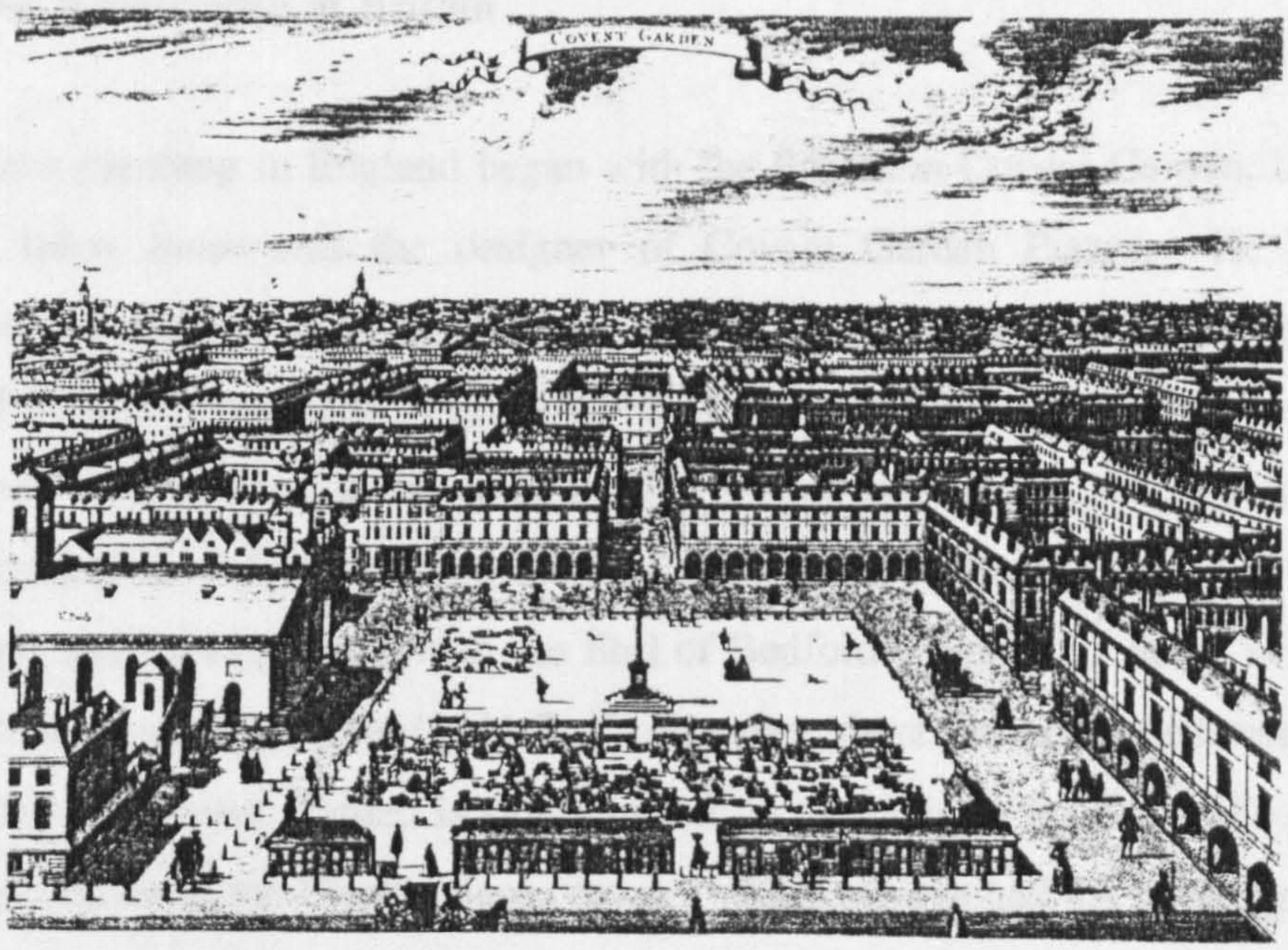
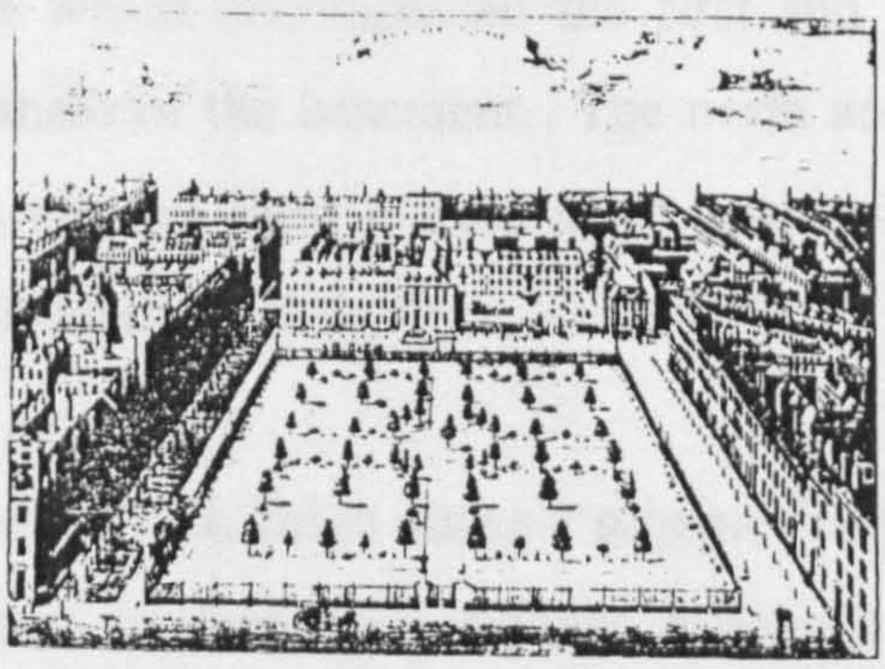
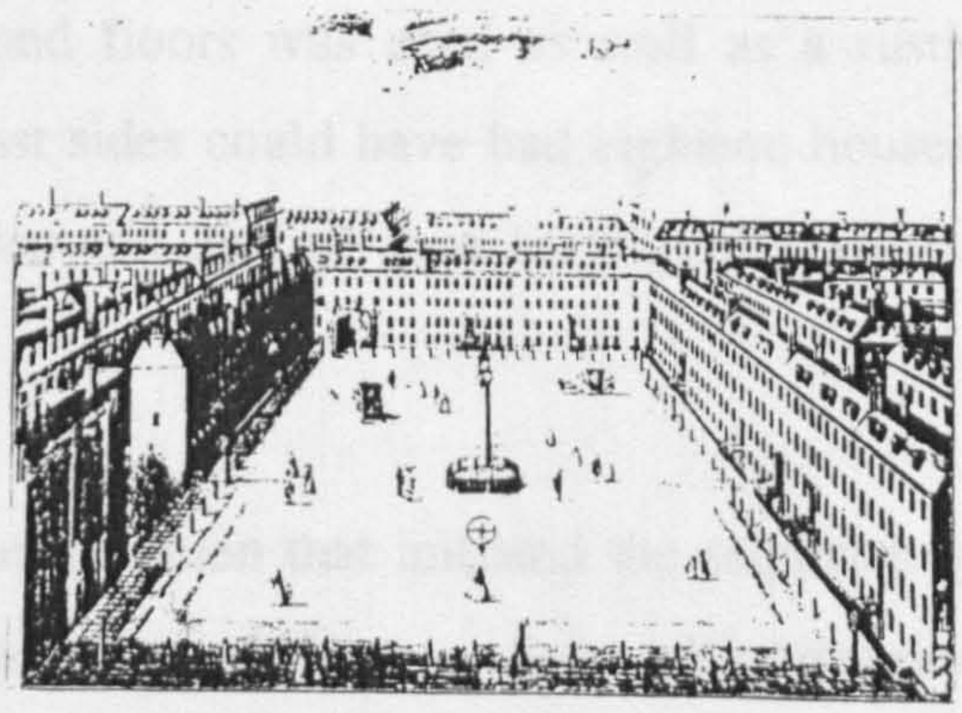


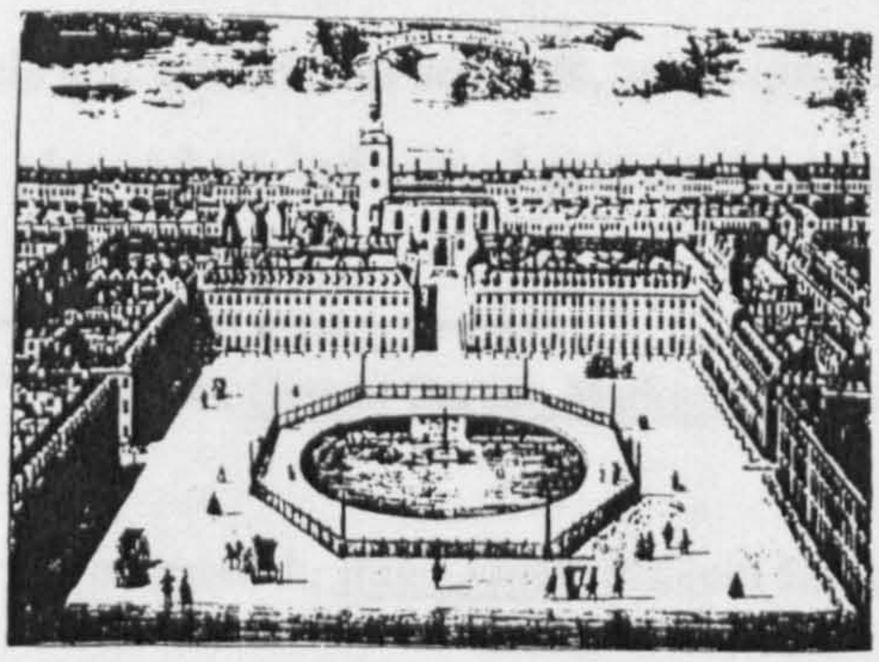
Figure 4.3 Place de la Carrière and Place Stanislas (1752-).

Figure 4.4 Place Royale at Bordeaux (1729-1743).









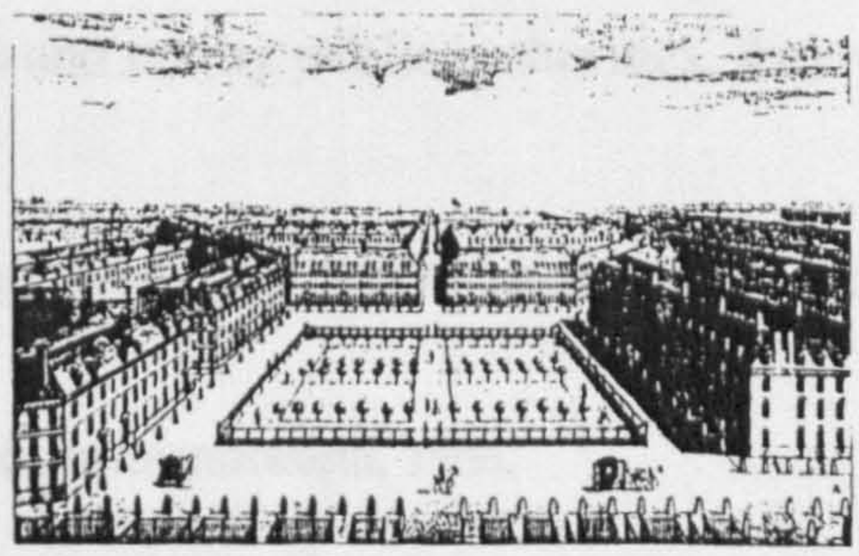


Figure 4.5 View of Covent Garden by Inigo Jones in 1631; Leicester Square (1721); Lincoln's Inn Fields (1731); St. James Square (1755) by Sutton Nicholls; and Red Lion Square (1727) by J. Harris

4.2.2. The Renaissance in Britain

Renaissance planning in England began with the Piazza in Covent Garden, London in 1630.[15] Inigo Jones was the designer of Covent Garden Piazza. He has been considered as the first English classical architect and forerunner of the eighteenth-century Palladian movement. Figure 4.5 shows that the square included new houses built around a large rectangular square (135x170m), and on one side a church. The design was perhaps influenced by the Piazza of Leghorn, a place Jones would have seen on his first visit to Italy and which the Earl of Bedford would have heard of, and also by the Place Royale in Paris (1631-7).[16] However there are some differences. The composition of Covent Garden is subordinated on one axis to the St. Paul's church in complete contrast to the French places royales which always had the sovereign's statue as the focal point. The house interiors could be planned as individual leaseholders wished, so long as the fronts were uniform.[17] In the uniform terrace houses a classical order which encompassed the first and second floors was used as well as a rustic treatment of the basement. The north and east sides could have had eighteen houses, each entered from a front door in the arcades and leading to a back garden with a coach-house and stable.

It was in fact, Inigo Jones's scheme for Covent Garden that initiated the sequence of squares in London. Others followed: Red Lion, Leicester, Soho, Bloomsbury, Grosvenor, and St. James's Squares.[18] By the mid-eighteenth century central London had eleven residential squares, and eight of them had enclosed gardens. Although they were planned by individual private developers and not by public authorities, they were,

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[15] Thorne, R., Covent Garden Market, its History and Restoration, The Architectural press, London, 1980.

[16] Summerson, J., Inigo Jones, Penguin Books Ltd., harmondsworth, 1966.

[17] Another group of four large houses designed in a regular classical facade, for the developing of Arundel Estate, Lothbury in 1638 (related with Covent Garden but without arcades) was probably the first scheme of this kind. Arcades were rarely repeated in Britain, although Carr of York's Crescent at Buxton (c.1780) is a good exception.

[18] Shops were sometimes allowed on the less important streets but never on the squares nor, to begin with at any rate, on the streets leading into them. Gutkind, E.A., Urban Development in: Western Europe, The Netherlands and Great Britain, Collier-Macmillan Limited, volume VI, London, 1971, p.259.

in the seventeenth and eighteenth centuries of great significance in town planning. The private developers created isolated islands of residential units for the upper and middle classes, often in suburban open fields, without any relation to other areas. There were seldom any connecting axes, or vistas planned from one to another or into the neighbouring quarters, but they had an urban character that was maintained in later buildings that filled the open spaces between them.

When, in 1666, a great fire destroyed most of the western district of London (433 acres, four-fifths of the city in all),[19] there arose the opportunity and the freedom to plan according to contemporary ideas.[20] John Evelyn and Christopher Wren chose the architecture that was comparable to the Baroque used in Italy and France instead of the Medieval traditional. We know that at least six plans were drawn up although none of them was executed. The city was rebuilt along the lines of the old one, with few modifications.

The two most important projects were conceived by Wren[21] and John Evelyn. (see Figure 4.6) Wren's plan required the rebuilding of parish churches on new sites (a fact that for many was very disturbing, as the parishes were the people's best traditional reference). Wren was very careful in making the new streets link up to the old wherever buildings were undamaged. Wren's plan has been criticized for not providing for the future growth of the city for neglecting the riverside area with its shipping and warehousing business, and for creating a city for commerce and for the rich. Yet the most controversial issue in his plan is the lack of right angles and disregard of contours. All the streets cross at every angle, except the right angle.[22] Another negative aspect

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[19] After the fire the surveyors reported 13,200 houses destroyed. Bell, W.G., The Great Fire of London in 1666, John Lane, London, 1920, p.282.

[20] Up to then London was a typical medieval city, having no central market square, but instead a main street, Cheapside.

[21] Christopher Wren was Professor of Astronomy at Oxford. His designs for the reconstruction of London's Old St. Paul's Cathedral were approved six days before the fire.

[22] op cit, Rasmussen, S.E., 1960, p.105, believes that Wren as a mathematician started from certain definite postulates to solve a geometrical problem. Wren did open up the city with long vistas but he did not introduce in his plan an important element in town planning which is the square. His squares are a result of the street junctions and not designed as intrinsic elements of the composition.

of Wren's plan was that *'not one street nor one building was kept in its old place. And even if all the houses were burned down yet something far more immovable than stone and wood existed, namely the sites with their boundaries. Each of the citizens could exactly point out where his house had been and how far his site went. Its value was not only determined by its size but also by its situation'.*[23] This plan could only be possible if the property was united into one and afterwards parcelled out to the hundreds of proprietors.

Evelyn's plan, on the contrary, was based on an integrated system of star squares, cut by extended axes. His plan is based on a chessboard system in which he introduced four diagonals connecting the main entrances to the town and establishing quick communications. The resulting blocks were too large and the intersection of streets not very well done, a fact which made him present three improved versions of the plan, introducing a more realistic scale and more closely connected to the plans of the old London. The influence of the sixteenth and seventeenth century Italian theoreticians is obvious (i.e. Piazza del Popolo), as well as the gardens of Vaux-le-Vicomte and Versailles.[24]

The grid was the system chosen for the other submitted plans. The chequerboard design was interrupted by some squares, but there is a lack of stimulating elements in these plans; the buildings simply made a grid, without commanding vistas of importance. John Evelyn insists on uniformity for the squares and streets of his own plan for London. The plan of Captain Valentine Knight, an army officer, divided the whole town into long narrow blocks, which could be easily parcelled into plots. This scheme was in contrast to those of Wren and Evelyn, who gave prime importance to the street pattern. Captain Knight planned a grid of main streets 60 feet wide, which is subdivided by secondary streets only 30 feet wide, parallel to the river, thus producing blocks of around 500 feet by 70, just enough space for two rows of houses separated by a narrow yard.

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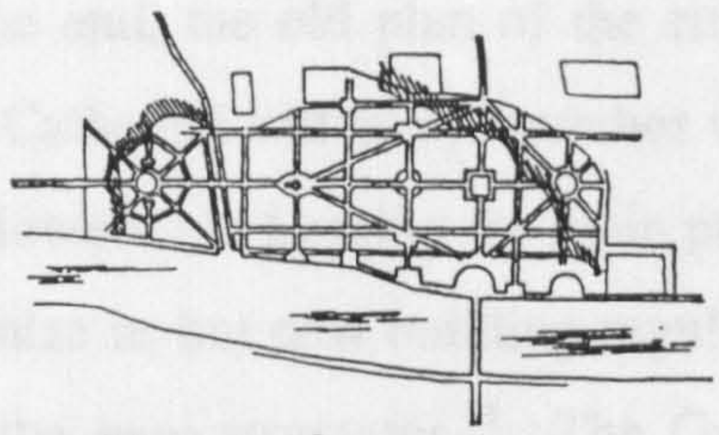
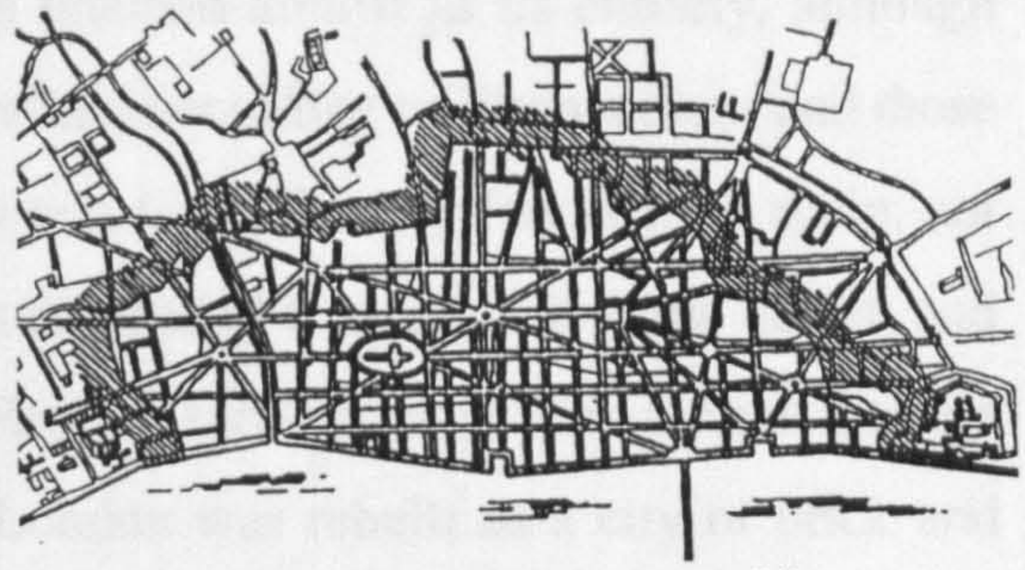
[23] ibid., p.105.

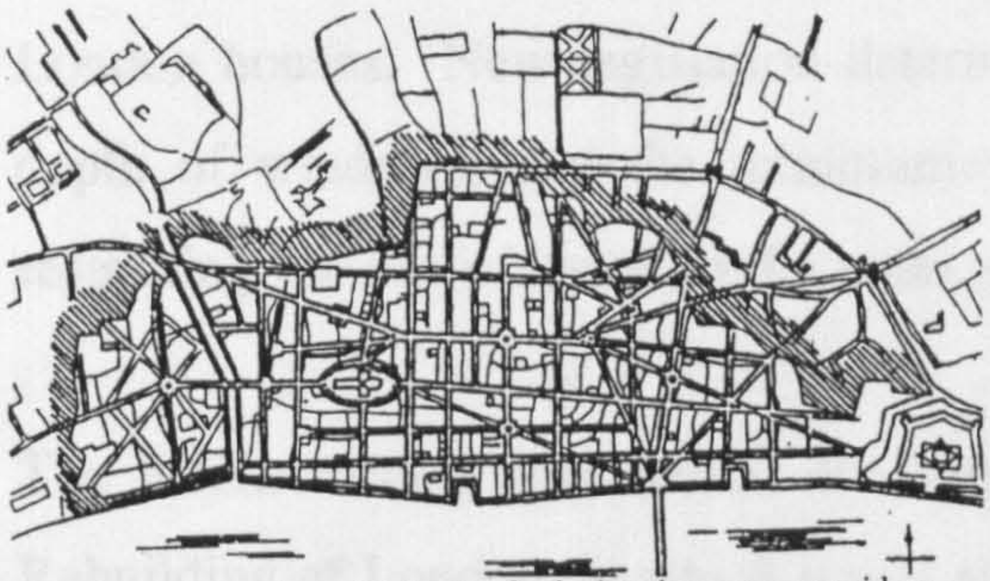
[24] John Evelyn was a typical wealthy well educated nobleman...on his journeys in Holland, Belgium, France, and Italy, he had the opportunity to see much more contemporary architecture than Wren. op. cit., Rasmussen, S.E., 1961, p.99.



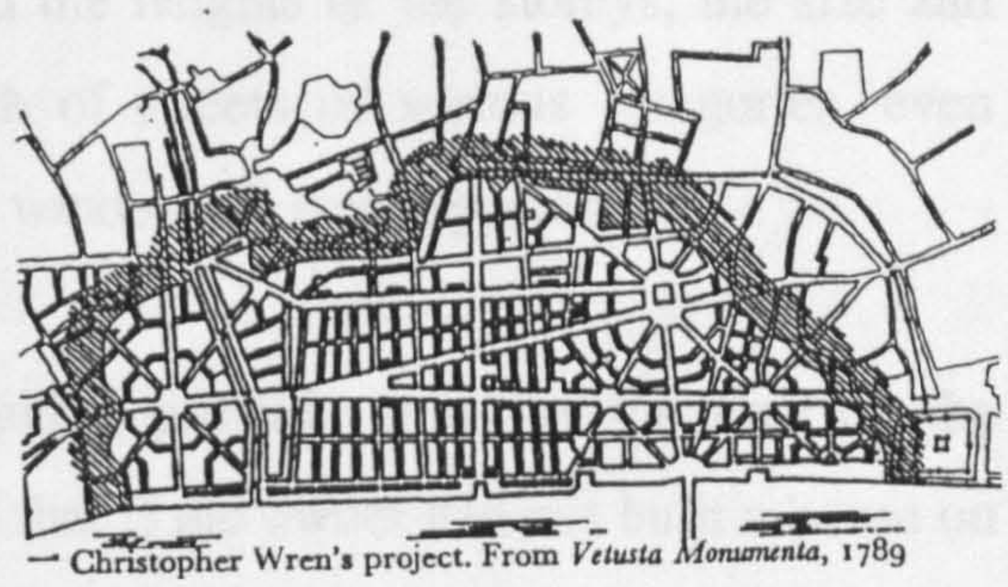
John Evelyn's first plan for re-building



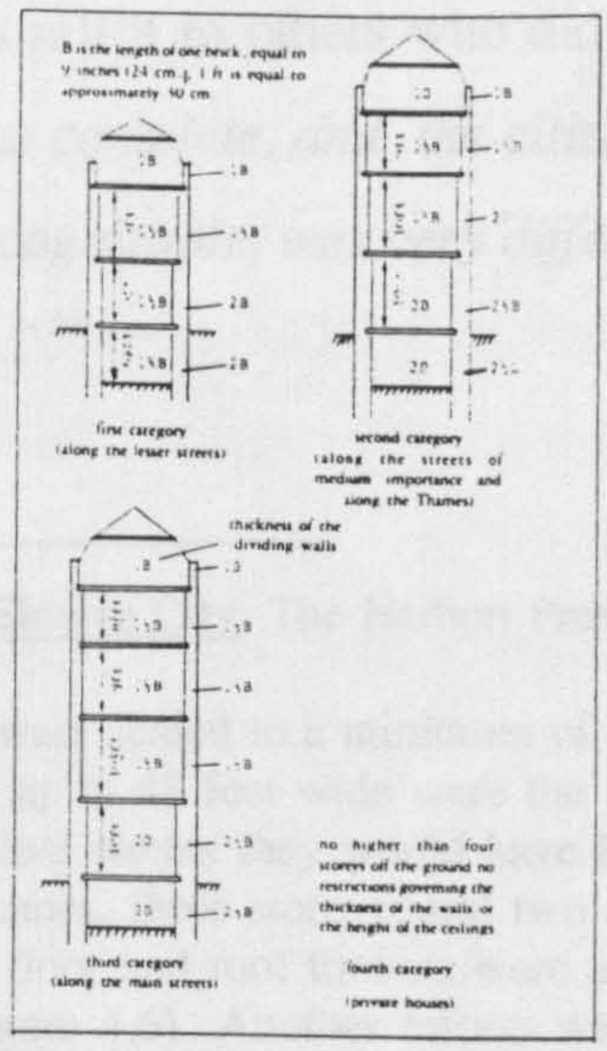
John Evelyn's third plan for re-building

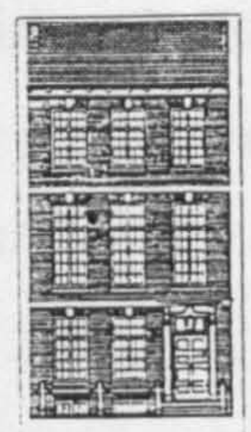


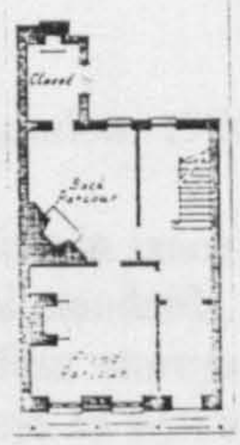
A subsequent project of John Evelyn's showing more consideration for earlier conditions. From *Vetusta Monumenta*, 1789

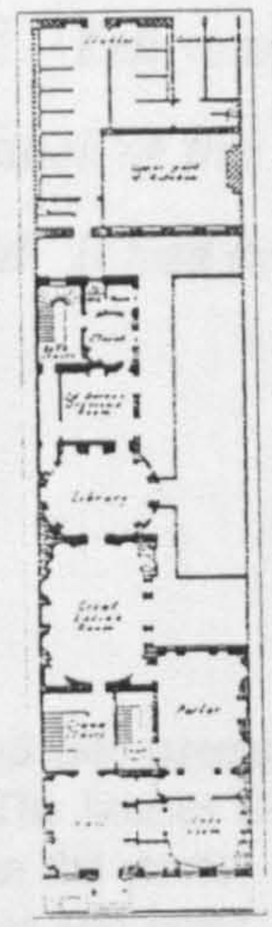


Christopher Wren's project. From *Vetusta Monumenta*, 1789









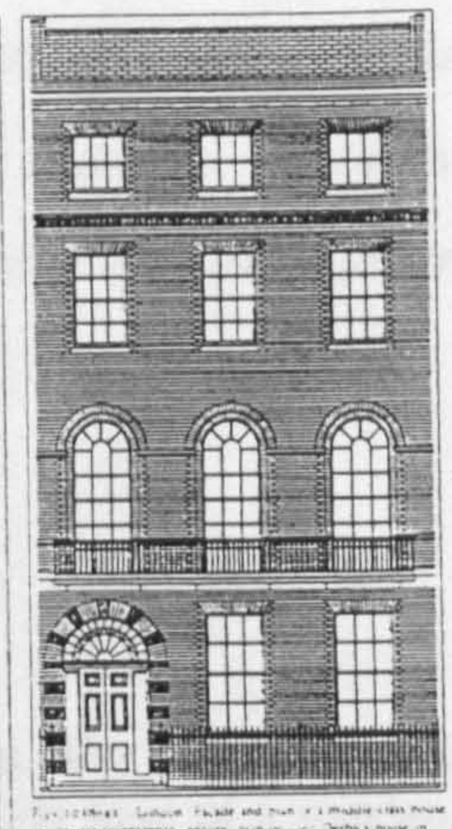


Figure 4.6 Plans for the reconstruction of London; the regulations governing the reconstruction of houses as laid down by the law of 1667; London facades in the late seventeenth and eighteenth centuries.

Yet, in the end, the old plan of the city was retained almost in its entirety, although St.Paul's Cathedral and many churches were rebuilt according to Wren's plans and those of his followers. In London the main priority was to get the city functioning again, not to reorganize it; but new building regulations controlled to some extent the design and form of the new structures.[25] The Great Fire of 1666 showed that timber was no longer a suitable urban building material. London was rebuilt as a city of brick and stone instead of timber. Between 1670 and 1774 successive Acts of Parliament laid down progressively tighter standards for construction, especially for the facades of London houses. New legislation determined the heights of the storeys, the size and depth of windows, and the minimum width of streets of various categories, even restricting the use of wood in the making of windows.[26] (see Appendix 2)

The reconstruction was carried out very rapidly, possibly aided by the Law on the Rebuilding of London, in which it was stated that if the owner had not built a house on his site within three years of the fire, the land would become the property of the town, which would pay full compensation according to the valuation made, and which then had the right to sell it to others who did wish to build.[27] *'Ten years after the fire the secular work was complete, and the citizens could take stock of the changes. The new city, if not unrecognizable, was very different from the old. It had been restored rather than replanned...'*.[28]

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[25] Barnett, J., Elusive City, The Herbert Press, London, 1986.

[26] Street sizes were scaled to a minimum of 14 feet in lanes and side streets. For the chief traffic routes, 20, 30 and up to 45 feet wide were the usual standards. The houses also were of a standard type: in the principal streets they would have had four storeys; in the streets and lanes of note and along the river Thames, three storeys; and two storeys in by-streets and lanes. The thickness of the walls and sizes of floor and roof timbers were all controlled, and the materials to be used were brick and stone. (see Figure 4.6) Another reform was the party-wall legislation, which required common boundary walls to be set out equally on both sites, with the first owner erecting the entire wall and the second paying half the cost, plus 6% interest for the intervening period.

[27] 'In the Spring of 1668 Samuel Rolle estimated that there were eight hundred houses rebuilt in the flame-swept area; some thought more'. 'In the Spring and Summer of 1669 the number of new houses under scaffolding was about 1600, a somewhat larger proportion than in the previous year. This rate of construction was continuous until the Autumn of the year 1670'. op cit, Bell, W.G., 1920, p. 275 and p.276 respectively.

[28] Reddaway, T. F., The Rebuilding of London after the Great Fire, Edward Arnold & Co., London, 1951, p. 284.

The principal modifications experienced by London after the fire were in the layout, structure and appearance of individual buildings and plots. Today this kind of policy would be accepted as natural, but in seventeenth-century London it was an innovation. The wood-framed and thatched houses, with projecting upper storeys, were replaced by brick buildings, without projections and provided with rainwater pipes. A strict line defining the extension of the buildings into the street was imposed and paved streets introduced. The buildings were also improved with daylight and ventilation in all rooms fronting the street.

In the late seventeenth century, mainly as a result of the great fire, London was rebuilt in brick or stone by the emerging entrepreneurial building industry (and subsequent loss of status by individual craftsmen). Architects were following the same ideas of simplicity and repetition. The taste for the design of individual homes within one unique facade, resembling a palace front, for the avenues and for the grid system of planning, were basic eighteenth century principles. (see Figure 4.7)

After 1715 Palladian designs served as inspirational models for georgian London. Andrea Palladio's Quattro Libri dell'Architettura, translated and published in English in 1715, became a much quoted reference.[29] The important features of his work were order, proportion and ancient antecedents, all of which were attractive to architects' inspiration, builders' initiative and society's taste.[30]

The facades incorporated a proportional grid, based on the principles used by Italian renaissance architects for the drawing of classical columns and the entablatures of temple fronts. A facade's proportions were based on the Italian tradition of the *'piano nobile'* and the concept of *'invisible'* applied orders.[31] However in the 1720's, with the establishment of Palladian taste, the *piano nobile* became one of the key elements of the

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[29] Although Palladio's interpretations based on Roman remains (and not Greek) were not accurate, they were good enough for the early eighteenth century Englishman. Cruickshank, D. and Wyld P., 1975, p.33.

[30] Besides Palladio others, such as Vignola, inspired Georgian London.

[31] It was also important that the arches above the windows were made of brick, a construction system that became general in this century.

Georgian facade. The facade was designed in relation to the size of the rooms (following the principle of relating the interior and exterior of the building). In reality the eighteenth century terraced houses were built with a timber-frame structure hiding behind a dressed brick facade thus showing that the interior-exterior relationship was not so strong.

In London during the eighteenth century it became fashionable to build rows of houses all alike as joint building enterprises.[32] The new quarters were also planned with regular buildings interrupted by open squares, octagons and circuses. Two of these enterprises are the Adelphi near the Thames (1768) and the Bedford Estate (1775-1780). Another in Bath created Queen Square. (see Figure 4.7)

The English house in 1780 was influenced by industrial principles. *'Each building is not an individual work of art, but a refined industrial product selection during repeated serial construction'*.[33] It is thought that these houses were not designed by an architect, but by an enterprising master-mason, in co-operation with a carpenter. The buildings differ in depth and breadth, however the outlines of the plans are the same. (see Figure 4.7) They show a clever and economic use of the narrow plot. The three windows of the first floor give light to a large room which occupies the whole breadth of the building; behind this there is a top-lit staircase leading to a drawing-room nine or ten yards deep.

Two other cities in Britain, Bath and Edinburgh have projects for their enlargement and embellishment from the eighteenth century. They are the product of good architects and excellent city planners. Eighteenth-century Bath is the image of a society at the height of its privileged position as the ruling class of England.

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[32] Only Grosvenor Square (begun in 1695 and completed in the eighteenth century) and possibly St.James square (1684) were effectively executed by uniform structure. op cit., Zucker, P.,1956.

[33] op cit, Rasmussen, S.E., 1991, p.224.

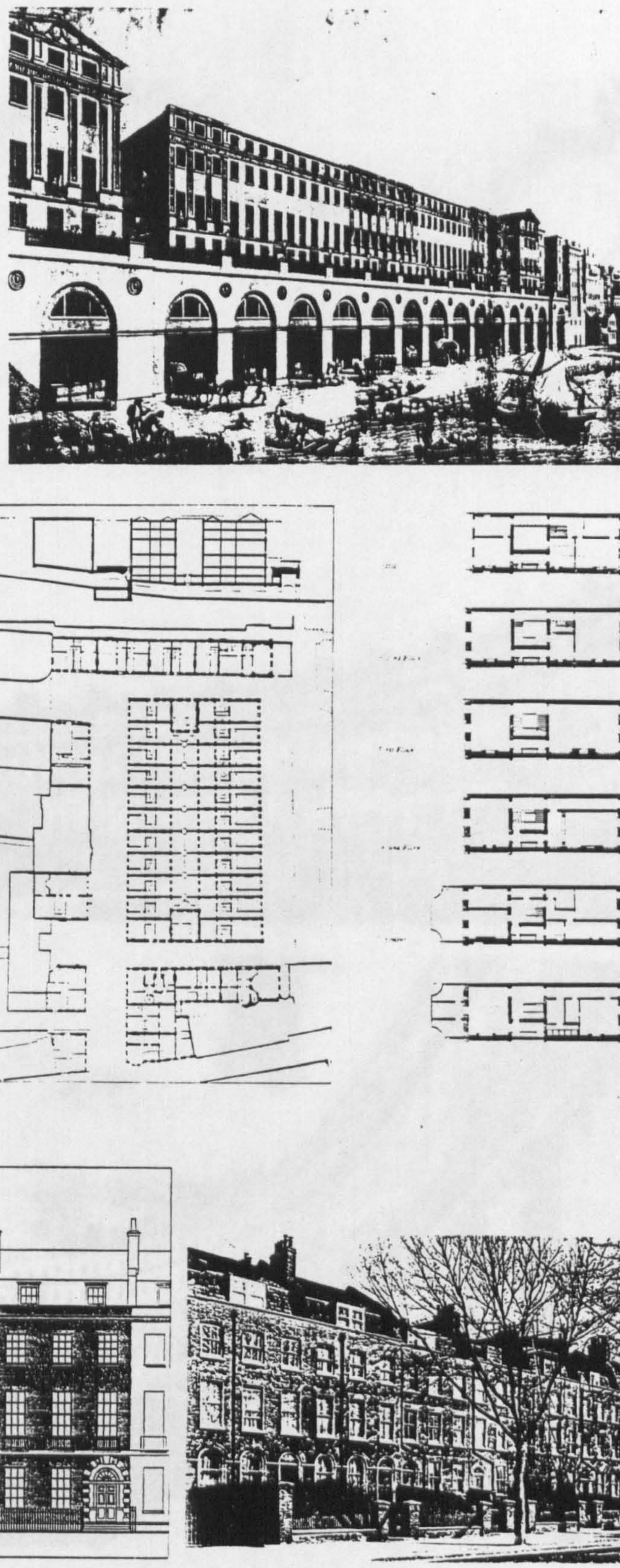

Figure 4.7 Adelphi enterprise; Frontage of typical house in Bredford Square, by Niels Rohwerder

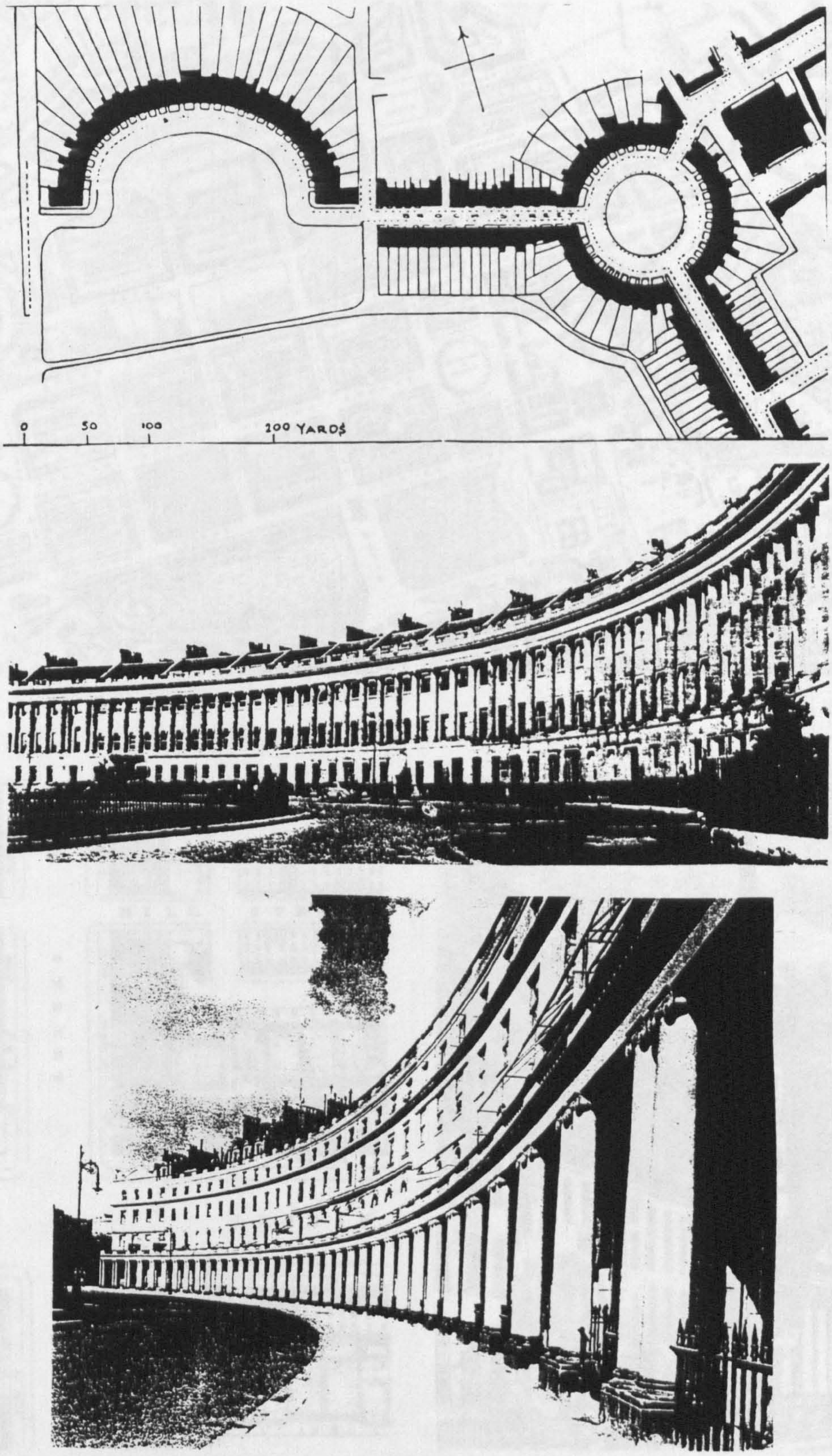

Figure 4.8 Bath: The Circus and the Royal Crescent.

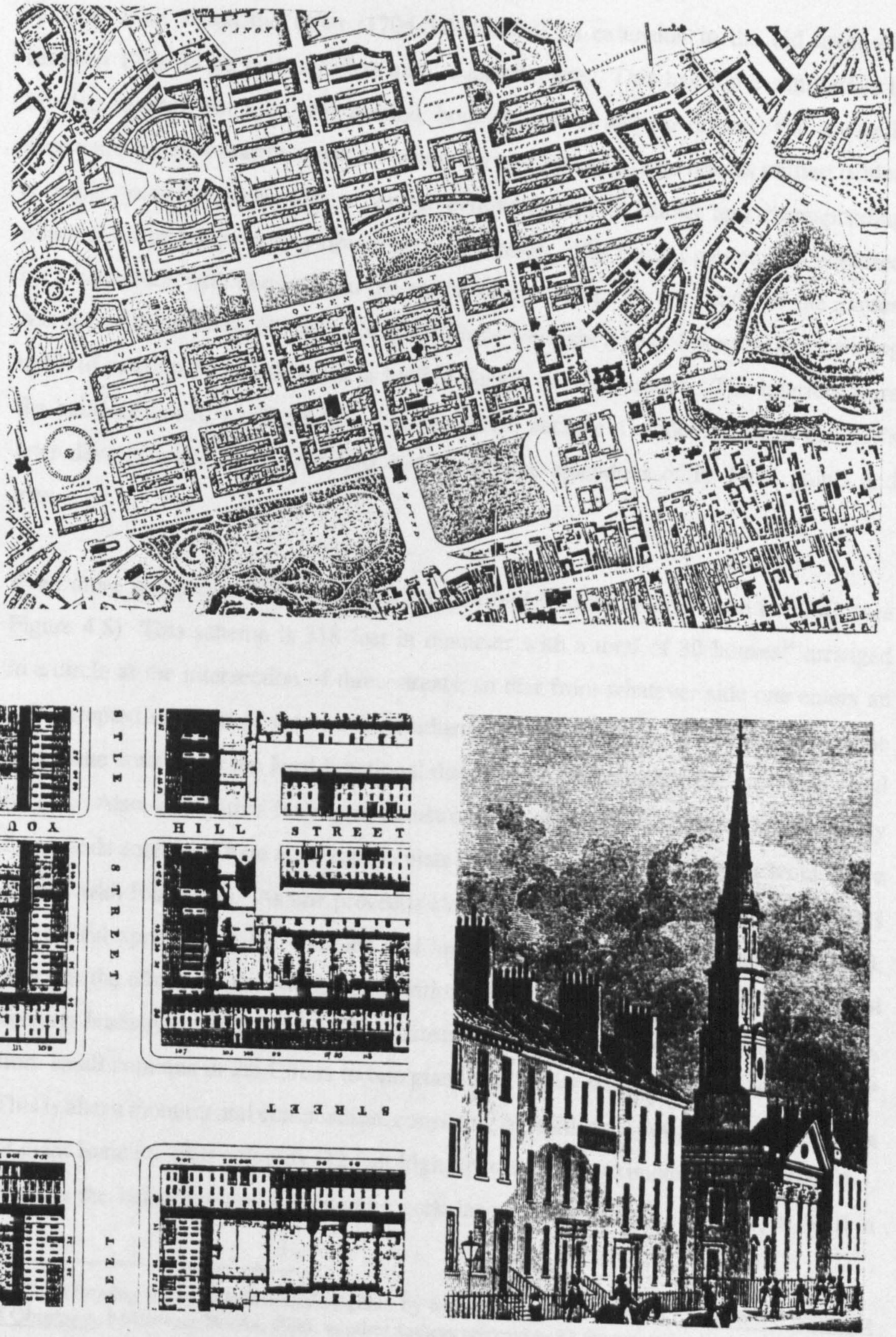

Figure 4.9 Plan of central Edinburgh about 1827, showing New Town and the nineteenth century Circus and Squares; detail of a quarter; and St. Andrews Church.

In 1725 John Wood the Elder (1704-54) planned an extension to the old town and between 1728-34 he built the first unit, Queen Square. This has some similarities to London squares, but it is more unified, both in concept and execution. The square is dominated by the beautiful north elevation, formed by eight large houses unified behind a single palatial facade with a central pediment, end pavilions and corresponding pilasters to the wings in a symmetrical composition. The central garden was enclosed by a balustrade with entrances in the centre of each side. In the centre of the garden was placed an obelisk, 69 feet in height. There were six types of houses, in ascending order of magnitude and they had a unified design for the facades. The interiors were the builders' entire responsibility. Queen Square became a model for all of the city's later development, for its standard streets and the splendour of its focal points and views.

Even more interesting was King's Circus, finished by John Wood's son in 1760. (see Figure 4.8) This scheme is 318 feet in diameter with a total of 30 houses[34] arranged in a circle at the intersection of three streets, so that from whatever side one enters an uninterrupted segment of the circular enclosure can be enjoyed. However, it is at the same time considered the least functional due to the relationship of the open space and its use. Also, a negative feeling of claustrophobia is felt in the Circus because only three roads enter it. There is no escape vista from the enclosing facades, as would have existed with four roads. As one proceeds along the street, the variety of blocks creates a beautiful approach to the complex and landscape of the Royal Crescent (1767-74), which is the climax of the whole composition, despite the absence of an axis or central opening leading out to a church or a château.[35] It marks a complete change in scale, from small columns in the Circus to one giant Ionic order striding upon a single base.[36] This is also a monumental composition, consisting of residences designed as a colonnade of giant Ionic coupled columns (22 feet high, spaced at approximately 8 foot intervals), open to the landscape and surrounding park land. It forms half of an ellipse, with a

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[34] Following the recent information given by Mowl, T. and Earnshaw, B., John Wood Architect of Obsession, Millstream Books, 1988, as other authors referred to 33 houses and a diameter of 315 feet.

[35] Giedion,S., Space, Time and Architecture, Geoffrey Cumberlege, Oxford University Press,1954.

[36] The Ionic order was recommended by Vitruvius as appropriate to the Moon Goddess. This was clearly the younger Wood's choice.

major axis of 170 yards.

The younger Wood conceived a aggressive Palladian concept modified by a timid neo-classical treatment. The new quarters, though closely unified, are rich in variety but also in unity; the square, the circus and the crescent are linked by linear spatial units, the terrace houses linking the three principal geometrical components. The introduction of a homogeneous design for streets was Wood's greatest contribution, not only to Georgian Bath, but to city planning in general.

The New Town at Edinburgh consisted (as seen in Figure 4.9) of a gridiron system of streets with squares, circles and crescents, connected through unified block fronts and arose from the necessity of extending the old city in the eighteenth century.[37] The planner of the first part was James Craig, but it was extended in the nineteenth century by other architects giving place to the second New Town.

Craig's plan was comprised of three long east-west streets, and seven shorter ones crossing them at right angles. The central one opened into two squares, St. Andrew's to the east and Charlotte Square to the west. The eight grid blocks were divided into two parts by a service road giving access to the mews. The three main streets were Princes Street (facing the old city), George Street and Queen Street. The rules included continuity of building lines, an allowance of ten feet in width for pavements, and the provision of a sewer in George Street. However, the street facades in Craig's design were not planned to form a unified design, although the consistent use of Craigleith stone provided a certain unity.

The Georgian development of Edinburgh constituted a vast exercise in Classical form in monuments, public buildings and housing for the well-to-do. In Charlotte Square, (not completed until about 1820), the buildings are three storeys high, with attics and basements. The frontages are completely unified in design and the north side is a replica of the south. The other square, St Andrew's Square, is on the east side of the plan, balancing Charlotte Square. It was built between 1775 and 1790 and its buildings

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[37] Reed P., Order in Space and Society, Architectural Form and its Context in the Scottish Enlightenment, Markus, Thomas Edited, Edinburgh, 1982.

were designed to simulate a unified *'Palace-Front'*. In his first plan Craig proposed a church at the end of each square to enclose the vista.

Craig's grid is dominated by the insistent parallelism of the major streets. An awareness of its finite extension is expressed as reflections that pair northern and southern terraces, eastern and western squares. The New Town was directly related to the upper-middle classes, to establish the social differences between themselves and the inhabitants of the old city, both by physical distance and by structural differentiation. Also, inside the New Town the different positions of houses, of varying quality, were placed in relation to the type of street, so that the richest houses faced the main road, the squares or the private parks, while access to the rear of the blocks, which were developed with two to three storey houses, was provided by minor roads. These rows of mews (a common arrangement in urban housing), also had buildings for horses and coaches, which provided a further physical separation from the private gardens of the large houses.

4.2.3. The Extensions of Turin

Turin, at the beginning of the seventeenth century, could be described as an enclosed city in a pentagonal fortress in which the first old roman gridiron was still intact. However due to Savoy's increase in importance the city was enlarged three times, but still remained fortified at the mercy of passing French, Spanish and Austrian armies.[38] Throughout the first enlargement in 1620 the city reached 100 hectares and 25 000 inhabitants. The second enlargement in 1673 reached 160 hectares and a population of 40,000. The third was laid out in 1714 and the city reached 180 hectares and the population grew to 60,000.

[38] op cit, Benevolo, L., 1980, p.693.

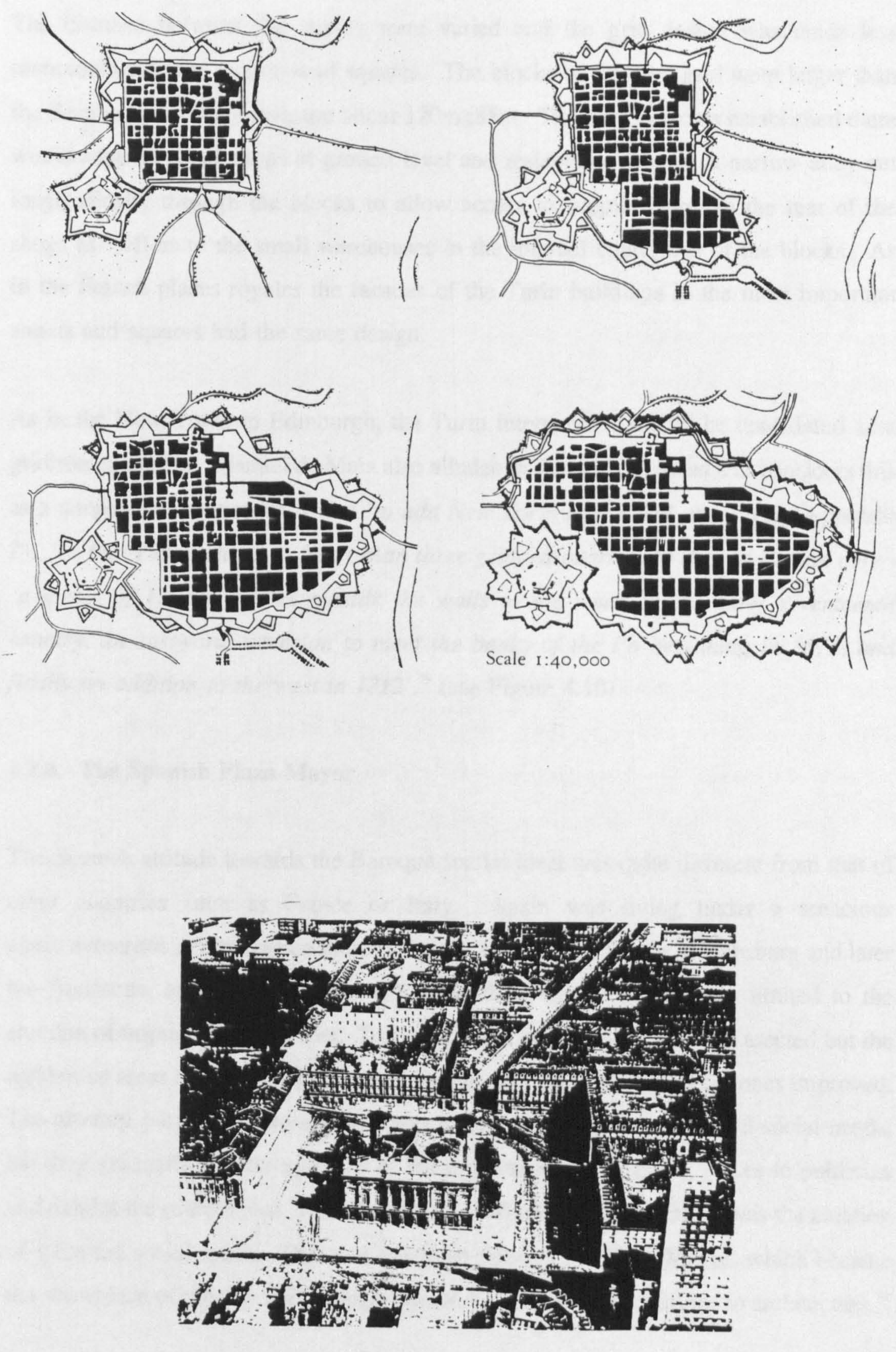

Figure 4.10 Turin's extensions, 1620, 1673 and 1714.

The distance between the streets were varied and the grid design was made less monotonous by the inclusion of squares. The blocks of the new grid were larger than the Roman core. They measure about 120mx85m. The narrow fronts established there would support small shops at ground level and residences above. A narrow alley cut longitudinally through the blocks to allow access to supplies through the rear of the shops as well as to the small warehouses in the internal courtyards of the blocks. As in the French places royales the facades of the Turin buildings in the most important streets and squares had the same design.

As in the New Town in Edinburgh, the Turin intervention should be considered as a gridiron extension. Manuel da Maia also alludes to Turin's extension and considers this as a simple intervention as it was *'to add New Turin to the Old one...'* (see Appendix 2). *'In fact Turin added no fewer than three gridded quarters to the old Roman core - a group of 12 new blocks outside the walls to the south in the early seventeenth century, an eastward extension to meet the banks of the Po beginning in 1673, and finally an addition to the west in 1712'.*[39] (see Figure 4.10)

4.2.4. The Spanish Plaza Mayor

The Spanish attitude towards the Baroque spatial ideal was quite different from that of other countries such as France or Italy. Spain was living under a tenacious cleric-autocratic centralization imposed by the kings of the House of Habsburg and later the Bourbons, and its cities were following their ideals, which were limited to the erection of imposing showpieces. Town halls and public buildings were erected but the residential areas remained neglected. New squares were laid out and old ones improved. The primary purpose of these plazas was to provide for commercial and social needs, but they gradually became symbols of the importance of the cities, places to publicize and exhibit the ostentatious style of monarchy. The Spanish aspiration was the creation of a limited social space. That was achieved through the Plaza Mayor, which became the showpiece of the city and perhaps one of the greatest contributions to architecture.[40]

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[39] op cit, Kostof, S., 1991, p.136.

[40] op cit, Zuker,P., 1966.

The Plazas Mayores were, in fact, a typical example of the Spanish character. They were created through an opening in the old urban pattern, by demolishing the old medieval buildings. They were not as old as the Filipe II '*ordenanzas*' (Valladolid-1592, Madrid-1617), a fact which demonstrates the importance of the American colonies. [41] The most important Spanish squares, in which the seventeenth and eighteenth-century ideas are very well expressed, are the Plaza Mayor in Madrid and in Salamanca.

In 1617 Filipe III, ordered the redesig of the old and irregular market place in the centre of Madrid. For that Juan Gòmez de Mora laid out a completely rectangular space. (see Figure 4.11) It was obviously influenced by the French Place Royale (Place des Vosges), in spite of the fact that the king's statue was erected only in 1848. The square can be approached through seven streets at various angles and at irregularly placed points.

In Salamanca, we have one of the most beautiful, elegant and perfect of the Plazas Mayores. It was built during the years 1729 to 1735. The square is surrounded on all four sides by arcades. The city hall occupies the space above the private houses which have the same height of four storeys. The approaches to the square are through symmetrically planned streets, screened by arcades two storeys high. The square is an empty space, paradoxically it can be used as one of the best festival halls in Spain because of its unity and simplicity. This one differs from the Place Royale, as there is no statue in the centre of the composition.

If one wants to characterize Spanish city planning during the Baroque period, one should think of its unity first and foremost rather than its uniformity and regularity; a strong reaction against the irregularity and individuality of the cities of the middle ages. The spaciousness and regularity of the Plazas Mayores and organic structure of the streets are important characteristics of Spanish cities. They reveal a limited and simple intervention in the old city but project simultaneously a vision of greatness.

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[41] For the Plaza Mayor the Indies laws recommended an ideal size of six hundred by four hundred feet so that it would be big enough for the traditional equestrian sports.

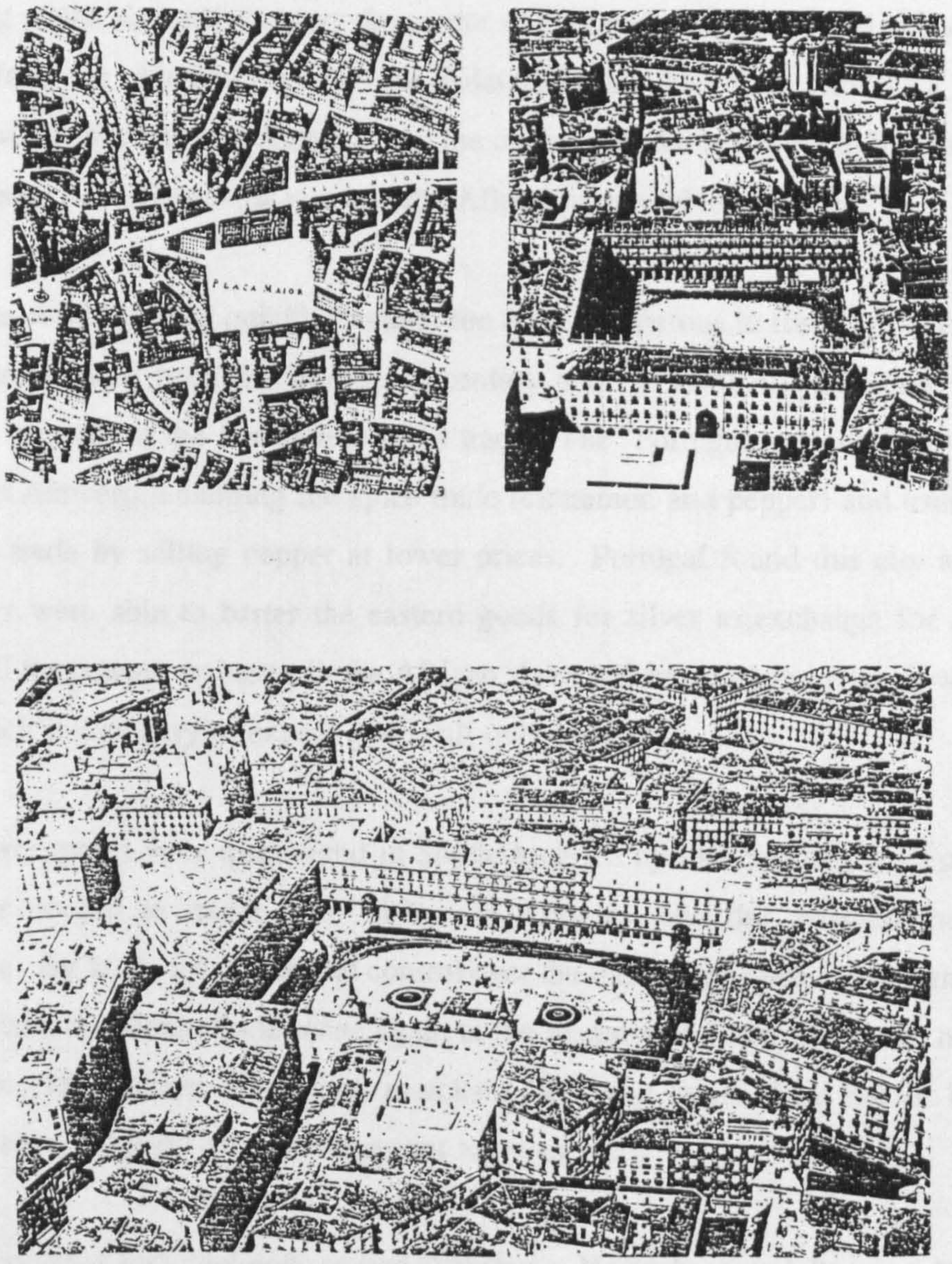

Figure 4.11 Plaza Mayor in Madrid

4.2.5. The Port Cities in the Baroque Age

The situation of the port cities was different from those discussed thus far. This was mainly because of their activity as commercial ports, which meant they were too busy with trade to undertake urban projects on a grand scale. The course of maritime activity, both commercial and military, led to enormous changes in Europe, and by the beginning of the sixteenth century the centre of European prosperity had already begun moving from the Mediterranean to the Atlantic coast. The main reason for this may have been the discovery of America and the opening of the sea route to the East by the Portuguese. Nevertheless, it was not the Atlantic coast which profited.[42]

Cities like Antwerp very quickly became the most prosperous in Europe. Antwerp and Bruges were rivals from the fourteenth century and by 1500 Antwerp took the lead, basically because of the Portuguese spice trade. The 'Portuguese House' moved from Bruges to Antwerp, enlarging the spice trade (cinnamon and pepper) and usurping the Venetian trade by selling pepper at lower prices. Portugal found this city attractive, since they were able to barter the eastern goods for silver to exchange for spices in India, and for copper, to barter in the African slave and ivory trade. Also, it was a city from which it was easy to export goods all over Europe.

When silver mines were discovered in South America by the Spanish, the Portuguese no longer needed to travel from Lisbon to Antwerp, and this affected the latter's commerce. By 1630, the Dutch had control over the Indonesian spice islands and shared with England the Indian trade, once again at the expense of Portugal. In the middle of the seventeenth century, the Dutch merchant fleet was larger than that of Portugal, Spain, France, England and Germany put together.

The Italian cities had declined, as had Augsburg, Nuremberg and Prague. The great days of Seville were at an end and Lisbon's commerce was run by foreigners. Vienna, Paris and Amsterdam were growing in splendour. By contrast, the port-city planning and maritime activities were incompatible, as we can see from the great days of city

[42] op cit, Benevolo, L., 1980.

planning that took place in the difficult seventeenth century, but not in the busy periods before and after that time.

The reason for this seems to be connected with the periods of high taxation, when the kings promoted and glorified themselves, as opposed to the times of great commercial prosperity. Nor were the prosperous merchants prepared to act together.[43] This fact is easily verifiable by looking at the waterfronts of London, Bordeaux, and Lisbon, none of which was improved before the eighteenth century. Only Amsterdam was a truly functioning port, and the only city to remain prosperous while the rest of Europe was in decline. Amsterdam was a city run by capitalists, with a monarchy creating a comfortable environment, not a spectacular one where false prosperity was portrayed. The north of Europe was growing fast, the area becoming more and more distinct because of its rapid industrial development.

4.3. Lisbon and the colonial development

Interest in the study of the colonial city has become greater in the last few years because it is directly connected with the European city. This section will now deal with the Portuguese cities, not as isolated cases but in relation to the Spanish cities and the colonial world in general. Moreover, the seaborne empire cannot be studied in isolation, neither in Spain, nor in Portugal, and specifically not in Lisbon, because the Lisbon reconstruction was in reality related to the new empires, as will be shown.

It was during the Renaissance period that the worldwide expansion of the European countries began. One of the first reasons was to obtain products not available in Europe, and in order to achieve this, urban settlements were founded. The first settlements to be built were the ports, allowing for the export of colonial wares and the importation of goods from Europe.[44] The military forts and castles were the second step in the process, thereby permitting the establishment of frontiers. Then, as the colonies became more established, commercial centres, governmental centres, minor and

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[43] op cit, Olsen, D.J.,1986.

[44] Gutiérrez, R., Arquitectura y Urbanismo en Iberoamerica, Manuales Arte Cátedra, Ediciones Cátedra, S.A., 1983.

industrial cities were created.

The colonial cities, promoted by political forces and supported by economic power, presented great opportunity for development in virgin territory, and for experimentation with planning theories. *'Therefore the city did not arise to serve, but to subdue'*.[45] The shape of the colonial city, with its open geometric outline, was in complete accordance with the concept of Renaissance utopias. Except for rigid defensive walls, most South American planning was in an open style. However, it is important to distinguish the three phases of Portuguese 'Imperial' history. The 'First Empire', beginning in 1415, developed maritime and commercial enterprises in Africa and Asia. The 'Second Empire', in the Atlantic, was based on trade in slaves, sugar and gold (Angola and Brazil). The 'Third Empire' lasted until the Portuguese Revolution on 25 April 1974.[46]

Portugal commanded the largest foreign empire of any Western European country. It was to be its one and only empire. Indeed, it was an enormous empire for such a small and rather poor country. Questions one might pose are: How could Portugal be so successful in that century (starting from around 1440), and how could it then decay within just fifty years? And why did the empire not act as a catalyst inside Portugal itself, as was the case in other countries, such as the Netherlands, Britain and Spain, bringing progress not only on economic and political levels, but also in the development of cultural life?

In Portugal, apart from Camões who wrote the Lusiadas, there are few well known names in art and literature. It is generally recognized that the greatest Portuguese intellectual contribution to Europe was its geographical knowledge and navigational exactitude.[47] It is well known that Portugal built churches in Brazil, but not generally

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[45] Portes & Walton, 'Urban Latin America: the Political condition from above and below', Austin, University of Texas Press, 1977, p.9.

[46] Boxer, C.R., The Portuguese Seaborne Empire 1415-1825, Hutchinson, London, 1969.

[47] However, there are few countries in the world which could afford -even up to the present day such enormous artistic patrimony, possibly the most widespread in the world, as well as the least dictatorial. This is easy to confirm if one looks at a map, but it is rather an enigmatic thing, because when we think that the Portuguese built in all the continents (even in Australia) and they are at this present moment afraid, or ignorant of acknowledging that it existed and that it was on such a magnificent scale.

known that three hundred or so churches were also erected in Japan and Sri-Lanka. The beautiful fort on the island of Mozambique is renowned, but the ones built in Indonesia, in Kenya, Ghana and China have been forgotten. Totally consigned to oblivion are Bassora (now in Iraq) with its magnificent Fort, the Bahrein island and the capital of Oman-Muscat, or Gondar in Ethiopia. Misconceptions still remain, as illustrated by Uruguay which is frequently though of as a Spanish colony, but is actually a Portuguese settlement.

The colonial cities became important sometimes because of their advantageous locations, and sometimes because of the colonisers themselves. They were economic centres where a government apparatus was essential to attract population. It can be said that these cities were first created by the exercise of power to obtain agricultural goods, later generating other political centres in their wake, but always controlling the land and the inhabitants.

The city as a *'cultural artefact'* becomes an instrument of colonisation. What can we understand about the physical and spatial environment? The urban plans, patterns, buildings, inhabitants, values, behaviour and activities of the past, have they irrevocably determined the shape of the future? What does colonial heritage mean? What are the relations between the colonial city and the mother city? Does the colonial city still exist or was it lost in the past? The answers are all connected and interwoven because the present-day is linked so closely to the past.

4.3.1. Comparison of the Spanish and the Portuguese system of planning in South America

Overseas exploration began with the Portuguese and Spanish, and during the sixteenth century it was their exclusive domain. Only in the eighteenth century did the French, English and Dutch begin to establish their routes. The Portuguese approach to the American continent was quite different from the Spanish. For many years the Portuguese sought to exercise power, and to maintain basic commercial exchange, by trying to find a sea route to the Orient. By 1498 Vasco da Gama had reached India by sailing around the southern tip of Africa.

However, from the very beginning, the Spanish ambition was the total conquest of America.[48] In 1492 Christopher Columbus reached America on a voyage supported by Spanish finances. In 1493, Pope Alexander VI drew a line demarcating the zones reserved for Portuguese and Castilian colonizations, according to a meridian passing 320 miles west of the Azores or the Cape Verde islands (the two archipelagoes lie some 5 degrees apart).[49] Later, direct negotiations between the two countries led to a better agreement.

The Treaty of Tordesillas in 1494 established the division of the areas of discovery according to a meridian line passing 1,184 miles west of the Cape Verde islands. The western share would belong to Castile, the eastern to Portugal. Nevertheless, this line did not prevent the Portuguese from expanding in Brazil much beyond their demarcation line. The same happened with the Moluccas, claimed by the Spanish. (Maps existing in Lisbon's Royal Palace, and drawn well before 1500, show lands close to that location. This indicates that Portugal knew already in 1494 about the new continent of America, which explains the 1,184 miles detail in the Tordesillas Treaty).

The Portuguese controlled the oceanic commercial space through naval bases, most of which did not subsequently develop as cities with a regular shape. In founding these, they tried to reproduce the mother cities, that is, medieval Lisbon and Oporto. However, the Portuguese were unable to conduct a proper, full-scale colonization programme.[50] The empire was too vast for the country, and as the bureaucratic laws of control were introduced only at the end of the sixteenth century, the hoped-for results from the colonies did not materialize from the beginning.[51] The Spanish wanted a colonial empire, the Portuguese a commercial success.

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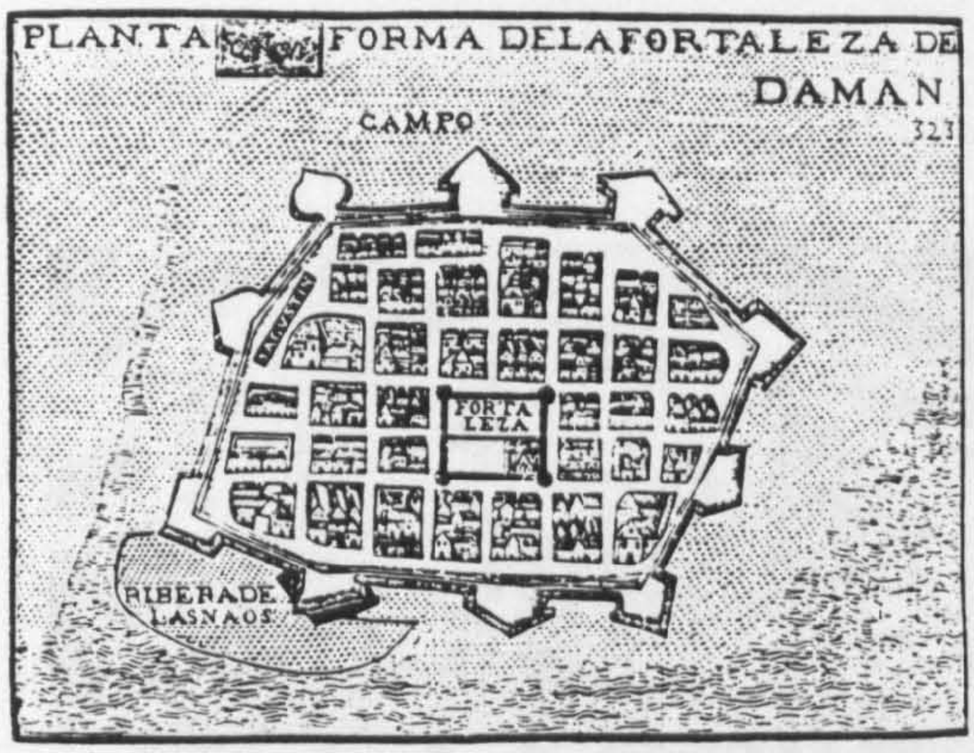
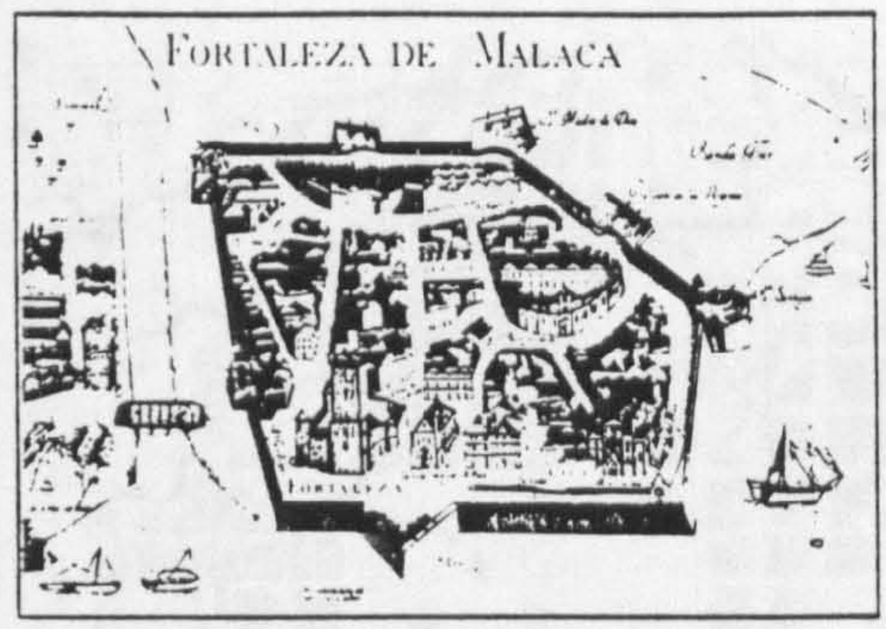
[48] This can be explained, if one thinks of the Spanish character: '*Spaniards are always torn between two extremes of all or nothing*': this '*todo o nada*' attitude has dominated Spanish History. It impelled the Spaniards to conquer a new world...'. Gutkin, E.A., Urban Development in Southern Europe: Spain and Portugal, Volume III, Collier-Macmillan Limited, London, 1971, p.147.

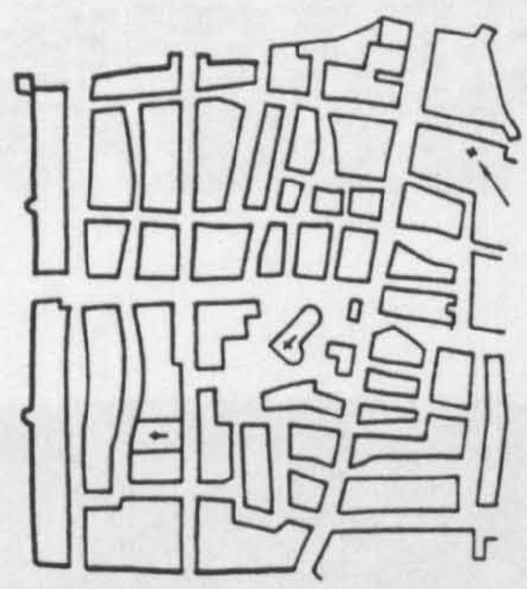
[49] Marques, A.O., History of Portugal, Vol. I, Columbia State, Columbia University Press, N.Y. and London, 1972.

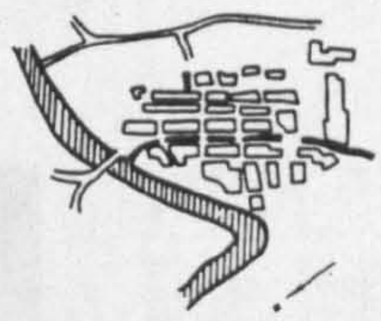
[50] 'Up to 1650, not even the coast line was thoroughly colonized. Only in the São Paulo and Rio de Janeiro areas did the Portuguese penetration go beyond 250 miles.', ibid., 1972, p.359.

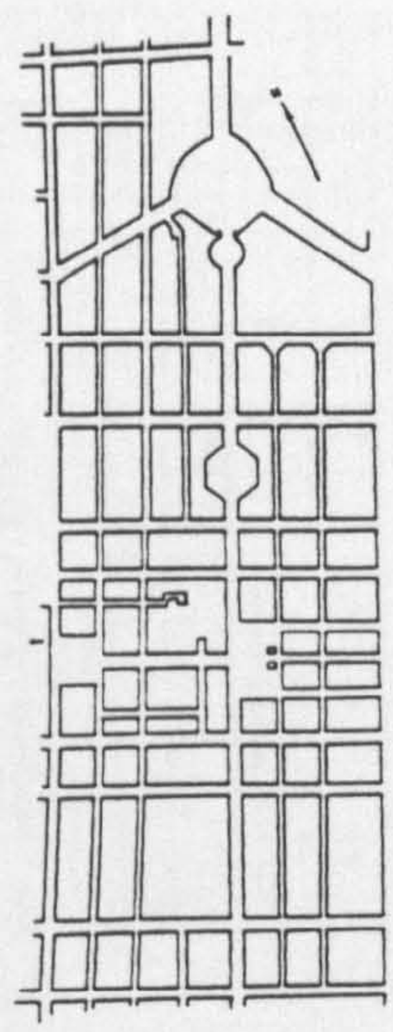
[51] op. cit, Boxer, C.R., 1969.

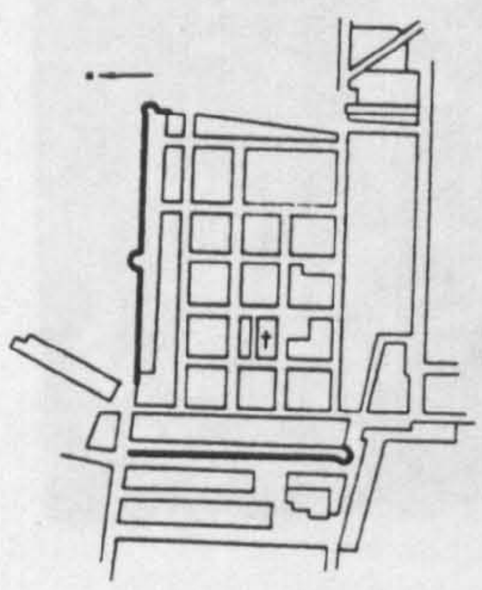












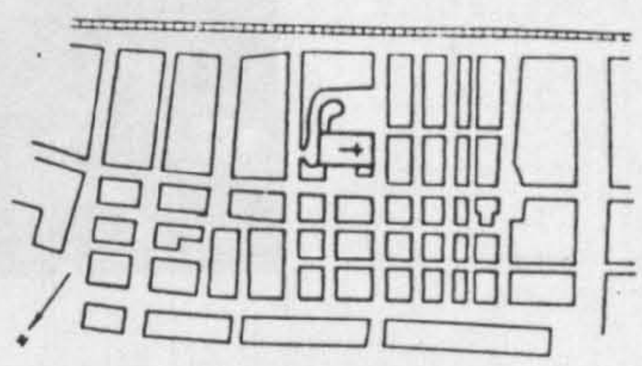


Figure 4.12 Portuguese forts Damão and Malaca and the Sierra Morena urban colonisation.

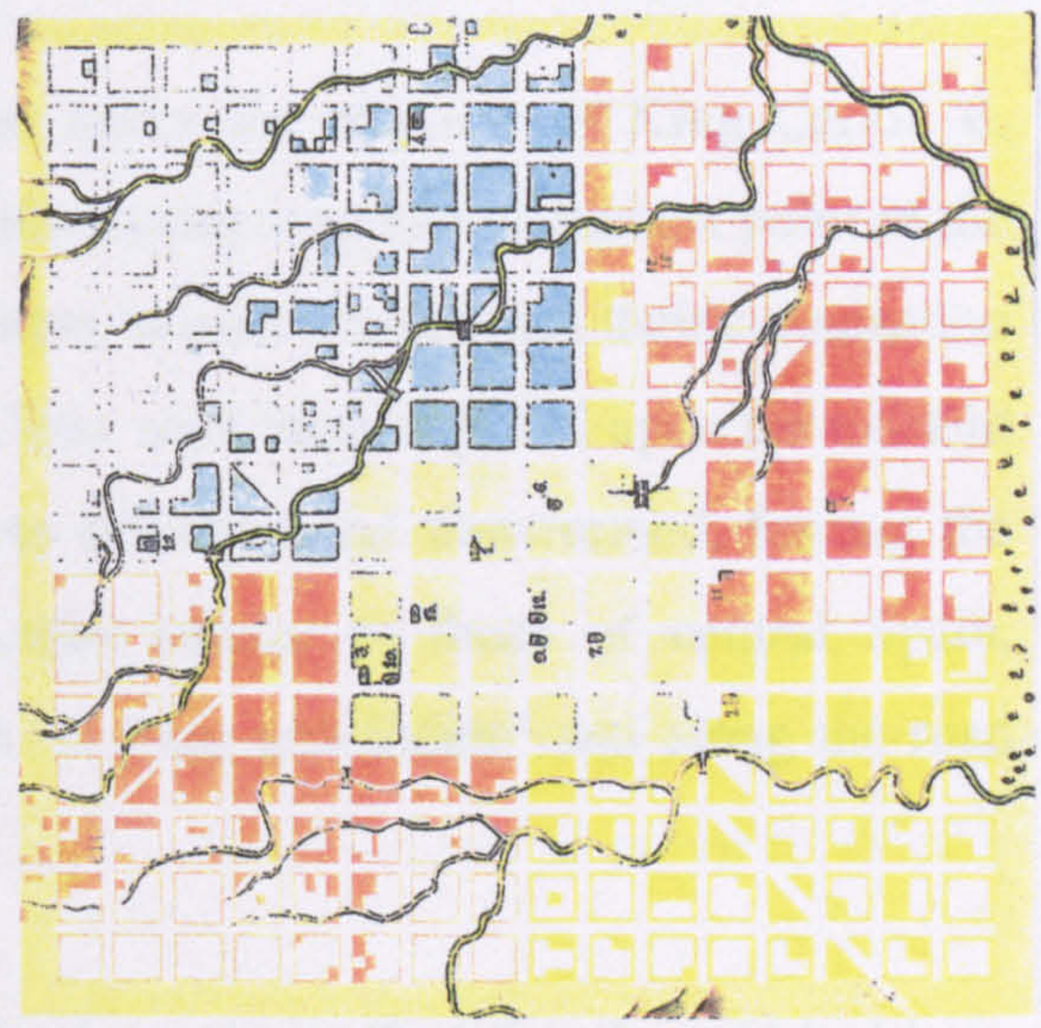


Figure 4.13 Quito City, 1734; Caracas, 1750; Mexico City at present; Talavera de Madrid, 1688.

The Portuguese urban policy was based on: (i) Reinforcing the first nucleus through the concentration and organization of services; (ii) Building new churches and bringing order to the surrounding areas; (iii) Conquering land adjacent to the river banks; (iv) Ordering new land, using the church and the inhabitants' financial resources.[52]

In contrast to this, the Spanish colonization, under the mandate of King Carlos V, commencing in the second half of the sixteenth century, reached its highest point in the founding of colonial cities. Although conciliatory in intent, in practice their colonization in America was very brutal and enslaving. Cities were superimposed upon the existent urban structure. The native settlements were absorbed and transformed, forcing the population to live in new, densely-built cities similar to those of central Spain, specifically in 'the Sierra Morena', between 'el Viso and Bailén' and along the road from 'Córdoba to Écija'.

Looking back through the history of Spanish planning, we find that the grid had been used previously during the colonization of the interior, undertaken under King Carlos III. In 1767 he issued a decree ordering the resettlement of the almost desert regions in central Spain. These cities were political instruments of the christian kings, created to attract foreign settlers, and were also important places on the pilgrimage road to Santiago de Compostela. The new villages and cities were very simple in their structure, similar to smaller-sized Roman camps. Basically they were formed in a rigid rectangle with two streets and a square in the centre where the two streets crossed each other. It was there that the most important buildings were placed; the church, the town hall, and the prison. The secondary streets ran parallel to those forming the crossing. Although these squares show a similar formality with the South American ones, they cannot be compared to those, neither in the size of the square and the plots, nor in the Plaza Mayor type as a basis of the composition. La Carolina, La Carlota, Santa Fé, Puente la Reina and Castellón were the most important centres and the inspiration

[52] Rodrigues, M.J., Olinda e Recife, uma situação de bipolaridade no urbanismo colonial Português, Academia Nacional de Belas Artes de Lisboa, 1979, p. 70.

models for the many others there built.[53]

Although small in size and modest in aspect, these villages made an important contribution to Baroque city design.[54] The Sierra Morena experience became the basic model for the Spanish colonial system used in South American one, based on the family structure, the 'colonato', the plot system and communal solidarity. Both were cases of colonization which had been deliberately planned and systematically executed. Following this idea, the Spanish also exported the concept of the 'mother city'. (see Figure 4.12)

Their basic conditions were: (i) The building of a completely new city; (ii) The planning of city as a unit according to preconceived specifications and pattern; (iii) Centralized control; (iv) The desire for measured apportionment of property; (v) Use of the grid plan.[55]

As an example, it is well known that when the Spanish arrived in Mexico, they found an existing civilization of the Mayan, the Toltec and the Aztec peoples. The Aztec towns were basically rectangular, but not necessarily based on a regular grid. The rectangular pattern originated from the land division among the clans. The central square was the place for social activities, but it also served as the courtyard of the temple.

The '*plaza*' represented the centre of the civic life for the Spanish colonies in America. The Spanish urban plan and its '*plaza*' are influenced both by Indian preconquest concepts and by the Spanish concepts originating from the fifteenth and the beginning of the sixteenth century. In the 'Indies Archive of Sevilha' there are more than a hundred plans of cities founded in the colonies during the first fifty years of the sixteenth century. In Tenochtitlan, (today Mexico City), most of its main roads converged on the central square, which later became the Plaza Mayor, and the temples

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[53] CEHOPU, La Ciudad Hispanoamericana, El Sueño de un Orden, CEHOPU, 1989, p.95.

[54] Morris, A.E., History of Urban Form, before the Industrial Revolution, George Godwin Ltd., 1979.

[55] Stanislawski, D., 'Early Spanish Town Planning in the New World', Geographical Review, vol.37, 1947, pp.94-105.

were completely destroyed in 1524, although the city layout was kept. Mexico City still has a regular gridiron plan not very different from the original Aztec city in which the first nucleus was centred around the main temple, which is where the cathedral and public buildings are now situated.[56](see Figure 4.13)

It was the first example of a gridiron plan. According to the Indies Laws, fourteen streets intersecting each other at right angles were laid out around a central square, which was to contain the cathedral (1563 to 1665) and the residence of the governor. The other two sides which completed the square were filled with buildings having ground-story colonnades, the '*portales*' of the merchants.[57]

The first Portuguese and Spanish cities founded in the Atlantic and Antilles isles were simple and haphazard settlements. A case in point is Santo Domingo (1496), founded as a military camp and transformed into a point of defence, which is similar to Santa Fé de Granada. These were schemes inspired by Renaissance treatises, such as the ones suggested by Francisco di Giorgio in 1480, or by Alberti's description in the fifteenth century. The later cities had a planning system based on the model of a grid. This concept of the city as a central place for a permanent population and commercial concentration was introduced and developed by the Spanish. They followed the chequerboard pattern of rectilinear streets, containing series of isolated blocks. This is clearly explained in the 'Indies Laws' of Carlos V (1573) establishing the organizational principles for the American colonies.[58]

In this respect it is of great interest to compare the ideas of Vitruvius with the instructions of the Spanish kings dating from 1513. Their similarity leads one to conclude that the Indies Laws were inspired by the Mediterranean Roman and Greek experiences, probably directly by examples following the treatises of Vitruvius.[59] Many

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[56] op cit, Stanislawski,D., 1947.

[57] This rectilinear plan enabled Mexico City to have 100.000 houses in 1552, making it the biggest city of King Carlos V's domain. (Mexico had ten million inhabitants more than the whole of Spain, which had only seven millions altogether).

[58] Benevolo, L., The History of the City, Scholar Press, London, 1980, pp.605-652.

[59] op cit, Stanislawski, D., 1947, p.94-105.

aspects of urban planning are included, starting with site selection and dealing at length with urban form. The Laws were applied everywhere in the New World during the sixteenth century. From Bogotá (1538) to Santiago del Chile (1541) and La Paz (1548) the grid plan was used. These regulations of 1573 can be regarded as the first American planning code, and had such an impact that even today the system still serves as a reference for the central South American cities.

4.3.2. The organic and the grid system of planning

From late historical times the grid has been a distinct feature of colonial cities. Its formality is a symbol of authoritarian power. This system occurs frequently in the Roman, Hellenistic, Egyptian and Mesopotamian civilizations. Nonetheless, it is not so easy to explain the enormous chequerboard in China (Chou dynasty 1123-256 B.C.) or in Shang (1765-1123 B.C.)-Confucian philosophy. The grid was used in Pre-Columbian America, at Tenochtitlon, Mexico, where land recuperation methods resulted from a regulated system.[60]

The gridiron is formed by several parallel lines which imply systematic public movement. The cardinal points had important religious meanings derived from antiquity, identified later with political power. The grid was, and still is, a way of obtaining the maximum possible efficiency. It may be contrasted with cellular forms, where man and his family are better oriented with their quarter. Advantages in the gridiron system are that it is an easy method by which to divide and supervise the land. It is one of the easiest to execute with only a rule and a rope (thus it could be simply done by soldiers and colonists). It is very easy to manage for registration purposes, but can increase land speculation in societies where it is permitted to keep and change private property. On a small scale the gridiron is an easy system for orientation, but can quickly become monotonous when it grows or is simply expanded.

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[60] op cit., Morris, A.E.J., 1979, p.251-255.

In the South American colonies, the gridiron was initially laid out, although usually it was only many years later that it was filled up with houses. As a result, there were enormous empty streets. The city was not three-dimensional but almost a two dimensional structure without permanent external limits, as it had to be able to grow constantly.

During the sixteenth century the medieval Italian city of Ferrara also formed an example of a two-dimensional plan. When a new city was built next to the old one, the addition was a planned extension of the city. A new square was opened out,'Piazza Ariostea' (120x200m), to become the new centre, and a single straight street was created with other ones crossing it. But, as the city stopped growing, this Renaissance planned addition became the 'suburbs' for modern buildings. Therefore, two conclusions may be drawn: (i) to build a 'new city' next to an old one, it is necessary to have a direct coherence between the planning of the city and the architectural realisation; (ii) the reason behind the Architecture and Planning design, must always be present and unified. Moreover, it was often the case that many of the colonial cities were devised and planned in Europe, thus preventing the possibility of adaption to the topography in as natural a way as was desirable.

The 'chess board' pattern, which the Spanish had introduced into Latin America as a result of the colonisation order of Carlos V during the sixteenth century, was later adopted by the English and French during the seventeenth and eighteenth centuries for their North American colonies.[61] It is easier to find points of interest in an organic structure than in gridiron ones, such as Vila Real de Santo António, a Portuguese city founded in 1774, and of the Pombaline rebuilt city where the elegance and simplicity of the facades does not compensate for the rather poor and unimaginative urban plan.

It is possible in some cities to distinguish between the central nucleus and the periphery, both of which have grown since the end of the medieval period until the present day. In others, of larger size, the growth is disordered and often is not well connected to the old districts. Mário Tavares Chicó argues that this was the main reason for the

[61] op cit., Benevolo, L., 1980, p.639.

traditional Portuguese organic city concept being adopted by the national architects (many of them fort builders) to be reproduced in Africa, Brazil and India.[62] *'The Portuguese established in Brazil, the world, almost intact, that they had created in Europe'.*[63]

'The best proof is seen in the city of Bahia itself. In almost two hundred and fifteen years, from 1549 up to 1763, during which it enjoyed the privilege of being the first Lusitanian metropolis in the world, Bahia became an accurate replica of Lisbon and Oporto.'[64] (see Figure 4.14) This fact was not limited only to its buildings, but also applied to its localization and development. As in Lisbon and Oporto, and in keeping with the Portuguese tradition, Bahia was established on a high steep slope dominating a large expanse of water. Bahia is much more similar to Oporto than to Lisbon as in Lisbon there were 'two cities'; one around the Castle and another on the other side of the Avenida da Liberdade valley, called the Bairro Alto.

It is known that in 1763, when Bahia ceased to be the capital of Brazil, it was as medieval as Lisbon before the major reforms of Pombal. It is usual to say that nothing in city planning was invented by the Portuguese in the new countries, in contrast to the Spanish who were instructed by law to execute a regular street grid. The only rules for the Portuguese were those applying to the defence of high places. Their cities grew up by the gradual establishment of isolated buildings.[65] This kind of planning can be seen in Olinda in Rio de Janeiro, and in the Minas Gerais cities, (Brazil), although in Bahia it had its most evolved development.

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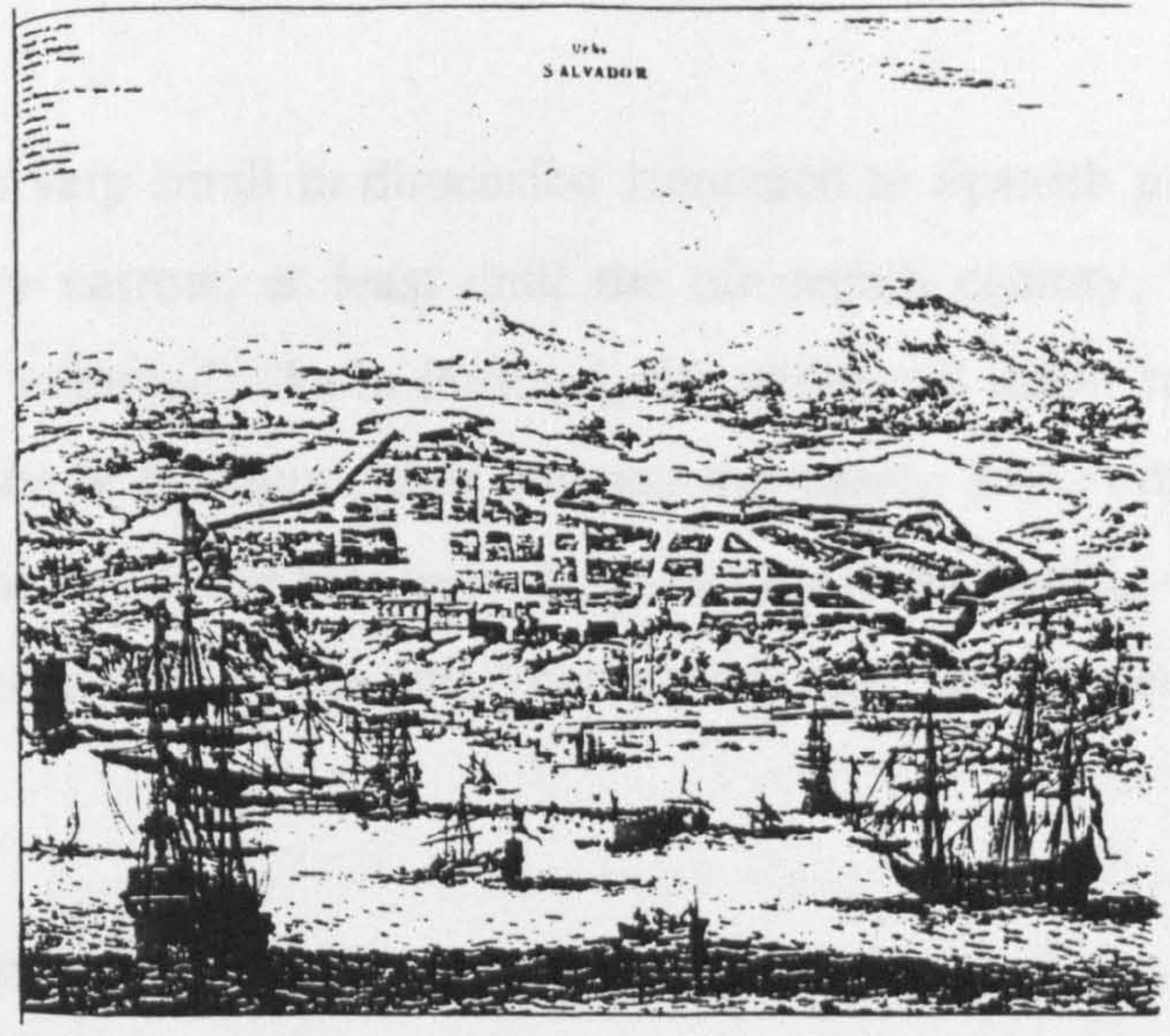
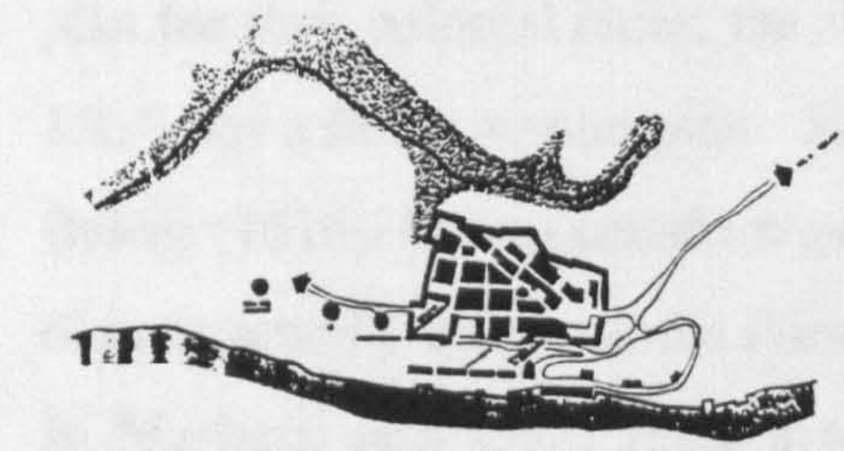
[62] Chicó, M. T., 'A Cidade Ideal do Renascimento e as Cidades Portuguesas da India', Garcia da Orta, 1956.

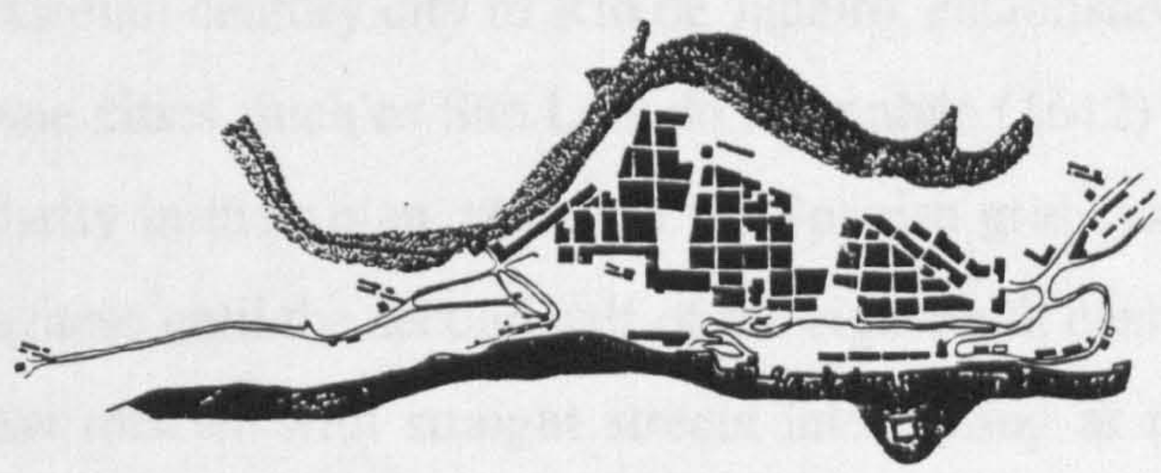
[63] Smith, C. R., As Artes na Bahia - 1ª parte, Arquitectura Colonial, public. da Prefeitura Municipal do Salvador, 1954.

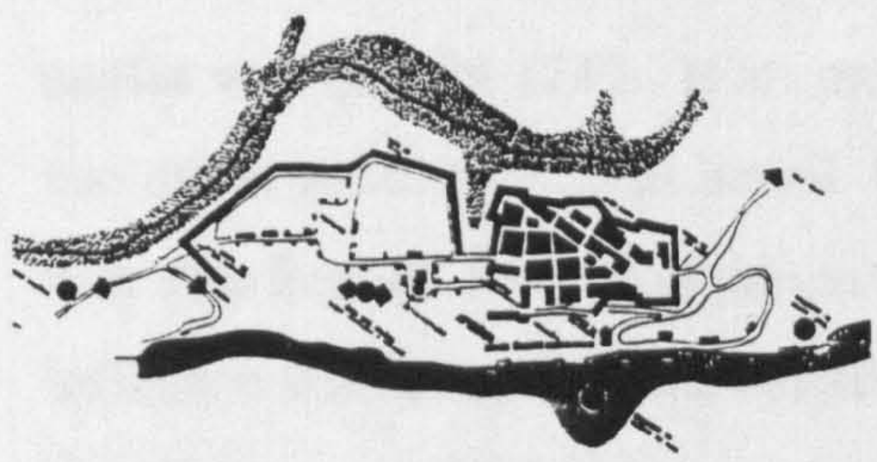
[64] ibid., 1954.

[65] It is worth noting that when the two atomic bombs destroyed Hiroshima and Nagasaki in 1945, the latter, having being a Portuguese project, was not totally razed to the ground, nor was the mortality rate high, due to its mountainous implantation.









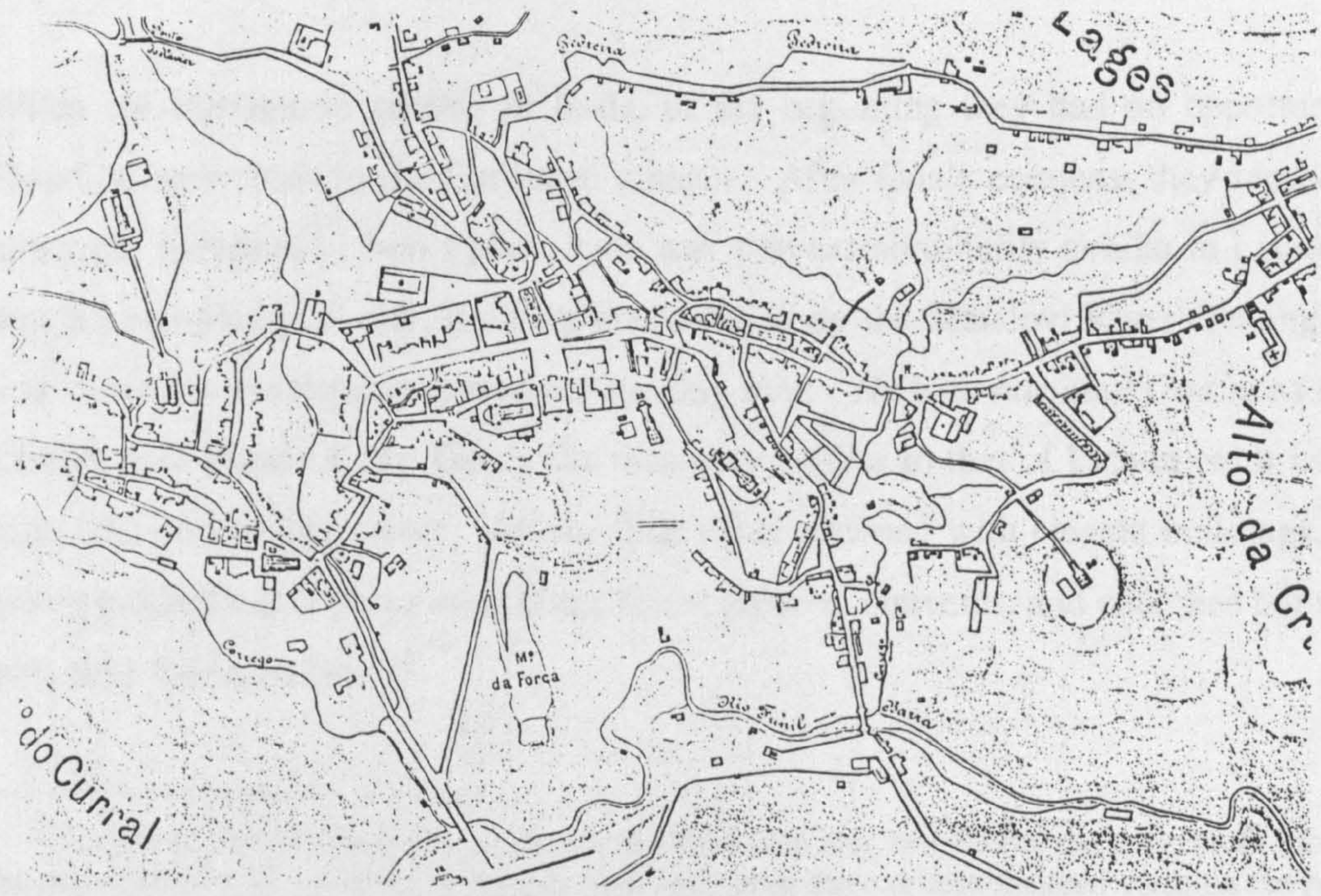


Figure 4.14 Plan of Bahia in the eighteenth century and Ouro Preto, 1888.

The plots were very small in dimension compared to Spanish plots and the Brazilian plots were very narrow, at least until the nineteenth century, when they showed a tendency to be enlarged. As in Portugal, the traditional urban structure was based on a continuous line of buildings, thus creating the street. The Portuguese plot measured 10 metres at the front, but was very deep and long, originating different house types. This is easily confirmed by the small court-yards and the complete (full) plot coverage.

Although the Portuguese, unlike the Spanish, did not develop a prescribed geometric plan for their colonial cities, the sixteenth century city of Rio de Janeiro, established in 1567, has a fairly regular plan. Some cities, such as São Luis do Maranhão (1612) and Belém (1616), have a certain regularity in their plan, although the Spanish grid system did not actually influence the Portuguese until the second half of the eighteenth century. In Mariana, near Ouro Preto a new quarter with straight streets intersecting at right angles was built in 1745. It is considered to be the earliest example of the Portuguese use of the gridiron plan in Brazil. On the continent, the only case of a new settlement was Vila Real de Santo António in the Portuguese Algarve. There we can see the direct influence stemming from the neighbouring villages founded in the Sierra Morena, which also influenced the South American colonization.

When the Portuguese arrived in India, in the beginning they had no opportunity of founding new cities in the European manner. After Goa's conquest they reproduced, although inverted, Lisbon's plan. Goa was also extraordinarily similar to Lisbon, and was a Luso-Medieval city, growing gradually along the Mandovi River creating a half star shape. A Portuguese proverb of the day said: *'He who has seen Goa need not see Lisbon'*.(see Figure 4.15) Goa's site was very similar to that of Lisbon, with its seven hills and surrounding water. All the hills were crowned with elegant buildings, while lower ground was covered with magnificent palaces, convents, and churches built in the beautiful Bassein stone.[66]

[66] Approaching Goa from the sea one would have seen four long fences along the south bank of the Mandovi River (each of these enclosures must have been three or four hundred yards on the riverside, and perhaps a hundred and fifty to two hundred yards in depth inland) where most of the commercial activity took place. The 'Ribeira Grande', or Great Embankment, where the city workshops were established (arsenal and gun-foundry, the mint, the naval dockyard, the offices of the Vedor da Fazenda

The urban structure of Goa consists of several roughly semicircular and curvilinear streets having the Arch of the Viceroys as a centre and bisected by the Rua Direita which runs south from the Arch. Elsewhere, patterns tended to be similar wherever the Portuguese had effectively conquered a town and dispossessed its rulers: they tried to Europeanize it and convert it into a replica of the places they knew in Portugal.[67]

These cities were surrounded by walls with towers and doorways between forts. The best sites were kept for churches and convents, public buildings and palaces, with commercial activities taking place down along the river. Order was ignored by the Portuguese as the delighted travellers remarked. Its streets ironically called 'straight', were tortuous, and its squares irregular. The houses sited on the slopes around a network of dark streets and alleyways, have upper floors as in Europe.

When it was necessary to build quickly the old traditional model was rejected and instead the model accepted was that of the 'ideal city'.[68] Damão, in India for example, has a regular plan inside a fortified wall similar to so many Italian '*ideal cities*'. Also Bacaim, considered to be in its architectural aspect the most beautiful Portuguese city in India. Others like Chaul, Cranganor, Cochim and São Tomé (Meliapor) show a certain level of urban regularity.

(Controller of the Treasury) and the elephant stables were the first important spaces to be seen when approaching from the Bar. To the east of the Ribeira Grande, there was St. Catherine's Quay, a shelter for fishing boats, as well as a fish market. Nearby, on the western side, the Archbishop's prison for the Inquisition victims could be seen. As in Lisbon, the Viceregal residence was located in the Ribeira, allowing a good view over the arsenal and shipyards. The Rua Direita, or Straight Street, which began in the Arch of Viceroys, was two and a half km long and the most important street in the whole city. Adjacent to it was the Cathedral quarter, which lay behind the Ribeira das Galés and St.Catherine's Quay, where the most important buildings in the whole city of Goa were situated.

[67] In Goa, as in the rebuilt city of Pombal, each street was devoted to some special trade or profession.

[68] During Medieval times, a concentric settlement with narrow and irregular streets was the common pattern of the city, but another type of city emerged where the plan was not as regular as the Greek or Roman (cities like Mileto, Alexandria) but still clear and harmonious. The new cities in the South of France and the "fortified-cities" from the Gothic period (Algues Mortes, considered the most beautiful French fortified city) all have regular plans and are surrounded by walls, towers and well protected doors. When, in the Renaissance the old - Greek - Roman formula returns and the radial concentric pattern appeared, inspired by Vitruvius' 'De Architectura',the cities did not get rid of their walls but started using them in a new way. That can be seen in the ideal cities of Daniel Barbaro and Pietro Cataneo (1593) and others drawn by Vicente Scamozzi. in: Chicó, M. T., 'A Cidade Ideal do Renascimento e as Cidades Portuguesas na India', Garcia da Horta, 1956, pp.323.

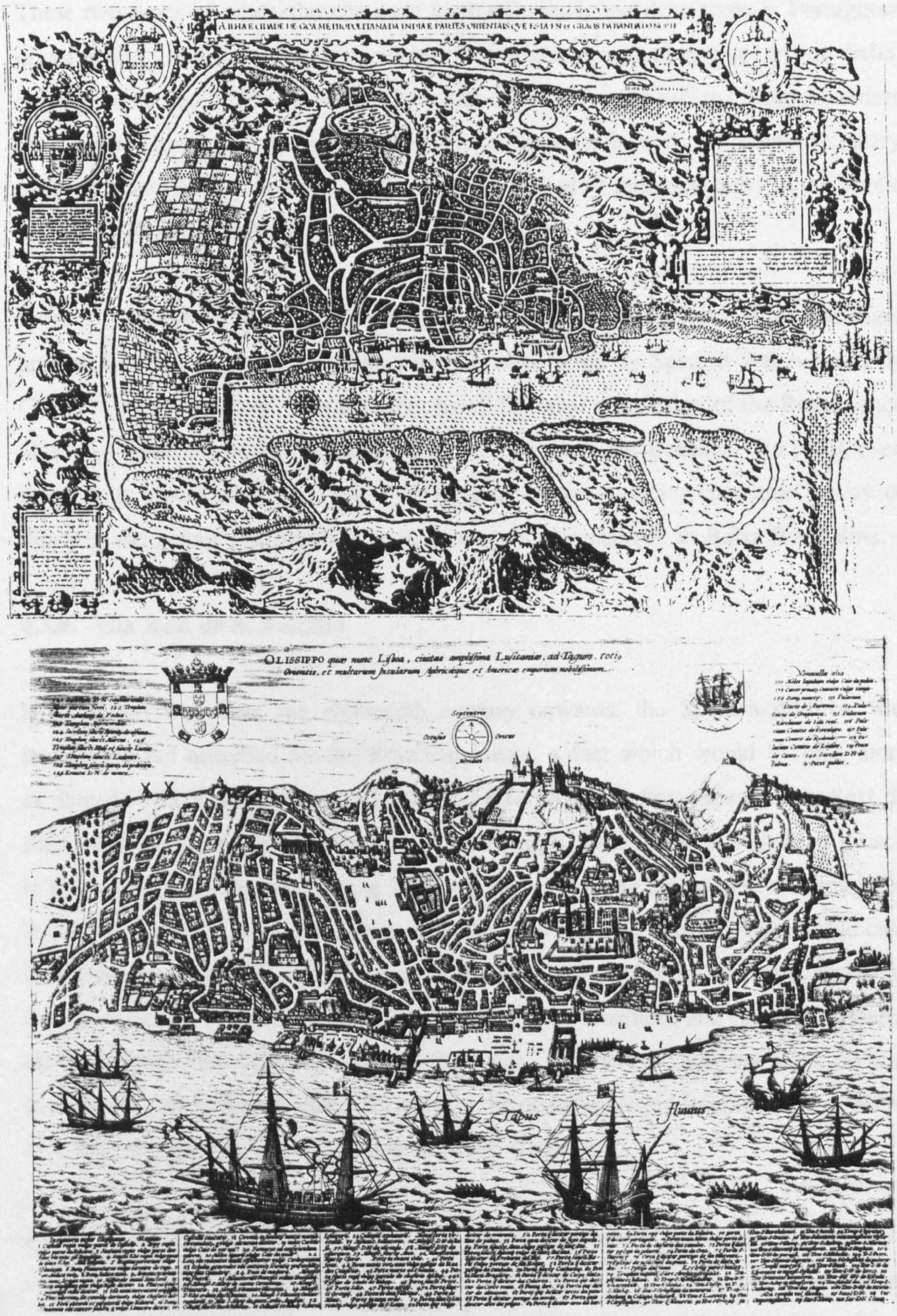


Figure 4.15 Goa and Lisbon's plans

These two types of cities, the one used in Brazil which had deep roots in Portuguese urban history, and the other inspired by the Renaissance ideal city present in India, correspond to two different attitudes. In Brazil, the Governor and the religious orders moved very slowly in spreading Christianity. In India on the contrary, it was necessary to move faster, and at the same time create an element of monumentality in the public buildings, churches and convents.

From the eighteenth century onwards, Portuguese terms of reference were no longer applied to the cities, and the urban pattern was inspired by Spanish action based on Carlos V's 'Indies Laws'. On the other hand, however, the design of the Renaissance ideal city remained, as well as that of the military camp. The Brazilian city plans, even those with a rural character like Vila Real de Santo António, constitute a way of thinking and acting which will have its most complex example in Baixa Pombalina.

4.3.4. Vila Real de S. António

It is known that from the eighteenth century onwards, the Spanish gridiron was introduced and absorbed by the Brazilian towns, a fact which would become more evident in Vila Real de Santo António and later in Baixa Pombalina. Vila Real de Santo António is a fishing town on the southern edge of the Algarve, built from scratch in five months and designed by the 'Casa do Risco' drawing office, demonstrating that the grid is indeed a very quick system to put into practice.[69] It is a remarkable case in Portuguese urban history as everything was conceived, planned, and built, including its site. Its construction began in 1774 along the river Guadiana, and can be considered the first village built in Europe on a gridiron plan. Figure 4.16 show the proposed plan for the vila and its actual state. Effectively, its conception and its plan show a strong link with the Spanish urban planning in South America.

Public buildings and the church were built by the government, creating a square in the centre of the plan. This magnificent square with an area of 5625 sq., metres is crossed at right angles through two axes representing the public power -E.W.- and the church

[69] Oliveira, A., Monografia do Conselho de Vila Real de Santo António, Algarve em Foco Editora, 1908.

-N.S.-. The whole composition is focused on a marble obelisk, fixing the precise centre of the composition which is emphasized by a black and white radiating pavement.[70] In this square public power is represented by the municipal offices, the municipality recebedoria, the courts, the district conservatoria, the council prison and the parish church.

The buildings are three storeys in height, the top one being crowned with a mansard roof, an intrinsic and strong element in the Pombaline architectural composition. Vila Real de Santo António (60.000 sq.m.) has a hierarchical grid plan by means of the plots, in the system of locating buildings within the plots. The regulated plan, similar to the plans of colonial cities, can be characterized as a grid with a series of types of streets: the north-south ones, where we find the most important houses and the east-west ones, in which the houses (lots) are secondary in the plan, and through a square where the central institutions of rulers' social life are established.[71]

By considering the actual plan as it is today along with the one made in the last century, it is feasible to make a possible reconstruction of the original plan. In this reconstruction we have doubts about the quarters originally drawn as being situated north and south of the central square, where the built fronts are indicated defining it, and including public buildings.

It might be useful to think of points which Lisbon and some Brazilian cities have in common. In particular they share direct links with the sea, with a street pattern oriented by the water line and a built-up sea front. Despite their rural aspects, as manifested in the Vila Real Santo António, these Brazilian city plans reveal the beginnings of a new intervention in city planning, which was originated during the Pombaline reconstruction.

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[70] Padrão, C., 'Património Construido de Vila Real de Santo António', Poder Local, nº2, Set./Out., Editorial Camonho, Lisboa, 1981, pp.35-51.

[71] The division into quarters has a rural origin and is similar to colonial planning in Brazil. Throughout its urban plan one can easily see the 31 regular quarters (rectangles 23 by 54 metres approx.) into which the town is divided. Each quarter is divided into two on the longer side, and each of the resulting parts is subdivided into 10 plots. Therefore, there is a total of 20 plots in each quarter in which 10 are set against the other 10, and each plot measures approx. 5,4 metres wide by 11,5 deep. The plots are not totally occupied by housing because each house has a courtyard. The walls outlining each quarter were built of stone, and narrower spaces also marked out the courts waiting for future utilization, as was done in Pombaline Lisbon.

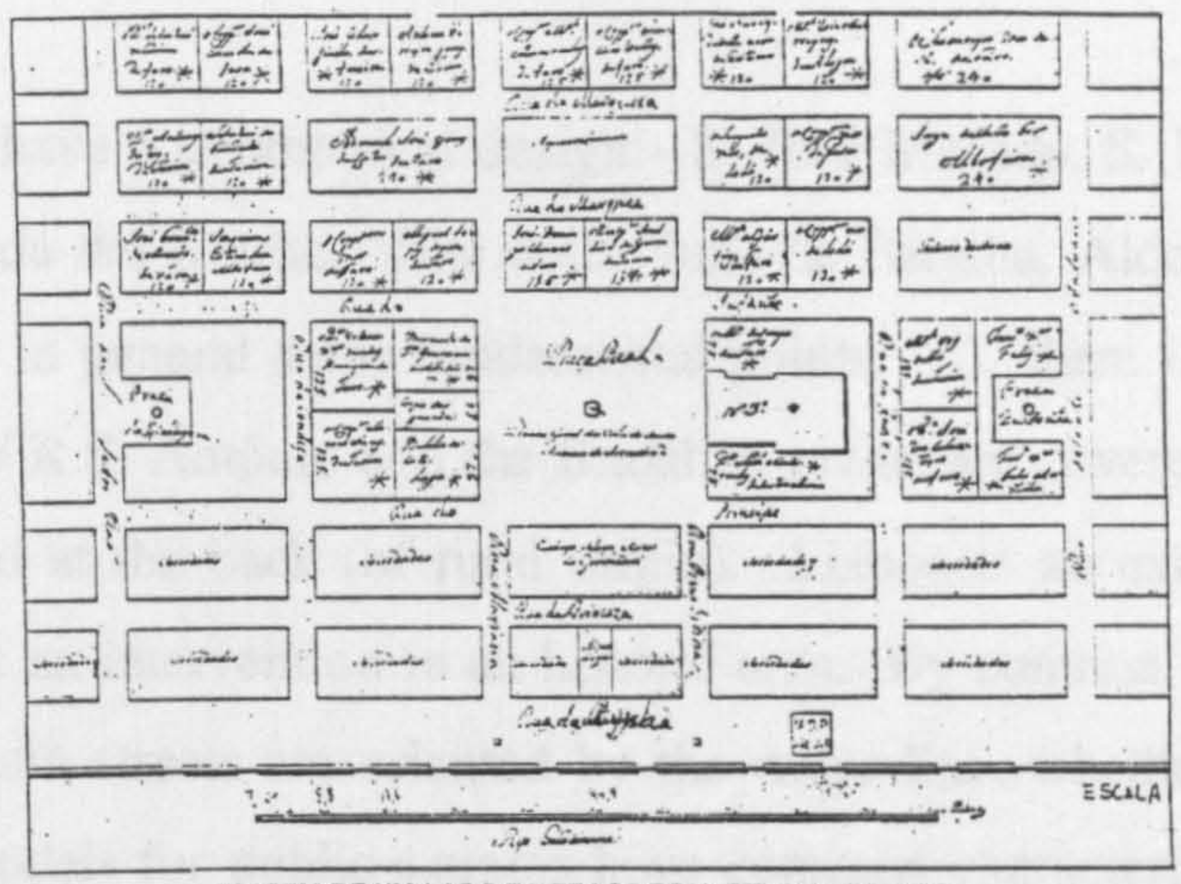

IMAGEM DE UM LADO DA PRAÇA REAL PELO SARGENTO
JOSÉ S. VASCONCELOS

Prospecto de hũ lado da Praça Real da Vª de S. Antº da Arenilha.

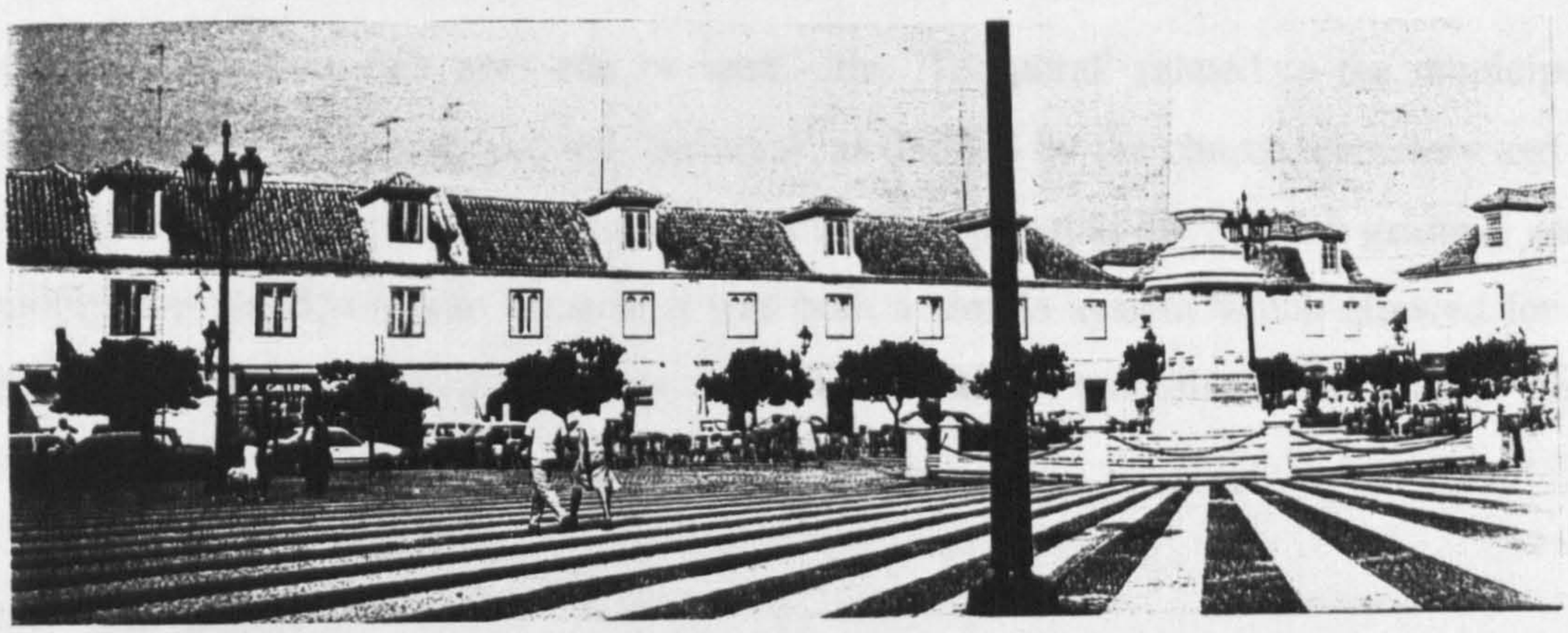

Figure 4.16 Vila Real de Santo António

The cities which have a geometrical design - S. José Maçada, S. Luigi Metropoli del Maraguone, Guarda del Serrito, Villa de S. João de Paraiba, Aldeia Maria, Bahia do Recife - all share in general some fundamental points: (i) there is a similarity in the type lots in that V.R.S. António and the Brazilian towns are covered by family houses with a court- yard at the back (of rural origin). Lisbon is an exception because the Pombaline plan is an intervention in an historic area. By contrast, the others are open plans; (ii) the main streets are oriented by the water line, whether it be by a sea or river; (iii) the models for public squares have common characteristics, one being the church's position in the middle of one side (in the sixth plan for Lisbon this also occurs).

In V.R.S. António, two axes can be seen - the 'Temporal' related to the municipal houses and custom-house, and the 'Spiritual' as defined by the church, cemetery and a chapel. At this point the most important idea to grasp is that the Spanish gridiron was adopted by the Portuguese because it was both a simple system which allowed for a quick solution to planning problems and it manifested 'Pombaline' control over 'the city'.

4.4. Conclusion

The main purpose of this chapter was to analyze the contemporary context of the rebuilding plan for Lisbon in the eighteenth century. To achieve this, it was useful to look at European and Colonial developments. In general terms therefore, the analysis undertaken of European cities indicated that none of them expressed the conceptualized ideal of the system of absolute monarchy, because the buildings were almost always placed in relation to the existing spatial system. Nevertheless they were fascinating compromises, which were able to influence the reconstruction of Lisbon as we shall see.

Three main ideas have arisen from the European city analysis:

(i) the revision of the old city layout by opening up new streets and implanting wide regular squares;

(ii) the addition of new sections to the city, mostly using the gridiron system of planning;

(iii) the creation of new generative elements through the construction of new residential areas that were to affect further development of structures in adjacent areas.

There is a mutual interaction between these cities, not only in their political and social aspects, but also in their aesthetic concepts. Up until the mid-eighteenth century, the city square seems to have been understood essentially as an incident in the urban framework, a form of relief from the pattern of streets, rather than a systematic ordering device in its own right.

The architectural regularity achieved in the French places royales is due to the uniformity of the facades on many individual houses. This was a new concept which started with the Place des Vosges in 1611, and which was followed by other places royales, representing the centre of a residential quarter. There the glorification of the king is represented by the equestrian statue placed on the central focal point. The French had realized that the long vistas and radiating streets of Rome could be transfered to the countryside, and executed there with a degree of freedom as they were not obliged to demolish existing buildings or build new ones. The avenues of a Baroque city, as in a theatrical design, incorporated an obelisk, an arch, or a single building to terminate the converging rays of the cornice lines and the pavement edges.[72] In Britain, directly influenced by the Places des Vosges, was the Covent Garden Piazza built in 1630. Later this pattern was widely adopted and the square had a good claim to be the appropriate expression of bourgeois society, based as it was on the grouping of individual houses, joined to form a more palatial whole. This is the case with the innovatory Queen Square, Bath (1725) in which interior plans were the entire responsibility of the builders, so long as the external unity was respected.

The London squares do not, however, adhere to the Baroque traditions of town planning in the same way as Stanislas Square in Nancy, or the Italian piazzas, or the French places royales. The residential square was much more successful in London than in Paris, probably because each of these cities also preferred a different type of house; in

[72] Mumford, L., The City in History, Peguin Books, Harmon, 1966.

London the individual terrace house, in Paris the apartment building. The intrinsic element of all London squares was a central garden of grass and plane trees. The objective was to provide privacy for the pedestrian or a pleasing prospect for the resident. The centre was a private space, even when it was laid out as a garden for the residents, but it was kept as a courtyard. It was, and still is, a space more to be looked at from the surrounding houses than to be used. The garden was enclosed by a fence and accessible only to the residents of the square, who have their own key to the gates. Another typical characteristic was the uniformity of the houses. They shared common building materials (brick, stucco or stone colour coordinated, for each facade), a common roof-line, and a common standard of taste.

In other cases too, such as the Circus in Bath (1760), the houses varied, but as they consisted of three floors with a basement and an attic, all behind a uniform facade, the total group displayed complete uniformity. The influence of the French places royales were also felt in Spain, especially in the Plaza Mayor of Madrid. For the Spanish, the Plazas Mayores played host to tournaments and bullfights, autos-da-fé and canonizations. This whole process of embellishment had two functions: one was the glorification of the king and the other the provision of an amenity for the people of the city.

In Britain the urban square surrounded by terraces of individual houses linked by uniform facades was a feature of London's mercantile society. Also in Edinburgh, in the New Town built in 1766 on a gridiron pattern, this same concept can be discerned, despite the fact that here the facades were not always planned to form a unified design. A central axis connecting the two squares is the structural element of its gridiron. Once again this was the pattern chosen for the expansion of the city.[73] Monumental design has given form to groups of civic buildings, and created private gardens. *'Law, order, uniformity - all these then are special products of the Baroque capital'*.[74] The law was necessary to confirm the status and position of the privileged classes; the order was

[73] Lewis Mumford has suggested that the long, straight street and the concept of uniform, repetitive facades may have been a response to the introduction of horsedrawn carriages into cities, which begin about this time.

[74] op cit, Mumford, L., 1966, p.420.

based on blood or neighbourhood; and the bureaucratic uniformity related to numerous devices for regulating and systematizing the collection of taxes. The Place Vendôme in Paris (1701), eighteenth-century Bath (1727), the London squares and crescents were all the work of speculators. Men like the Adam brothers, John Wood, John Nash and others were at the same time builders, artists and speculators.

The Baroque city entered a period of visible decorative improvements: squares, arcades, fountains and bridges were introduced and the work of urbanists was either on undeveloped land within and adjoining the city, or by introducing development inside the old fabric. One of its greatest triumphs was to organize space, making it continuous, reducing it to measure and order, having as its most important symbol, the avenue.

While such interventions were taking place in the cities in other European countries, Portugal, although knowing of these developments, had remained virtually isolated. As we have seen, the Lisbon of the sixteenth and seventeenth centuries remained unaltered until the time of King José (1755-1777), by which time it was overflowing its boundary walls, as it had been doing already for some years.[75] Portugal's concern was with colonization, devoting its attention to the construction of forts and fortified cities in accordance with the Italian treatises.

In fact, the Portuguese military engineers' knowledge of Roman city ruins in the Iberian peninsula was extensive (Tarragona, Mérida, Braga) and they also knew about Nimes, Turin and Zara. The modern French 'bastidas', Montpazier, Villeneuve-sur Lot and Sainte Foy-la Grande were all admired, as well as the Italian fortifications. We know that from the beginning the Renaissance city was planned in a geometrically regular manner. Alberti and Filarete were inspired by Vitruvius' concepts of the ideal city. Projects for broad squares, stately colonnades and straight thorough fares were very much appreciated, although based on radial structures, rather than gridiron, perhaps because Vitruvius was not explicit enough in his description of street patterns, and

[75] Bairro Alto dates from the sixteenth century and can be considered as the only residential improvement the city had.

because the radial system was fashionable in the Middle Ages.[76]

One also has no doubts about the 'Art of War' treatise by Machiavelli (1521) and so many other Renaissance notes written on the captains' inspiration. It is necessary to emphasise that most of the Renaissance urban interventions were Italian or French but almost all postdate the first American cities. It is therefore very difficult to prove which inspired which, but about the simultaneous cultural influence one can be sure. The Portuguese manner of city building was related to a conceptual approach, having an erudite base linked to an empirical attitude. For many years Lisbon and Oporto were the model for the colonial cities, including Luanda in Angola, Macao in China, Rio de Janeiro in Brazil, Goa in India. Lisbon was changing with the discoveries of new worlds, and the result of those changes would fix and form the basis of a model which would operate as an '*subconscious*' ideal for the colonial cities.[77] The strong, imitative approach based on the model, reflects sixteenth century Lisbon's influence as a great colonizing centre.

Also, the Renaissance ideal is present in the Portuguese colonial city in an adapted form, as a value, but combined with Medieval pre-existing elements and with functional necessities. Portuguese urbanism represents the survival of the Medieval cities and the strip system of planning into the Baroque age, although some efforts in the direction of more compact and regular formations were made in Brazil. Their urban qualities, while as a reference model was unusual, as it was based on spontaneous growth, originating around the church, castle or market place. The street patterns were the result of the integration of the houses, and not their regulated axes. The resultant formal organizations are sometimes close to an ideal type, under a Medievo-Renaissance plan.

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[76] In his 'Ten books on Architecture', Vitruvius wrote a few short chapters on the layout of a city. As his ideas were not clear enough, several interpretations were possible. Sometimes, streets at right angles to each other creating nine equal squares was the transmitted idea, and at others, as for the Renaissance planners, a polygonal city with eight major avenues radiating from a central point was the concept assimilated.

[77] Rodrigues, M.J., 'Olinda e Recife', Revista e Boletim da Academia Nacional de Belas Artes, 3ª série, nº1, Lisboa, 1979.

It is known that pre-conceived designs were often used to rebuild cities after a war, a catastrophe or when cities were founded as colonies or military centres. For this, the grid system was the most commonly used one, in fact it derives from the remote Ionian cities of Asia Minor of the seventh century B.C., and was used in Babylon, China and India.[78] However we cannot be sure if there were any connections or relations between them. The grid also was the method used by the Spanish for all their cities after 1523, based on the 'Indies Laws' of Carlos V. As a result their cities were almost all alike.

The gridiron plan may be lacking in originality, but it has some advantages. It allows an easy and unlimited expansion upon the same plan and provides a stamp of imperial uniformity to a whole colonial development. This same idea was first introduced in the Sierra Morena experiment which provided a basic model for the Spanish colonial planning system used throughout South America.

The organic plan developed without formal plans in strip formation on several levels thus originating different plans, looking disordered but very picturesque. It would be incorrect to contrast Spanish urban order with Portuguese urban disorder; it would be better to speak of different ways of ordering.[79] The rules which guided the Portuguese organization of space, time, and meaning are comprehensible because they are linked systematically to its culture. The Portuguese system was a survival of a medieval procedure which involved the building in America of copies of specific towns in Portugal. Since the Portuguese had to work in a tridimensional empire where the geographic, ethnic and cultural diversity was enormous, it would have been difficult to have a static system of planning, (like the one used by the Spanish in South America) which could be employed in different cultures. Also, the city itself is not limited to its initial form of nucleus, but rather, is the result of successive actions. It is dynamic, in the same sense as the colonial urban structure. However, one finds that the Brazilian city has its roots in Portuguese urban history whereas the Indian city, was inspired by the Renaissance ideal. This might be related to the fact that in Brazil the Portuguese

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[78] po cit., Benevolo,L., 1980, p.28.

[79] In the 'Oregon Experiment', organic order is defined *'as the kind of order that is achieved when there is a perfect balance between the needs of the parts, and the needs of the whole'* Alexander, C., M.S., S.A., S.I., D.A., The Oregon Experiment, New York, Oxford University Press, 1975, p.14.

were acting very slowly, whereas in India it was essential to move faster and create a sense of monumentality.

The Spanish city was a true product of the Renaissance, which represented a most radical departure from the system that prevailed in the mother country. Their colonization was centred on the city, from which civil, military and ecclesiastic authority maintained a tenuous purchase on the hinterland. It was organized around the central square, where the church and the residences of the social elite were located, in order to control the city and the land. Yet, it is only very recently that the chessboard model and the concentric layouts, are changing the plans and characteristics of many of the old Brazilian towns. Despite its importance in the history of city planning, the Spanish plan gained the capacity for improvisation upon the Roman and the Greek experiences.

Having debated the European and Colonial context, and determined the elements which might have influenced the Pombaline city, we now follow in explaining the eighteenth-century plan for Lisbon and discuss the analysis expressed above.

Chapter 5

Rebuilding the City after the Earthquake

5.1. Introduction

This chapter analyses the eighteenth-century rebuilding plan for Lisbon. It aims to study its architectural and urban requisites throughout its execution until its conclusion in the nineteenth century. The chapter starts with a brief description of the various plans submitted for the reconstruction (Section 5.2) and then examines the selected plan. (Section 5.3) Throughout its conceptualization we aim to study and understand its design and the composition's structural elements. The grid pattern, the hierarchical distribution of streets and facades, the introduction of a new construction system are all analyzed as part of the Pombaline plan.

The chapter then follows with the evolution of Lisbon's most important urban developments carried out until the present day in order to structure Baixa's requirements and difficulties. (Section 5.4)

Lastly the Pombaline plan for Baixa is discussed in conjunction with the analysis carried out in Chapter 4 in order to identify European and Colonial influences. (Section 5.5)

5.2. The rebuilding plans for Baixa

Three men, each of a different generation, formed the Marquis of Pombal's general staff to rebuild Lisbon. Manuel da Maia, Royal Engineer-in-Chief, had been trained in Vauban's methods of fortification. He was eighty years old and a seventeenth-century man. He wrote a text of approximately three thousand words followed by two longer ones dated 16 February and 31 March 1756. We find in his texts a debate of urban hypotheses, a proposal for architectural models and original observations on building

details, such as the safety of houses, and street hygiene. Colonel Karoly Mardel, a Hungarian-born engineer, sixty years old, and an admirer of the European Rococo style, was the group's second figure. The third was an engineer who was only forty years old, Captain Eugénio dos Santos, a symbol of the modern in Pombal's world.

Manuel da Maia, the chief strategist, was commissioned from the beginning to study the situation and to propose solutions. He had been the supervisor in the 'Casa do Risco' (design-office) since 1756. Appendix 2 includes a selection of Pombaline decrees and extracts from Manuel da Maia's dissertation.) His dissertation in narrative style allows one to guess at much of the design produced, from the new layout of roads to the austerity of the architecture, the definition of hierarchies and the organization of solutions.

What was wanted was a city illustrative of the new rationalism, but it had to be built in a hurry. This pace inevitably meant some falling back on measures of compromise. The models that were used for reference rejected Utopia in favour of compromises founded on certainties. Manuel da Maia said *'To create a city from scratch without paying heed to anything but itself, uniting it to another ancient one, will be more fun than work' given that 'the correspondence between Ancient and Modern is the point where the greatest difficulties are encountered.'*[1] This shows a concern with making the new city fit into the shell of the old one and it can be seen in the adopted solutions where the medieval constructions are integrated in the new plan.

Manuel da Maia put forward four solutions:

1. Rebuild the city as it had been. That meant the exact reconstruction of the buildings from their own debris.
2. Reconstruction of the buildings to the original height, and widening of the streets.
3. Demolition of the destroyed districts, levelling the valley, using the debris for this purpose; and laying out a new street pattern; rebuilding the houses with fewer storeys.

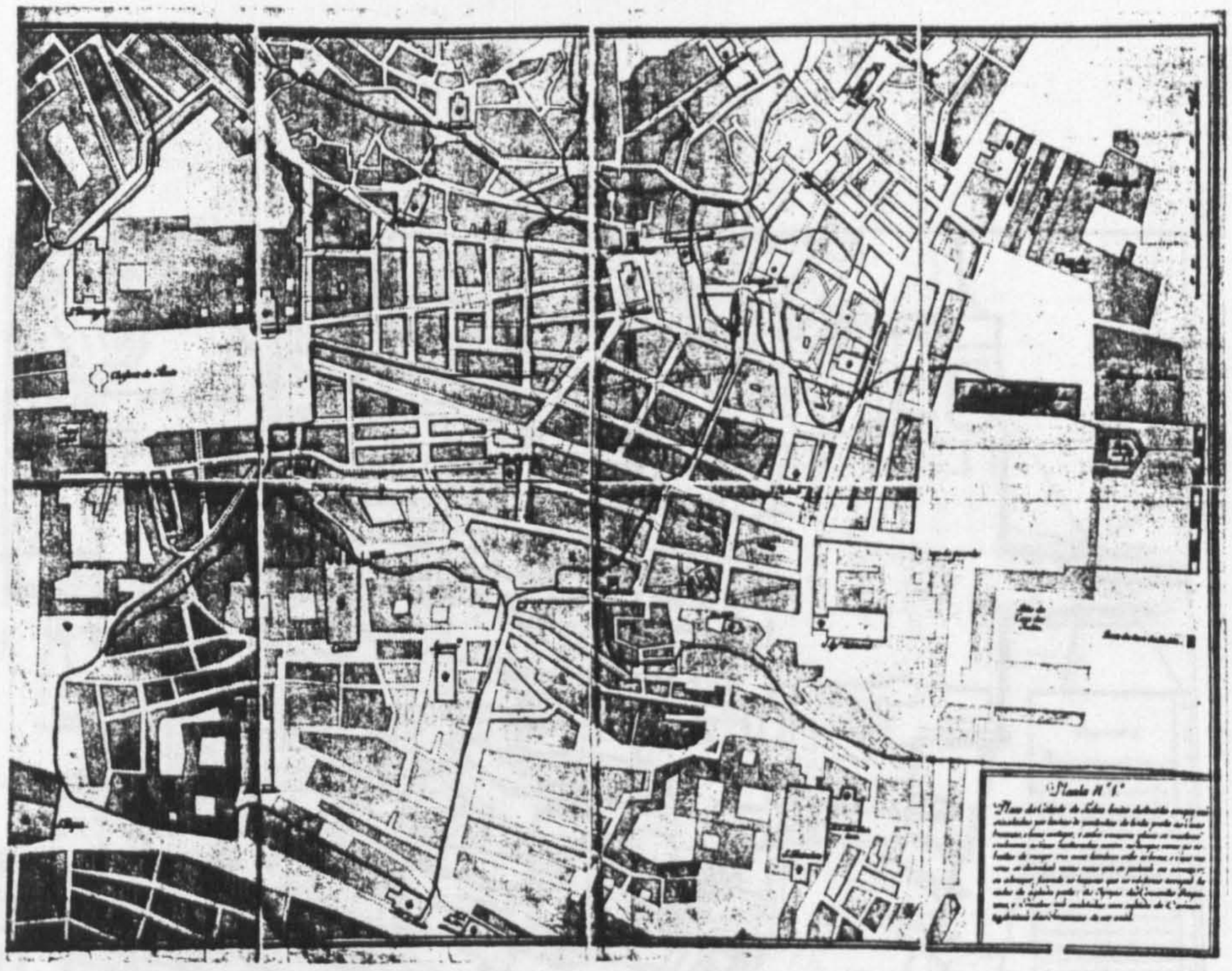
[1] Manuel da Maia's dissertation.

4. Abandon the ruined city and build a new one several miles away, with Belém as the centre, allowing the former landlords to erect houses without any official supervision.

Pombal chose the third, so that the Baixa was completely demolished and levelled, and the gradients of the steep western slopes were reduced.

Maia da Maia set up a competition between his architects, commissioning six teams to study an equal number of solutions, with different conditions fixed at the outset, for an area of 212 thousand square metres (560 north-south x 380 east-west) excluding the two squares. The whole area was about 630 thousand square metres. Six plans were produced at the 'Casa do Risco das Obras Públicas', a special office set up for the reconstruction project. The effect of military discipline is clear in the proposed solutions, and in the construction and the technological process employed.

All the six plans show design regularization as a characteristic and a common intention of establishing the connection between the two major spaces, the Terreiro do Paço and Rossio. Plan Nº1 by Gualter da Fonseca and Pinheiro Cunha, (1755) (Figure 5.1), and Plan Nº2 by E.S.Poppe and V.D.Poppe (1756), had as objective the regularizing of the network of roads that existed before the earthquake.(Figure 5.2) The first copied the main characteristics and regularized the "L" of the Royal Palace, on the side facing the Cathedral (Nova dos Ferros street) and the other towards the Rossio (Ourives do Ouro street). The latter was intended to make a direct connection between the Rossio and the Royal Palace. It can be seen that Terreiro do Paço and Rossio are primary elements acting as catalysts in the drawing of options. They are eventually the start and the end of all the Pombaline plans. The plan confined itself to straightening and extending the existing roads, thereby establishing a continuity that derived from the elimination of blind alleys. The second plan was able to create two other small squares through the introduction of another street connecting Terreiro do Paço with Rossio. These new squares would have had a regular form and resulted from a diagonal slice in each of the four quarters corners. This would have created a break in the long streets which join the two main squares.



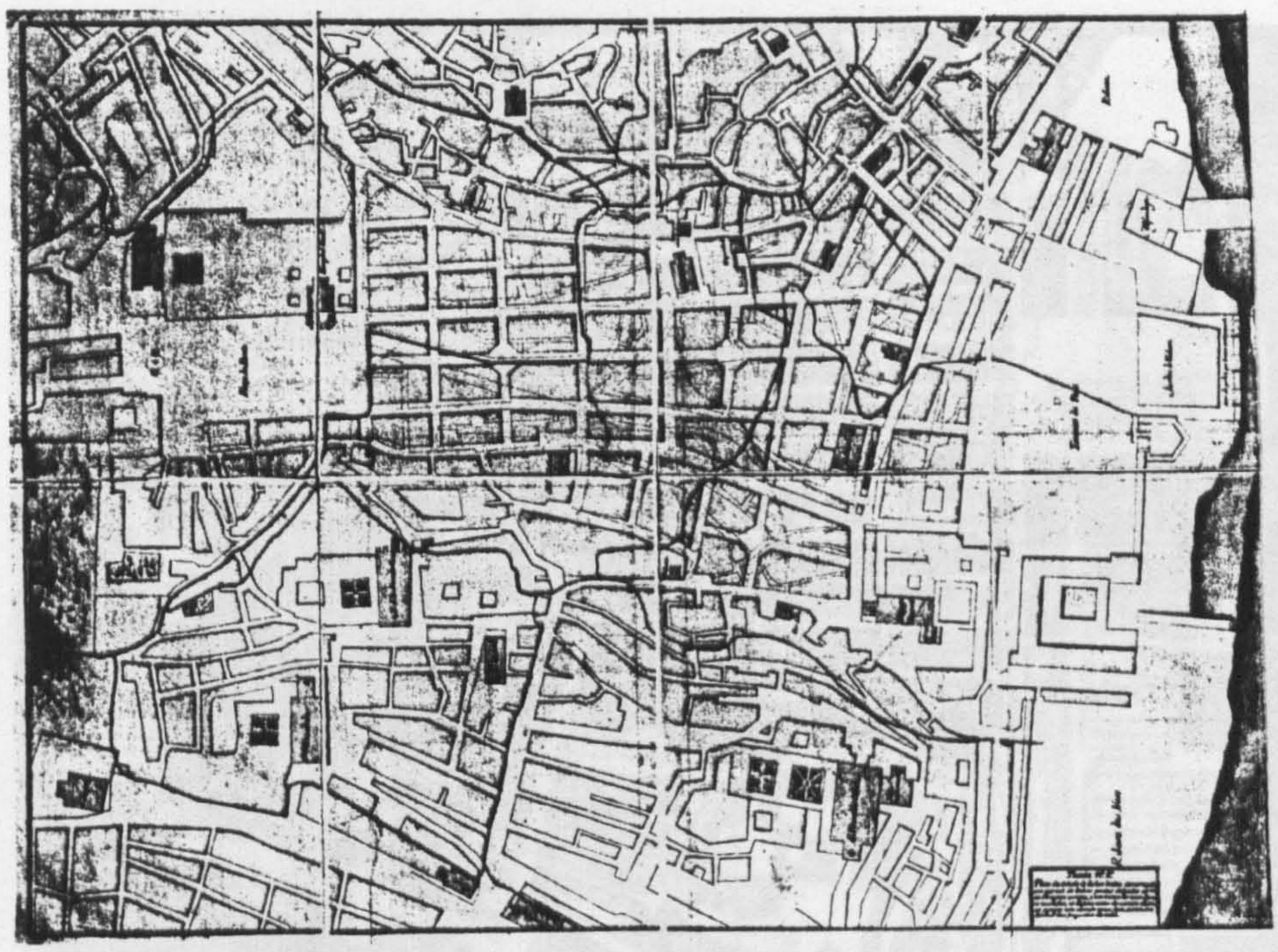
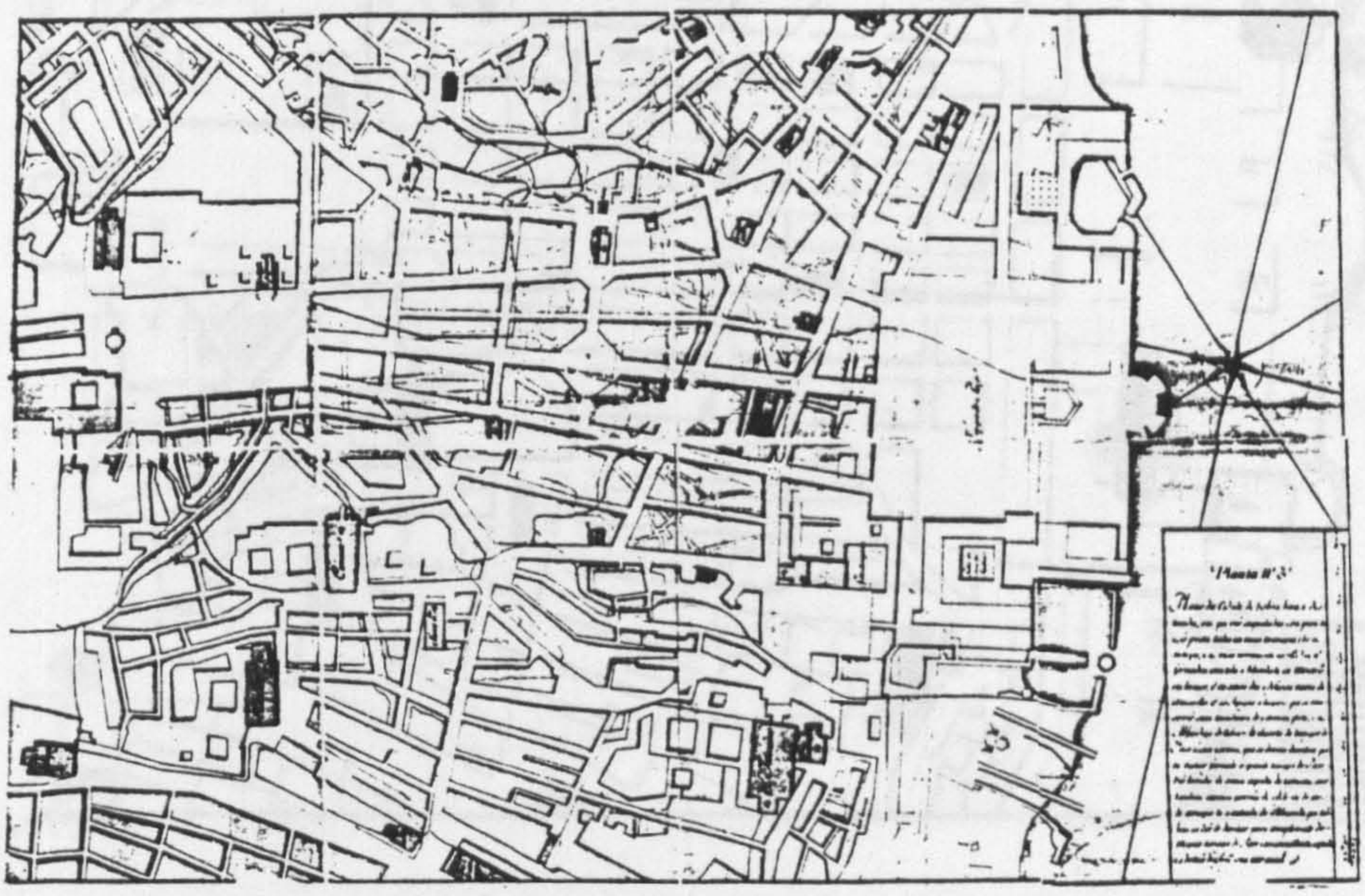


Figure 5.1 Plan nº 1, by Pedro Gualter da Fonseca (840x640 mm)

Figure 5.2 Plan nº 2, by Captain Elias Sebastião Poppe and José D. Poppe (860x640m)



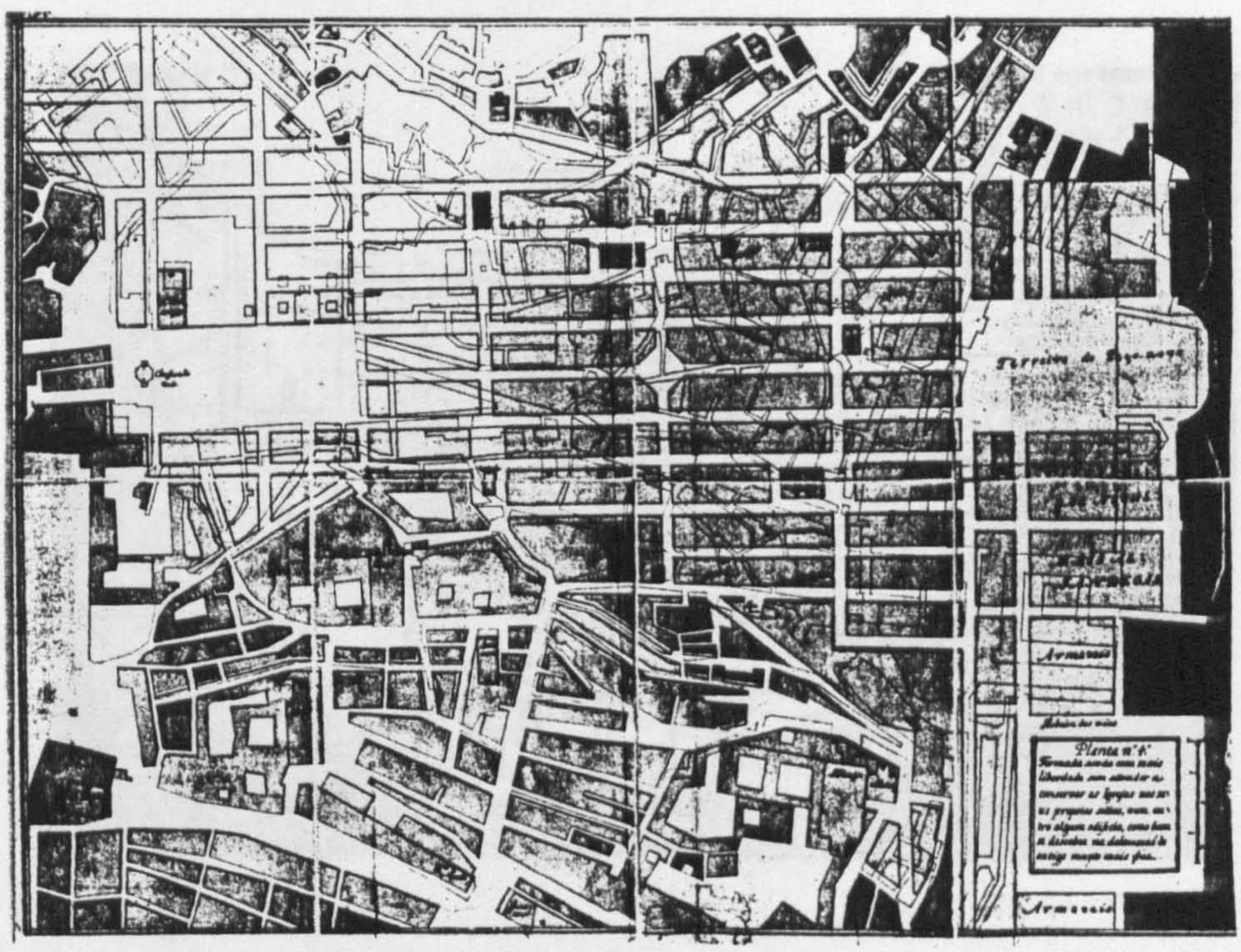
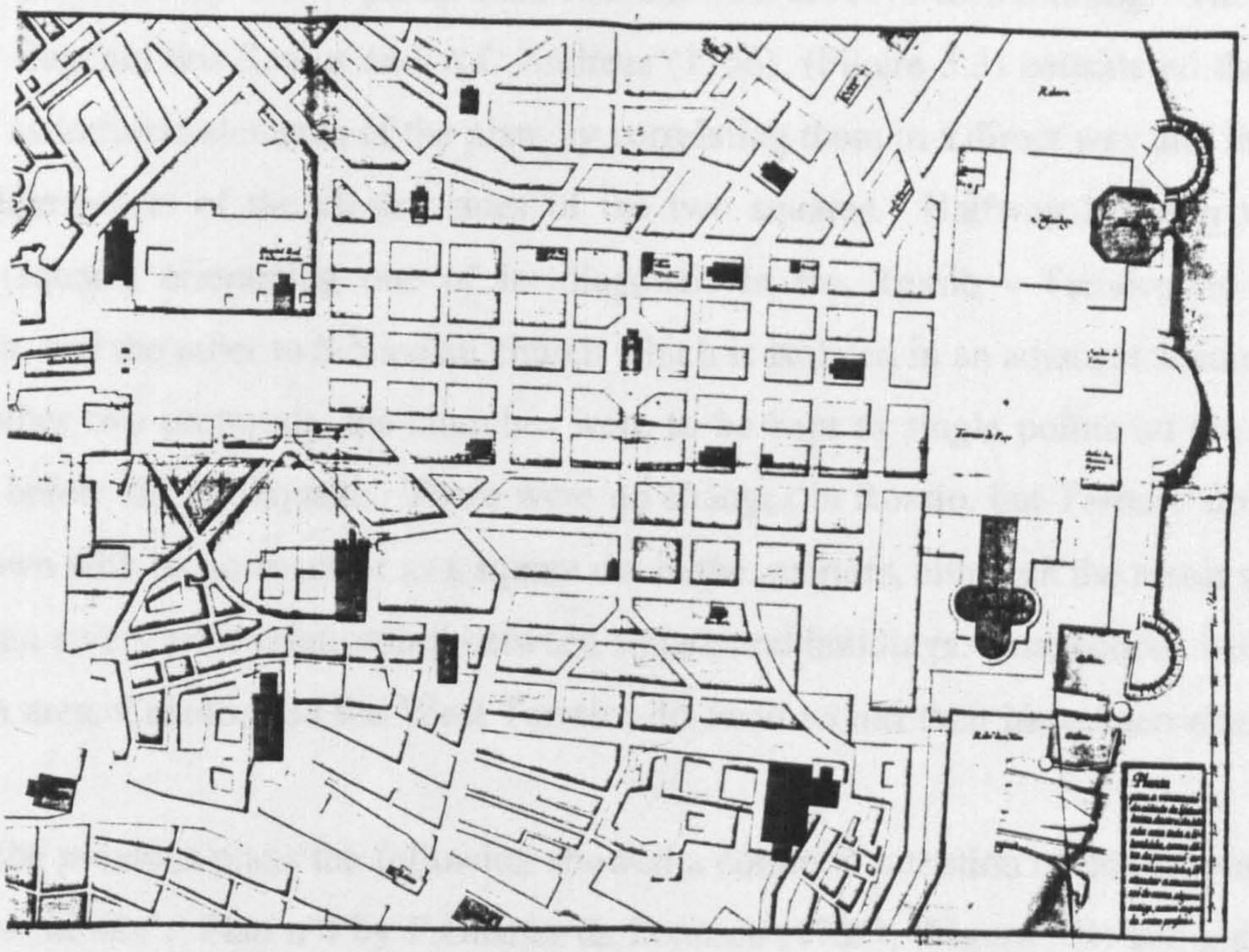


Figure 5.3 Plan nº 3, by Captain Eugénio dos Santos e António Carços Andreas

Figure 5.4 Plan nº 4, by Pedro Gualter da Fonseca (800x610 mm)



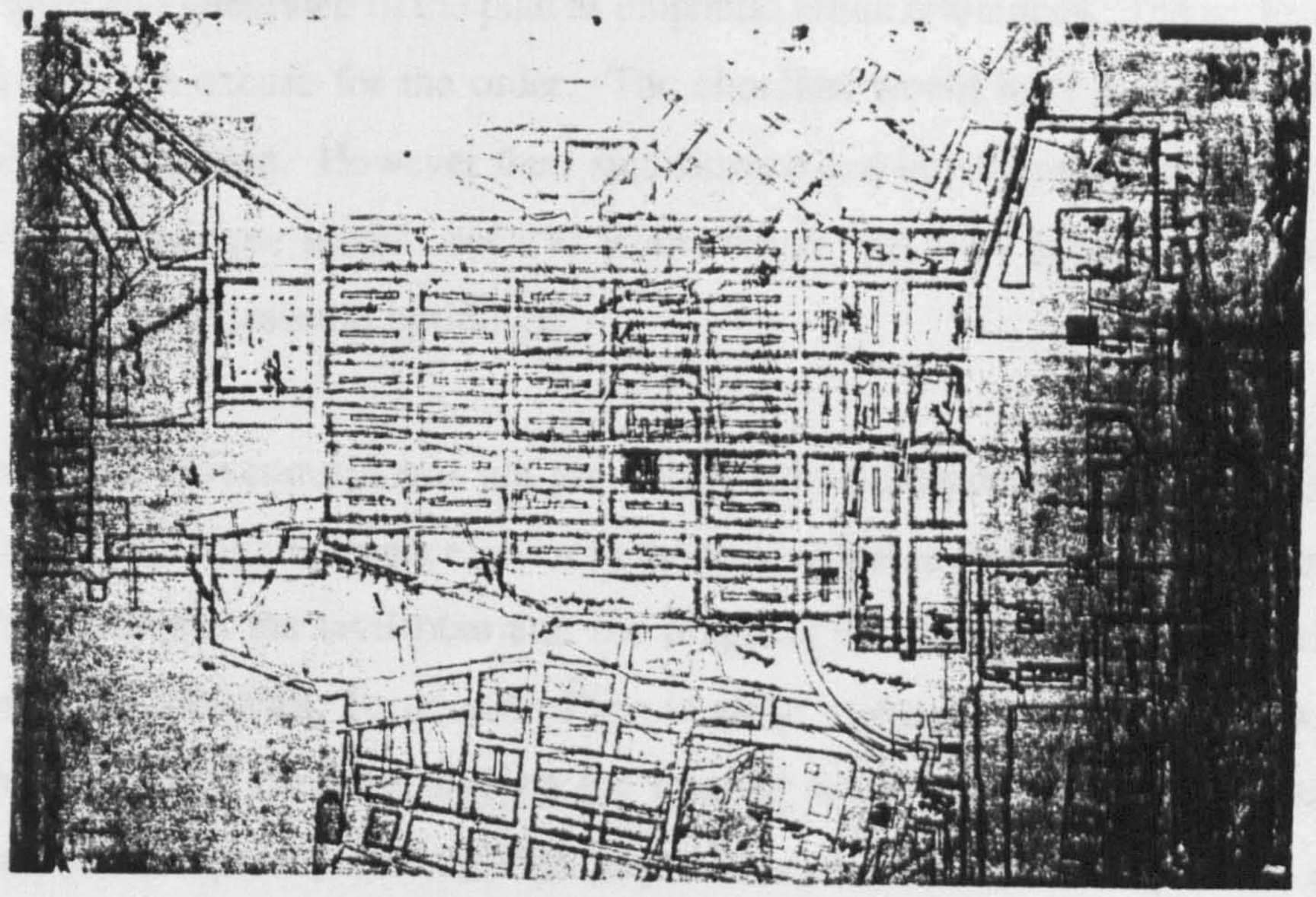


Figure 5.5 Plan nº 5 or 6, by Captain Elias Sebastião Poppe (870x640)

Figure 5.6 Preparatory Plan for the final Proposal

As well as the two previous plans, Plan Nº3 shows a creative restructuring. The third plan by Eugénio dos Santos and A.C.Andreas (1756), (Figure 5.3) considered the two squares as intrinsic elements of the plan, by correlating them in a direct way and linking the middle points of the closest sides of the two squares. Halfway between was a square (square) orientating one of its diagonals in the Rossio - Terreiro do Paço direction, and the other to S.Nicolau church which is isolated in an adjacent square. As in the other two proposals, the churches were to be kept as single points on the same sites as before the earthquake. There were no changes in Rossio, but Terreiro do Paço was shown with its north angle as a square cut in the quarters, although the result would have been a very poor relationship between square and buildings. Connections between the high area, Chiado, and the West Terreiro do Paço would then have been made.

Unlike the previous plans the following showed a common intention of not keeping the churches 'in situ'. Plan nº4 by P.Gualter da Fonseca (1756), (Figure 5.4) and plan nº5 or 6 by E.S.Poppe (1756) (Figure 5.5) are directly related as is seen by the unity of the quarters or by the squares, and also by the way in which the extremely precise road system breaks up the geometric plan. Now, and for the first time, the religious buildings were re-sited and integrated in the plan as emphatic urban references. The ecclesiastical system is here an excuse for the order. The churches would have been the basis and focal points of the plan. However their significance and importance is only an illusion if we think of Baroque models such as Rome where the focal points had remarkable influence on the ecclesiastic buildings.

In this plan, this last concept was not present, or it had disappeared. The conservation of the Rossio, and the importance given to the Patriarchal in Terreiro do Paço, resolved the conflict between the civil plan and the religious one, the latter being given more importance. In this plan, Terreiro do Paço is close to the river although the square's permeability towards the river and the big internal space in the Patriarchal creates an interesting public space in Terreiro do Paço. We can consider this space as a filter between the city and the river.

In Plan nº4 once again the two squares were related but now with similar dimensions. Here, the Portuguese colonial experience is apparent in the restructuring of the urban network. Moreover, the designer's knowledge of the *'Forma Urbis'* of Renaissance models is also very clear in the overall architectural unity of the plan. This unity is based on the conceptual process that established the connection in the plan between its elements - squares and quarters.

E. S. Poppe (1756), produced the fifth plan. (Figure 5.5) This is the plan that most closely resembles what was actually executed, and it is also the most extensive in the area it covers. (See Figure 5.6) In the proposal, the affinity of the building structure with the hierarchical plan mirrors the economic structure that existed in Portugal and provided its social order. The two squares, although related, had lost the possibility of becoming elements of the global plan. The Terreiro do Paço manipulates and compromises the architectonic unity of the plan. There was also the desire to redraw the West river area, and in the Largo Corpo Santo and S.Paulo we have the best expression of the colonial style of urbanization (as seen in Brazil) of all the squares in Lisbon and Portugal. The plan involved a complicated network of roads, perpendicular and parallel to the river, which resulted in long and narrow blocks. The lay-out is polarized by two squares, the Comércio square, old Terreiro do Paço considered as a monumental gate to the city and Rossio as the new urban 'Forum'.

5.3. The chosen plan and its execution

The city was rebuilt for the new middle class, as was clearly expressed in the new Square of Commerce, where the Royal Palace also was located, giving it the name of 'Terreiro do Paço'. Eugénio dos Santos used a system of land registration in which the limits between public and private were very clear, by establishing *'quarters'* which would be divided into lots on the basis of criteria of proportion and proximity, with the transfer of proprietors from the old fabric to the new grid. This scheme was suitable for the establishing of activities, both because of the simplicity of the scheme of distribution and because of the dominant type of houses for rent.[2] Blocks with

[2] The present change from housing to offices is due to this flexibility.

continuously uniform facades were planned, covering an area 350x500 m, excluding the three squares. The block dimensions vary throughout the plan especially at its perimeter, but in the central area they measure 72x25m and 33x25m.

In his first proposal for Baixa, Manuel da Maia presented very simple two-storey buildings (with arcades or without). This was the best solution because of their low height, but in order to make them more profitable, he decided to have buildings with three floors. The designs however were not new. The first idea was present in Espichel Cape, dating from the beginning of the century, in the Rua Nova dos Ferros and on the facade of Todos os Santos Hospital.

The first floor, that is to say, the one above the ground floor, was to be higher, and each window was to have a balcony. The total height was fixed at 24.40m. The distance between buildings in the wide streets is 14m and in the narrow 8m, the space between the backs of the houses is 4m. About the extremely narrow inner yards E. de Groer - wrote: '*through the point of view of the interior distributions the ideas of the eighteenth century seem to us very strange: the bedrooms were often built without windows, in the middle of the apartments, in order to isolate them from street noise*'.[3]

Masonry was used to frame windows and for pilasters.[4] The space between the windows is almost the same as their width. On the first floor, French windows are used with decorated wrought iron railings. The second and third floor windows are smaller and differ from the others in that they are both ornamented by a small key stone and the lintel is curved. The cornice is extremely simple. Above it are the double Germanic roof supports, at the first level, attic windows with a small roof without pediment, and on a second level dormer windows.

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[3] De Groer, E., 'Lisbonne exemple d'urbanisme au XVIII siècle', in 'La Vie Urbaine', 1936.

[4] This is a Serlio influence, through Terzi drawings, in which the facade has a strip at the balcony level on the first floor (another one between the first and second floors) and a second strip close to the cornice pretending to form a capital.

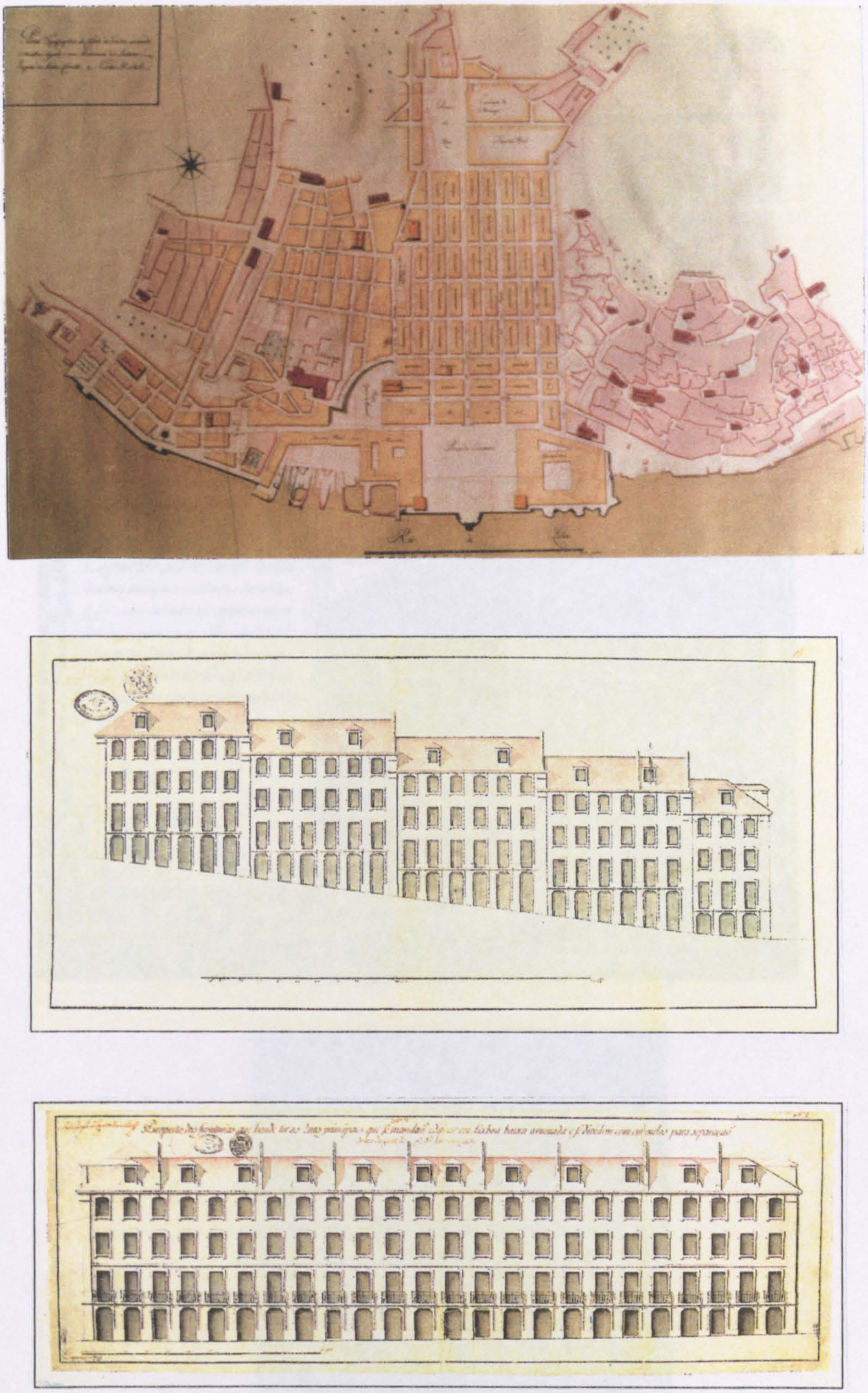

Figure 5.7 The rebuilding plan and the facade elevations

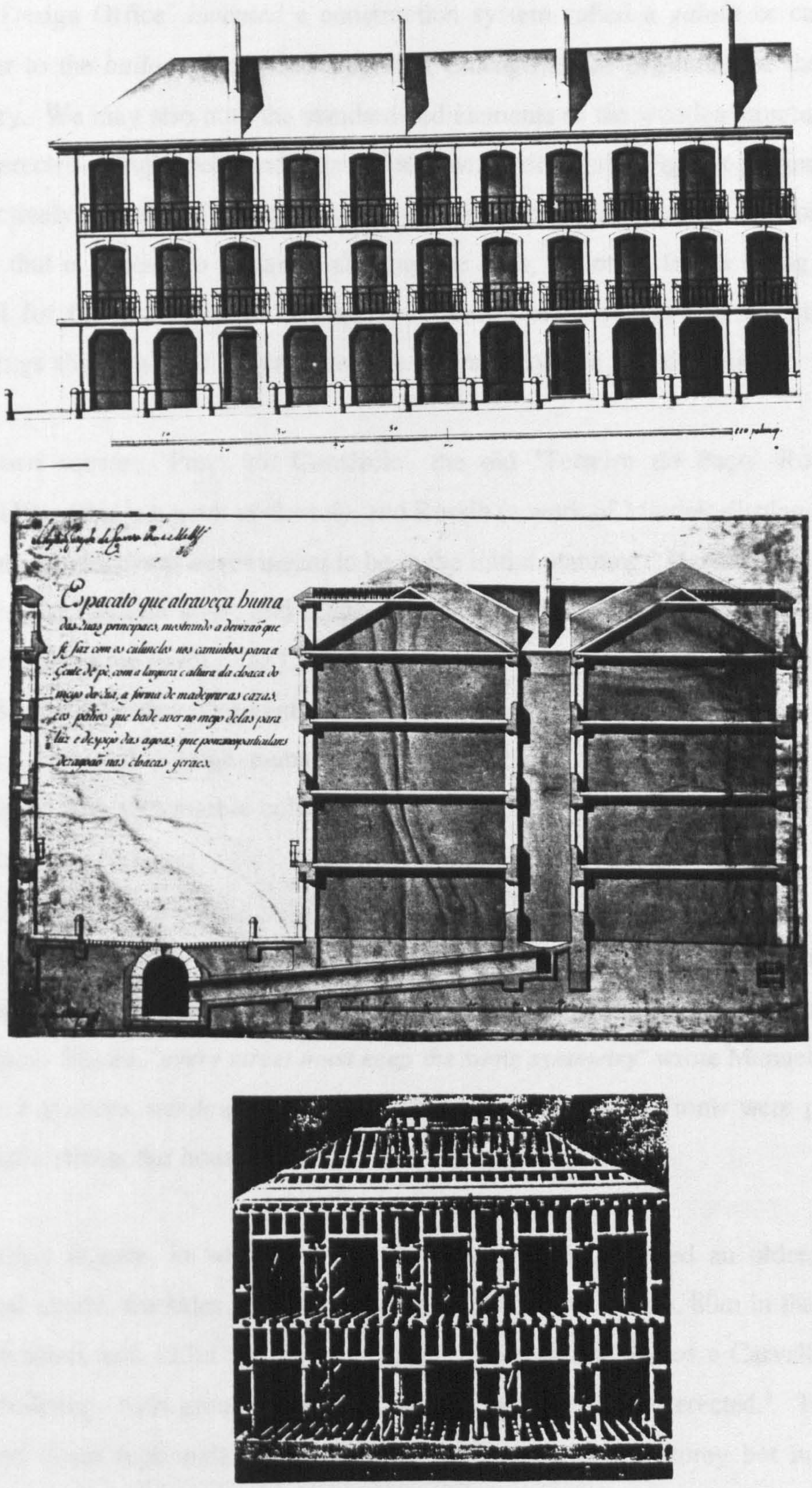

Figure 5.8 Buildings elevations; section of two buildings; the 'gaiola' framework

The 'Design Office' *invented* a construction system called a *gaiola* or cage, almost similar to the *balloon-frame* introduced in Chicago at the beginning of the twentieth century. We may also note the standardized elements of the wooden structures. These were erected at high speed and then covered with brickwork. Figures 5.7 and 5.8 show, respectively the rebuilding plan, and two drawings of the facades, the first for a gradient street that is applied to the areas abutting the hills, the other facade being a standard model for the main central quarters; a variation of a facade, and a section of two buildings showing the light-well and the drainage system and the gaiola.

The two squares 'Praça do Comércio' the old 'Terreiro do Paço' Royal Square 177x119m (this is a work of Santos), and Rossio (a work of Mardel) display a utilitarian monotony which was never meant to be in the initial planning. Mardel liked the pitched roof in the German style, and Santos liked to relate the amount of decoration to the importance of the street. The Comércio Square was occupied by the Ministries, creating a civic and administrative centre. On the river side the termination of the square is a stone quay with a large embarkation platform and stairs plunging into the water, decorated with two marble columns (as an image of Venice) to anchor the boats. (See Figure 5.9)

In the centre of the square a statue of King José I was placed, and on the north side a triumphal arch was erected (1873). In the main street, Augusta Street, which takes us to Rossio Square, '*every street must keep the same symmetry*' wrote Manuel Damaia, '*in respect of doors, windows and height*', and continuous block fronts were projected. In the main streets the houses had three stories with mansards.

Comércio Square, in which the sides measure 180m, replaced an older, irregularly shaped square, the sides of which measured 270m in the north, 80m in the east, 235m in the south, and 115m in the west. Here, Eugénio dos Santos e Carvalho proposed that buildings with ground floors and mezzanine porticos be erected.[5] The first and second floors (optional) over the arcade had a mezzanine storey but in the chosen scheme, with a floor over the arcade, the Baroque influence is clearly present both in

[5] On the ground floor Manuel da Maia used a rusticated treatment similar to the one of Covent Garden.

the floor stratification and in the horizontal and vertical demarcation of the elements of the facades. Seventy-eight arches were projected and built in this square; however their distribution differs from the project to the construction stages. In the project stage the north side had 24, and 27 on the other two sides respectively west and east: however only 22 were built on the north side and 28 on the others.

It is important to note that King José I's statue is not placed in the geometric centre of the square, but in the centre of a triangle drawn with the vertices of the towers and the Augusta street arch. It seems that through this subtle positioning of the statue in the square an equilibrium was achieved, by replacing its the unbuilt south side. Figueira square is inserted into family models that are created as empty spaces. It is indeed a square with colonial Portuguese traditions as discussed later. Its formal facades have a characteristic uniformity.

Rossio Square was a rectangle with sides of 180m (east-west), with the Palace of the Inquisition, the Dominican convent and the Todos os Santos Hospital to the north, all established in the fifteenth century. For this square of 16 thousand square metres, Carlos Mardel created a model which consists of a french window between two sash windows thus emphasizing a dynamism by the play of pilasters joining or separating the unities. Over the first floor he used simple sash windows. For the roofs in Rossio he used a different timber structure - the German double roof, permitting large attics[6] (See Figure 5.10).

Another square was opened, Figueira Square, for the purpose of selling vegetables and fruit, no longer allowed in Rossio. The public walk was designed by the architect Reinaldo Manuel and begun in 1764. It was the first public garden in Lisbon, and the first to be designed by an architect, except for Queluz. The public walk, in a way, was an attempt to compensate for the rigidity of Baixa, by adding a note of relaxation and informality. Commerce Square had a very slow evolution; even as late as 1765 very few buildings had been erected.

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[6] In 1765 Gorani, an Italian traveller said about Rossio: 'It was one of the most beautiful Lisbon squares... Almost all the houses surrounding have nice shops'.

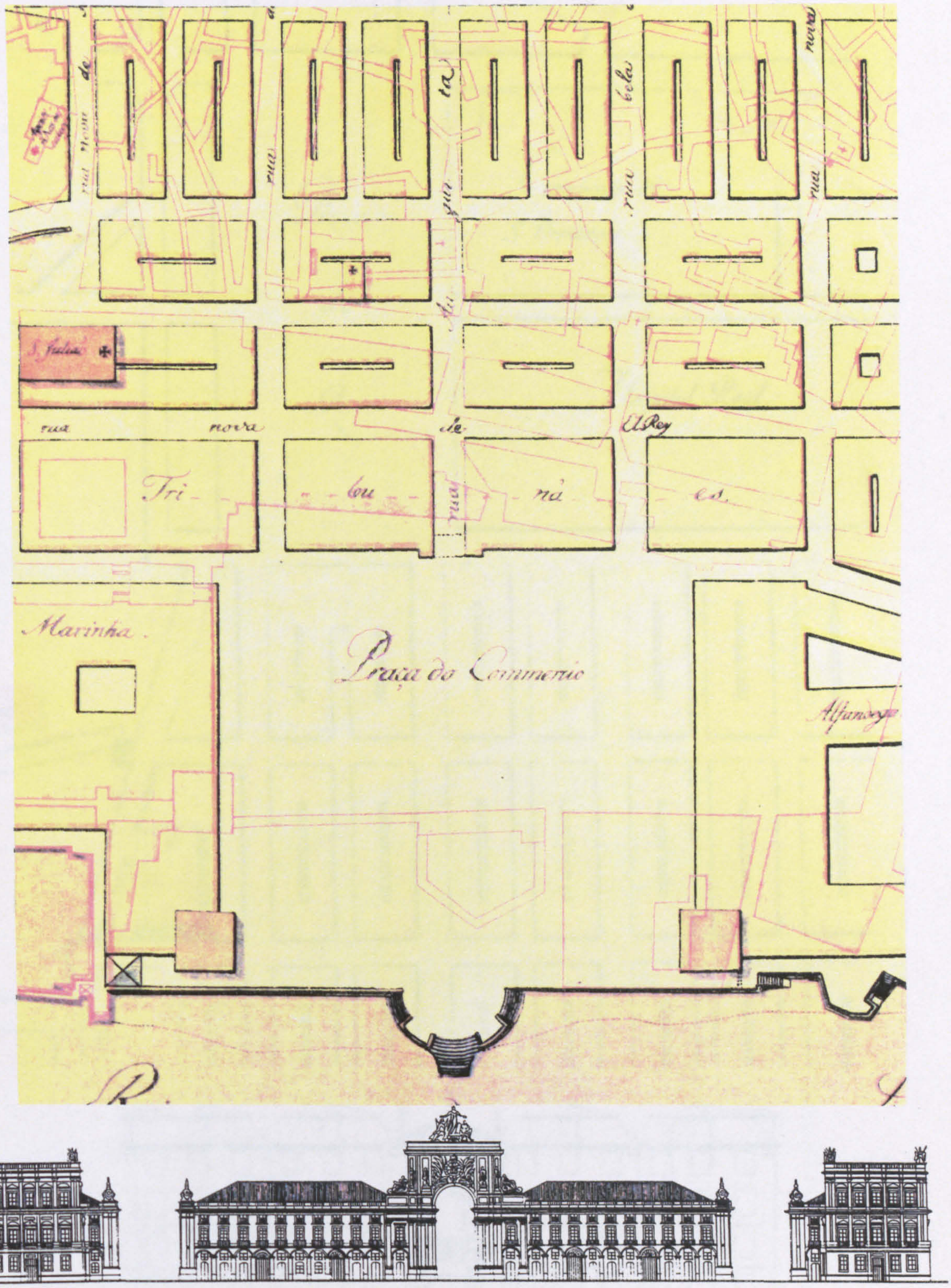

Figure 5.9 Sectorial enlargement of the rebuilding plan, the central area and Comércio square; Comércio square building elevations

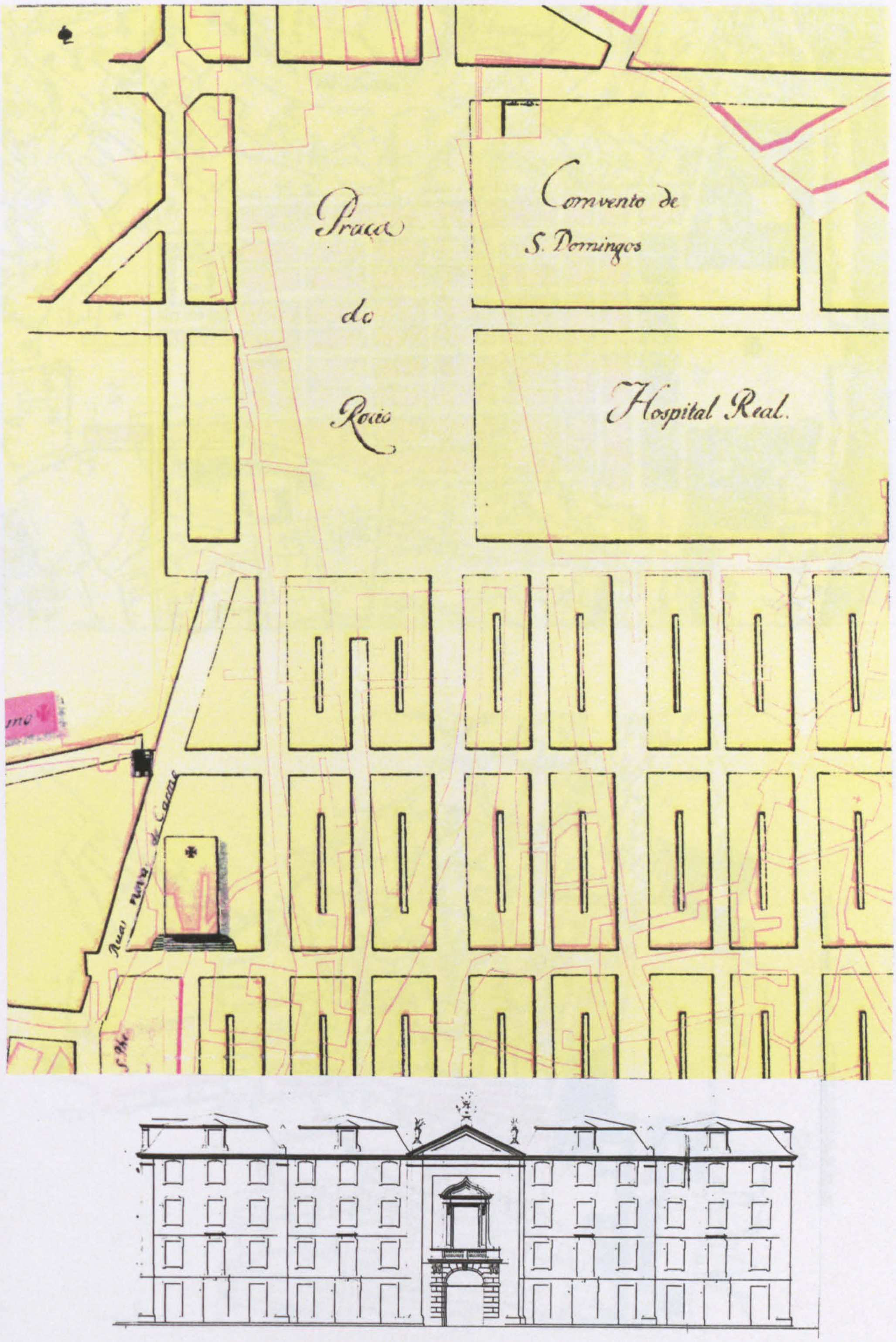

Figure 5.10 Sectorial enlargement of the rebuilding plan, the central area and the Rossio square; Rossio square building elevations.

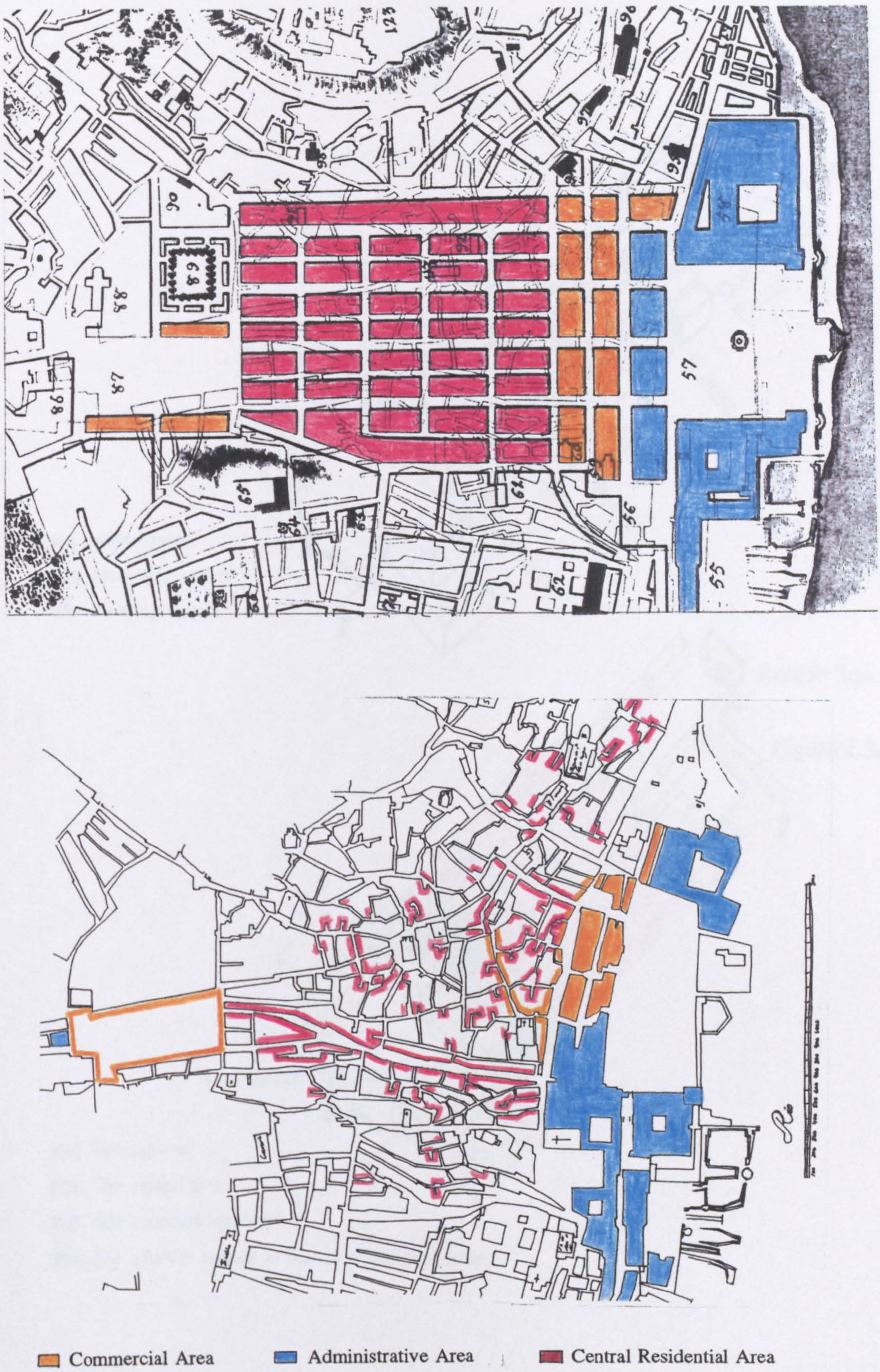

Figure 5.11 Distribution of uses in medieval Lisbon and in the proposed plan for Baixa

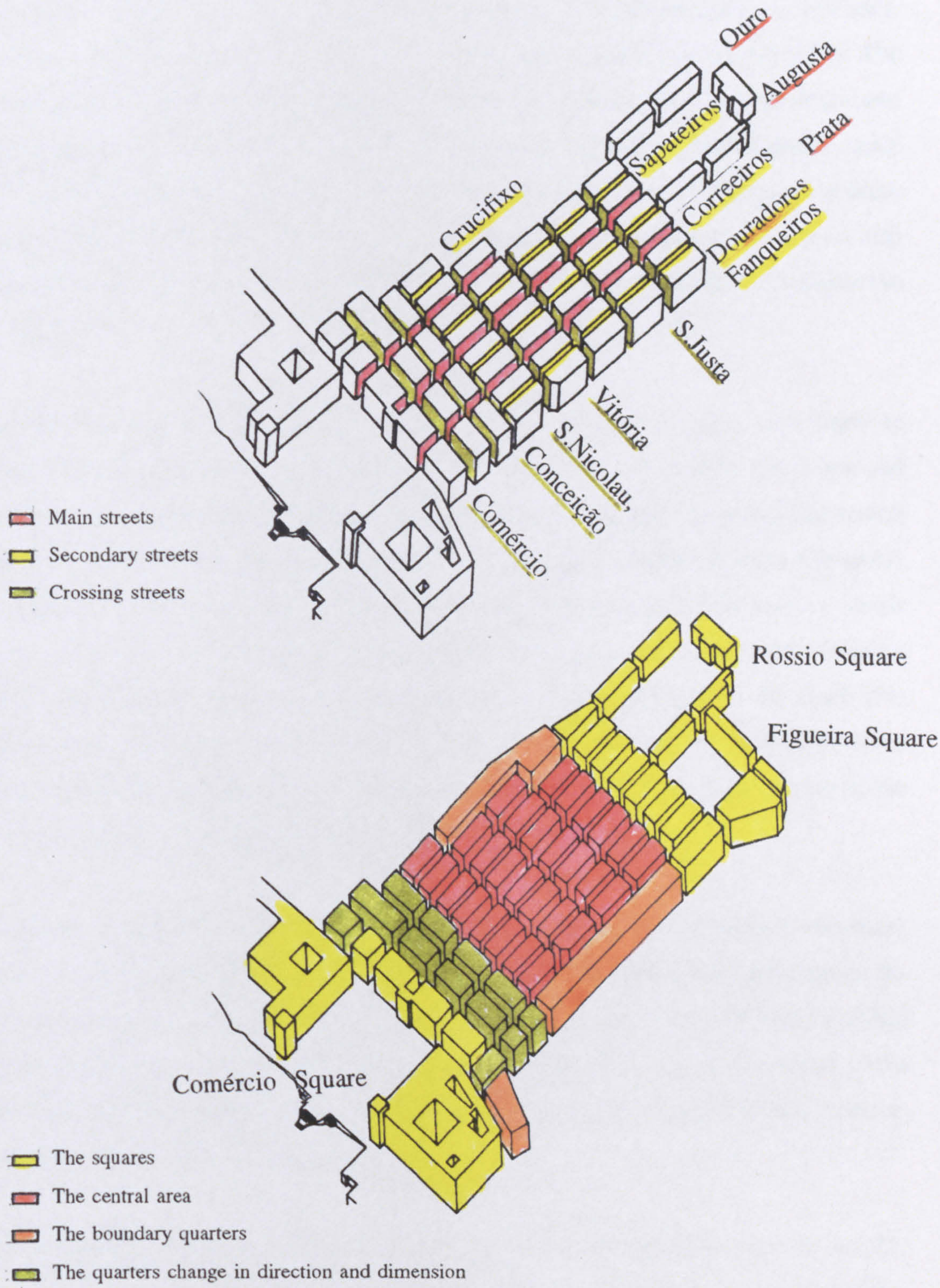

Figure 5.12 Analytical study of Baixa structural elements

Pombaline stands as a conceptualized plan for a damaged area. It considered as important to transfer to the new plan the old medieval community spaces, and uses, therefore it has to be understood as an integrated system or plan. (see Figure 5.11) The system relates mainly with two squares: Terreiro do Paço and Rossio which became new regulated spaces. From Terreiro do Paço (which now is a square in shape), three main streets open, structuring the north-south movement of the grid. Only two of these streets connect with Rossio square, and it is these that determine the width of this square, through its alignment and the dimension of its minor side (which correspond to the distance between the two mentioned squares). (see Figure 5.12)

Augusta Street should be considered as the plan's symmetrical axis, as it starts in Terreiro de Paço as a main street (this quality comes from the street's dimension and the inclusion of the monumental arch) but approaches Rossio in a secondary and lateral way. Ouro street is parallel to the latter and was intended to relate the west side to the two squares. For Rossio, another street was projected arising from an arch which stands in the centre of its south facade. It should be considered as the main street emerging from the square. It is interesting to note the existing analogy between the south side facade of Rossio and the north side of Terreiro do Paço as both are crossed by three streets and both have an arch in a central position. The only difference relates to the scale and subsequently their importance and meaning in the plan.

The three main streets, Augusta, Ouro and Prata determine the north-south direction; however, another main street established (through its perpendicular position to the previous ones) the east-west direction. This is Comércio street (the old Nova d'el Rei street) which goes contrary to the latter and focuses attention on the Cathedral. This new direction has a rational and practical reason as it relates to the river and connects two river sites, Belém and Poço do Bispo.

The system is completed by two other types of streets, the secondary type 'B' or 'C'. In type 'B' are included, S.Julião and Fanqueiros and in type 'C' are included, Sapateiros, Correeiros and Douradores Streets. These three last, although following the main direction, are interrupted by the east-west grid. The last group of streets are the transverse ones and include, Santa Justa, Assunção, Vitória, and S. Nicolau streets.

Pombal was an innovator in many ways. He introduced the public primary school and created a state bank; he decreed the abolition of child slavery and tried to raise national production. But when King José I, his protector, died, a reaction against the dictator arose, ending with his expulsion in 1779. His reconstruction is a very clear example of how complete control over the available resources made a comprehensive spatial organization possible in a very short time, by developing an urban structure able to support economic activities, starting from a rectangular grid. Manuel da Maia, Eugénio dos Santos and Carlos Mardel reveal a perfect understanding between the plan and the architecture. For the city, it was the main transition into the nineteenth century. It was in the city centre that the process of concentration took place, enhanced by the municipal lighting and transport systems. During the late eighteenth and early nineteenth centuries Lisbon planned many embellishment projects such as arcades and glazed roofs to the main streets and several iron and steel viaducts connecting the low city with the hills. However only one of these projects became a reality in 1902 with the opening of the Santa Justa-Carmo elevator.

5.4 Nineteenth and twentieth-century changes

In the eighteenth century, the nobility of Lisbon had Rossio Square as the only public space intended for promenading and displaying their new fashions. However, it was not a pleasant place, as it was full of hordes of beggars and gypsies, and the buildings offered no attractions. Additionally, the Royal Hospital was associated with pain and suffering, as was the Inquisition Palace, in which were the cells of those who had been sentenced to death. Nevertheless a 'Public Promenade' (Passeio Publico) was built under the supervision of the architect Reinaldo Manuel, from an original idea of the Marquis of Pombal. This Promenade was a garden situated in the old 'Hortas da Cera', an area flanked by two convent walls each possessing fifteen windows, the main door of which looked out over Rossio Square. Figure 5.13 shows the 'Public Promenade' on the 1785 and 1855 plans of Lisbon. It covered an area just above Rossio Square, up to the present junction of Pretas Street (East) and Alegria Street (West). It was not a large promenade, but nevertheless a very pleasant place of refuge, with its box-tree lined paths and ash trees transplanted from the estates of Raton, its barred windows and their corresponding stone benches, its rose trees and ornamental vases. The coaches and

carriages travelled between groves of trees and flowers, and the elegant ladies occupying them showed off their dresses and jewellery.

By far the greater part of the subsequent alterations to Baixa Pombalina have occurred in Rossio Square, especially during the twentieth century. However, the principal modification is of a symbolic nature: the square was renamed king Pedro V Royal Square, and embellished in 1870 with a statue to the King and two symmetrical fountains imported from Paris in 1890.[7] After a fire the Inquisition Palace (a building completed in 1842, following a Carlos Mardel project) was demolished, and on its site the Almeida Garrett or D. Maria II Theatre was erected in 1870 in the neoclassical style as part of a project by the Italian architect Fortunato. Nevertheless the Inquisition Palace was recalled on the other side of the square (south), by the Bandeira Arch (from Reinaldo Manuel ?) built at the end of the eighteenth century by Pires Bandeira which is a reproduction of the Palace portal. (see Figure 5.14)

In 1834 the religious orders were abolished and their convents confiscated. This act affected 401 religious houses (including colleges, hospices and also twelve convents) all over the country and in the overseas provinces, and more than 6,500 people, of whom less than half were actually friars and monks. Lisbon decided to change the look of the promenade and replaced the monastic perimeter wall by iron railings between square stone pillars. Two huge iron doors replaced the old gate. The summer festivities on the Public Promenade altered the peacefulness and tranquillity of Lisbon. The garden was enjoyed by the aristocracy, the bourgeoisie and the common people. It was the heart of things, a meeting place where one could listen to music and indulge in amorous pursuits. From 1895 the garden could be enjoyed with illumination during summer nights. Júlio de Castilho in 'Lisboa Antiga' describes it: *'The Gas Company had only been established in Lisbon for a short time and the marvellous arrangements of glittering diamonds and multi coloured obelisks were so completely new. How joyful those nights were! How many thousands of people congregated there,...'.*[8]

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[7] The statue is supported by a monumental column, in fashion at that time (eg. Bastille square and the July 1831-40 column in Paris, or the Nelson Column 1840-45 in Trafalgar square, London).

[8] Castilho, J. de, A Ribeira de Lisboa, C.M.L., Lisboa, 1940.

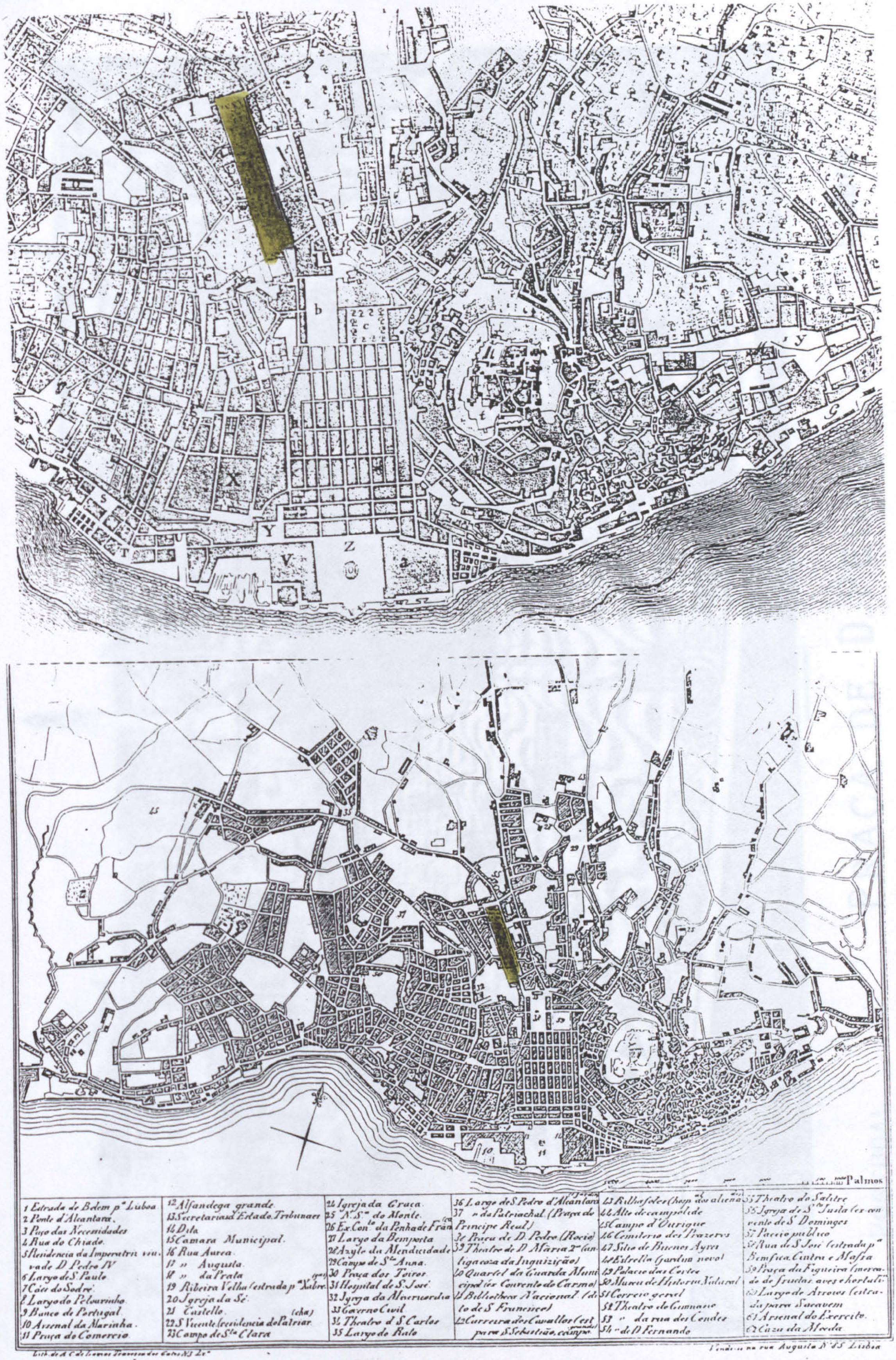

Figure 5.13 The 'Public Promenade' and the 1785 and 1855 city plans.

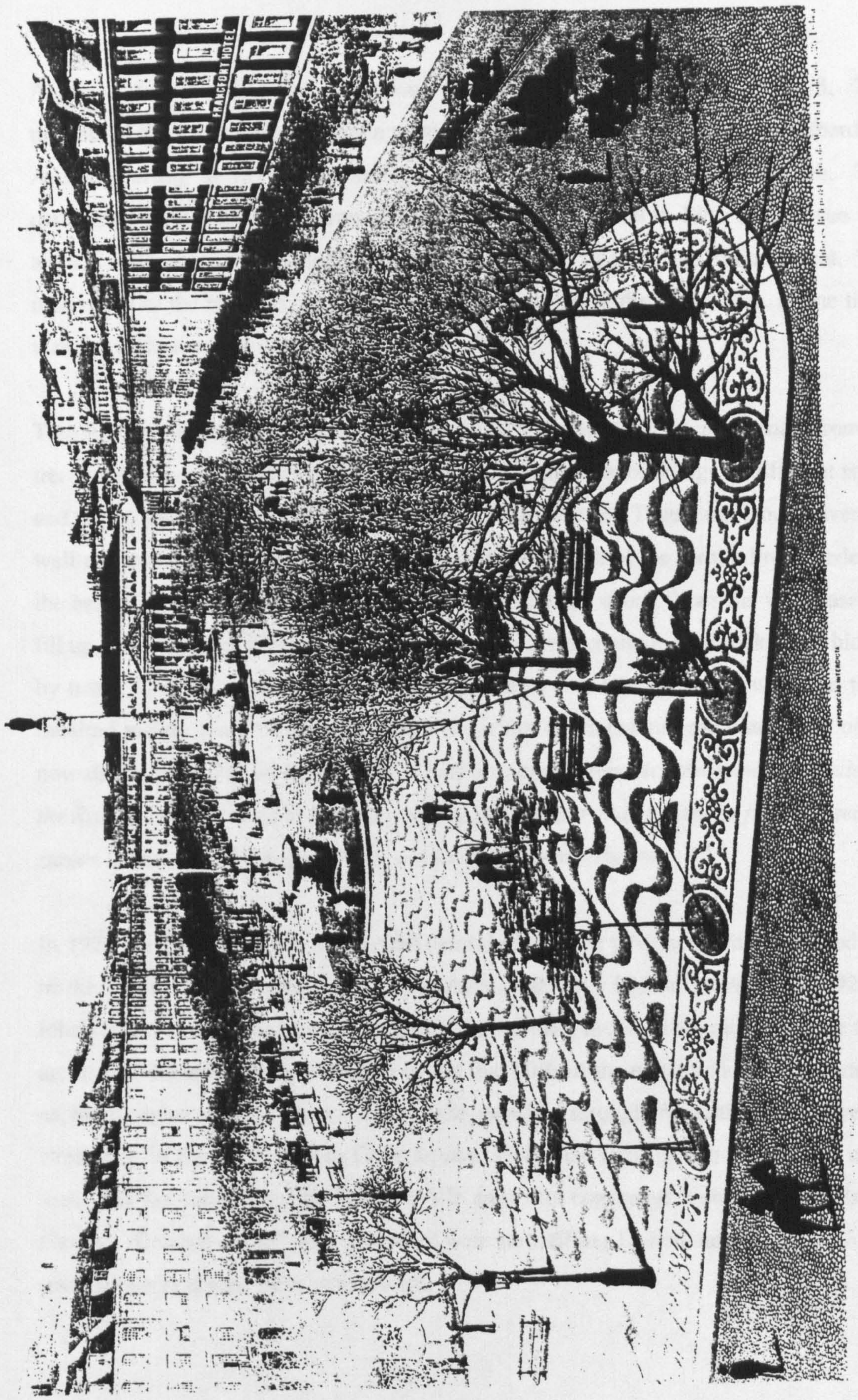

Figure 5.14 View of Rossio square with decorative pavement.

A project for extending the Avenue up to S.Sebastião was discussed in 1873. The protests of the inhabitants of Lisbon were not enough to prevent what is now Liberdade Avenue starting in 1879, with the symbolic demolition of the Salitre Theatre. The demolition of the railings commenced in November 1882, and in 1885 the Avenue was already open as far as the Alegria de Baixo Square, Vacas Lane and Salitre Street. The monument to the restorers was begun on 29 April 1886, in the area which, at one time, was the main entrance to the Promenade.

The Avenue incorporated two pavements which separated its central road from its tree-lined side-streets adorned with flowers. It is flanked by buildings of different styles and tastes, and there are fountains sculpted to represent the Tagus and Douro rivers as well as various monuments. The only remnants now left of the Public Promenade are the beautiful sculptures which hold up a pitcher through which flows the water used to fill up the ponds, and which is supported by plant-covered ornamental rocks, half hidden by trees. These were from the central aisle (which was twenty metres wide and three hundred meters long) of the area which in former times marked the outer edge of the now disappeared Public Promenade. *'This Avenue, pragmatic and symbolic, ended in the Rotunda consecrated to Pombal, making the connection between the first and second stages in the city which after 1755 was born and grew thereafter'.*[9]

In 1920 the Rossio Square's beautiful central decorative pavement was destroyed and in the late thirties the alterations to the Avenue began. Lisbon in 1930 had 592.000 inhabitants. Six hundred new buildings were licensed in 1932, but only ten were from architects' designs. It was common to say that 99% of the construction had a foreman as the designer. Meanwhile the city was growing through Almirante Reis Avenue, stretching, in the thirties, up to Chile Square, giving the first lines to the Actores urban area. At the same time the Eduardo VII area was connected with Rato and Estrela Garden. Council estates with low rents were now filling Lisbon, and proposals for an underground railway were put forward.

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[9] França, J.A., Lisboa Urbanismo e Arquitectura, Biblioteca Breve, Lisboa, 1980, p.80.

In 1934 the municipality, as a result of a intervention by the Architects Society, nominated a commission to be the guardian of the city's aesthetics, in order to assess the effect of the streets and buildings to be erected. At the same time, and as a contradiction, a competition was announced for the 'architectonic regularization of the fabric of Rossio'. This idea would cause reckless alterations in Baixa, which did not cherish its own historic value. The Baixa metamorphosis began with piecemeal reconstructions. The first intrusion by Pombaline building breaking the uniformity of design was the Totta & Açores bank (1906) in Ouro Street designed by Ventura Terra. Twenty years later (1923-7) another work, this time by Carlos Ramos for an office building, used a plain facade with vertical pilasters. At the corner of Augusta and Betesga street a building was altered in the nineteenth century as a residential hotel, the International Hotel. The four floors were renovated and the facade altered. This constitutes perhaps the first example of reuse in this area. More recently a different attitude towards building has started spreading in Baixa. This consists of infills, specially used in buildings owned by banks. Crédito Predial (1920-25) in Augusta Street, Fomento Bank (1930) in - Prata Street, Burnay Bank (1915-20) in Fanqueiros Street, the Metropole and Frankfurt Hotels (1914) in Rossio and Augusta streets, Havas agency 1922 in Áurea Street. (see Figure 5.15) This change paralleled an increase in clubs like the Monumental (1917) (where arabic detailing was a curiosity), the Bristol built in 1925 in the Modernist style and Maxim's in the Foz Palace.

By the end of the nineteenth century cafes and tobacconist's began to spread all over Baixa. Some are still in use today, such as the Mónaco tobacconist shop, situated in Rossio Square, which is a curiosity dating from 1894. This space is a very narrow corridor, very richly decorated with painted ceiling and walls covered with tiles by Rafael Bordalo Pinheiro (1846-1905). The Camponesa in Sapateiros street is a café from 1907 decorated with tiled panels by Jorge Pinto, some of which are very naturalistic, others non figurative but still in an Art Noveau style. Padaria Inglesa in São Julião Largo is a bakery dating from 1907 and constitutes another very good example of an Art Noveau infill in a Pombaline facade.

Figure 5.15 The piecemeal constructions in Baixa Pombalina

Several others can be referred to; such as the Martinho da Arcada Café, the Brazileira Café (1925) with its Art Déco influence, and Chiado (1927), which all began a very attractive fashionable places. Still in the Chiado area, the department stores, (Carmo street) constitute an important attraction for Baixa. During the thirties, the Chave D'Ouro, Brasileira and Portugal cafés enlivened Rossio square. In Restauradores Square, there was the Palladium café, (1932), and in the Avenue, the Cristal Café, (1943).

Under Duarte Pacheco, president of the municipality and Public Works Minister from 1938 to 1943, the city changed enormously. He ordered the preparation of a master plan for the city, for which E. de Groer served as consultant between 1938 and 1940. Keil do Amaral wrote about Duarte Pacheco '*Perhaps he was the first Portuguese municipal leader who tried to create in Lisbon the basis for an integrated and planned city development, putting a stop to private speculation and endowing the municipality with the necessary means to realise an urban development policy*'. The Lisbon he idealized was only possible under the authoritarian regime of those days. The city has never, or almost never, had plans which could have set options; these have been only small detailed confrontations.

What Lisbon needed and still needs is an integral philosophy of development. Since the time of Duarte Pacheco, the city has lived under piecemeal development. His administration can be considered the last stage in Lisbon's recent history. His ambition was to develop and conceive of a city with the idea of making it a capital. Many basic actions were taken in his time, such as the drawing up of the first city master plan (the only one to be put into practice at the right time), and also many land expropriations, which are still undertaken by the municipality today. The only real phases of development planning in Lisbon correspond firstly to the Pombaline reconstruction, secondly to the time of Fontismo, and thirdly to the time of Duarte Pacheco. From that time nothing of any real significance has taken place.

5.5. Discussion

The intention of the following discussion is to assess Baixa Pombalina's importance and value to urban and to architectural history and city planning. The question of the effect which European cities and colonial development had on Lisbon is a difficult one, as it is not easy to recognize where their influence ends and Portuguese tradition begins. Throughout the following section the aim is to underline the components which have a correlation to the eighteenth-century plan for Baixa. These have to do with: (i) *the grid plan*; (ii) *the squares*; (iii) *uniformity of the facades and the apartment building*; (iv) *social stratification*; and (v) *legislation.*

(i) *The Grid plan*:

The main point to be made is that the grid was the system adopted by the Portuguese to rebuild Lisbon's city centre. Moreover, it is important to bear in mind that colonial practice was a crucial factor in the making of that choice. The Portuguese were well-informed about the way in which the Spanish were colonizing South America. They knew about the efficiency with which they carried this out, using a fast and easily executed planning system. They even had the experience of building, in the south of Portugal, a completely new village. Vila Real de Santo António was put up from scratch in five months.

In Lisbon the Marquis of Pombal had to devise a solution to the catastrophe in the city and for that, a quickly executed planning system was necessary. It is enough to point out that there were good reasons for that choice, which does not mean it was necessarily the best solution. Nevertheless, Baixa was an innovation in city planning, showing the stamp of Pombaline power.

If one looks closely at Baixa Pombalina, one has to accept that elements such as its grid plan, its street hierarchy, its architectural uniformity are all part of the colonial grammar, and very well adapted to the already existing medieval structures. Lisbon's plan, however, differs from the colonial plans in three major aspects:

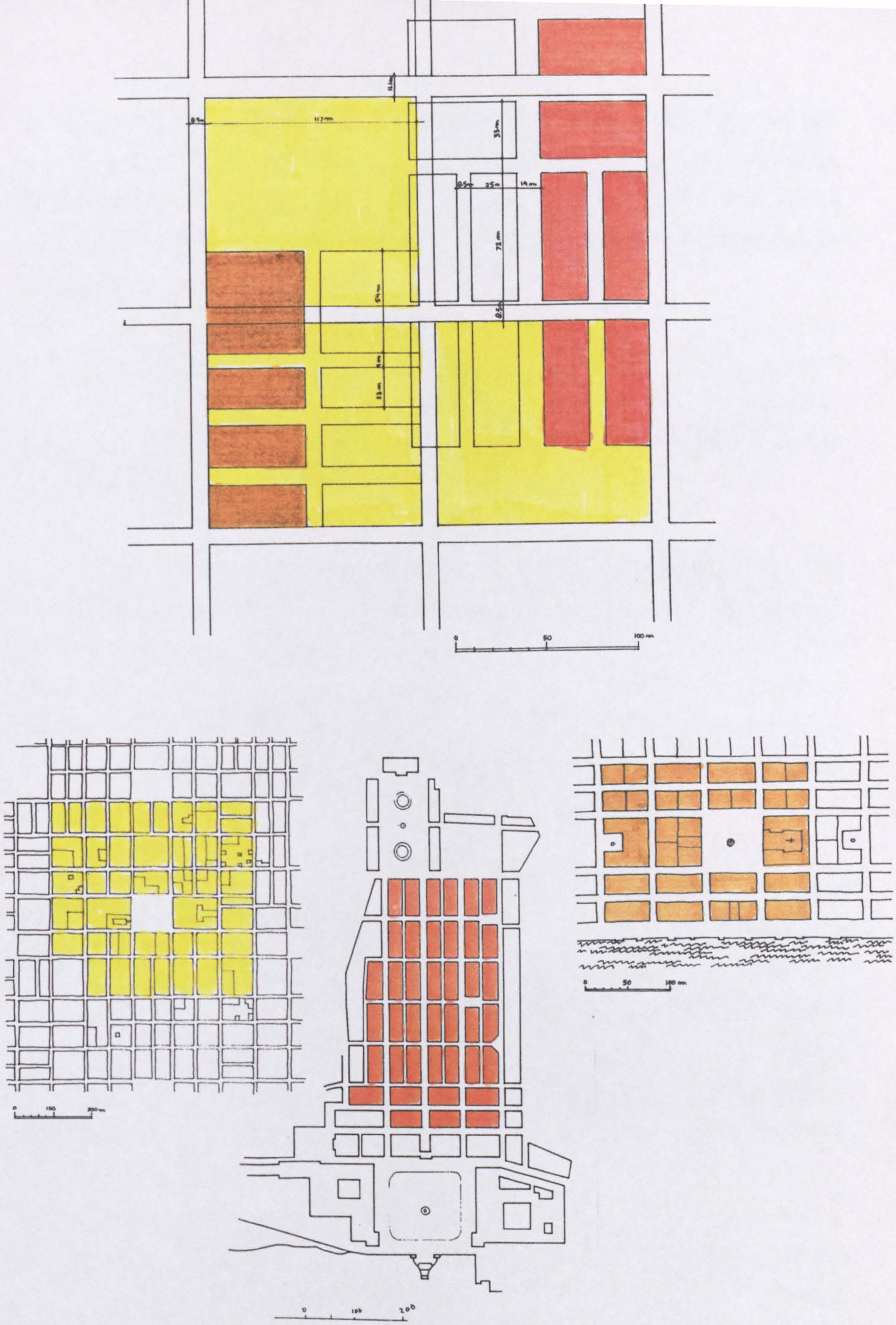

Figure 5.16 Comparison between the Pombaline plan and the colonial cities. Proportional relation between Lisbon, Guatemala and Vila Real de Santo António gridiron plans.

1. Lisbon is an intervention in an historic area, whereas the others are open plans able to be expanded. The Pombaline plan is enclosed; delimited in the west and east by hills, in the north by two squares and a hill, and in the south by another square and the river. Figure 5.16 shows a comparison between the urban planning of the colonial cities and Baixa Pombalina.

2. The rules established by the Indies Laws determine that the central square should be the centre of the city and the pivotal element for its development. In Lisbon this concept was not applied. There is no central square, and Comércio square which can be considered the grid's generator is not a colonial square.

3. In Lisbon block (plots of land) dimensions do not relate to colonial blocks. The former are long and narrow, measuring 73mx25m approx., whereas the initial colonial block was very large and based on a square shape. They measure 117x117m and the streets could be from 8.9m up to 11.1m wide. The familiar plot division (quarter or block) was foreseen through the division into eight equal fractions. The eight built plots resulting from the initial block gave rise to a diversified road system with streets and alleys. These lots had a very low density, two inhabitants per hectare.

Although, from the eighteenth century the shape of the blocks changed, becoming rectangular when wished, and the lots' dimensions were reduced and increased in number, these are still different from the blocks used for Baixa Pombalina. The principle of the square grid was always to be followed. What could change was the proportion of two, three or four blocks. Guatemala (1776) is an example of a city based on a central symmetry with an hierarchical system of streets and secondary squares. The blocks have different dimensions, but are always proportional to the initial block pattern.

In Baixa the streets' hierarchy and the blocks' dimensions and location in the plan determine different dimensions. However there is no proportional relationship between the type of blocks nor the squares. The Pombaline block does not have the same rural origin as the colonial, or of Vila Real de Santo António. It is a compact grid with narrow blocks and arbitrary lot divisions. The Pombaline plan established it own rules

and escapes the strict colonial rules established by the Indies Laws. It is in correlation with eighteenth-century colonial variations of city planning.

However, one is also conscious of the European influence. This influence is not related to the plan itself, (because as in the Turin intervention, the grid concept was dealing with smaller areas and city extensions, rather then with a plan) but with the Baroque city and its projects of embellishment.

(ii) *The Squares*:

The squares in Baixa should be grouped in two types: those related to colonial city planning and those related to European influence. Comércio square is the main structural element for Baixa and for the dimensions of the quarters. Two directions are established in this square in which political and economic power are represented. It is the main symbolic entrance to the city as it connects to the river and the sea. Comércio Square is the monumental space of the plan and is its 'opulent' element. It is without doubt a typical Place royale. It has been compared by Paul Zuker to the two other marinas, the Piazzetta in Venice and the Place de la Bourse in Bordeaux, the earliest among the places royales of Louis XV.[10]

Pombal thought of this space as the commercial theatre of Portugal. Its rhythm is its most important quality, based on arcade multiples all around. Concerning the use of arcades in Comércio square it is possible to refer to their use in European cities such as in Turin or London, (Covent Garden), in colonial cities, (as those were prescribed for the plaza and the four principal streets that set out from it), or in sixteenth- century Lisbon. But its monumentality which results from the relationship between a relatively tall central monument and a rather low height of surrounding buildings relates to the places royales. A very important visual effect is achieved in this square, because it is, at the same time, both an open and an enclosed space. This arises from the perfect transition which exists between the platform of the square and the horizontal surface of the Tagus estuary. Unfortunately, this sense of continuity is no longer apparent, because

[10] Zuker, P., Town and Square, from the Agora to the Village Green, Columbia University Press, New York and London, 1959, p.231.

now the square is used as a car park.[11]

The square's monumentality and harmony is achieved through the rhythm of its facades, the arcades leading to the river, and through the equilibrium emerging from the valorization of three special elements: Augusta street's triumphal arch and the two elegant towers by the river. The idea of repeating the 'Tércio Tower' on the east side is intended to reinforce the square's symmetry.(see Figure 5.17)

In Terreiro do Paço, the square is created only by the buildings and their facades. From the plan alone, it is obvious that this square is divorced from the total layout of the area; however at the same time it can be considered as the starting element for the composition of the plan. The squares in Baixa Pombalina are placed in a closing position in the plan, whereas the colonial squares (specially those with the grid) were the pivotal elements for the initial composition and its further development. Normally a square exists as a result of the suppression, in whole or in part of elements of the area into which it is inserted. Terreiro do Paço is an exception; it is isolated from the Pombaline plan.

Rossio can be compared to colonial squares in some aspects. It is possible to see the layout of the four main streets, one from the middle point of each side, and two from each corner; its proportions are linked with colonial principles; the blocks dimensions relate to the open space and to the central grid; and the four corners of the square are aligned with the four dominant winds (because in this way the streets leading out of the square will not be exposed directly to the four winds). Rossio is similar to many south american secondary squares from the eighteenth century. However it cannot be considered as a typical colonial square, principally because it does not allow for the city's extension, a major principle in South American city planning.

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[11] According to Zucker, P., 1959, p.232, 'there are very few squares (Piazza in Venice, St. Peter's square in Rome) where the horizontal area of the floor is of the same decisive importance for the total spatial effect'.

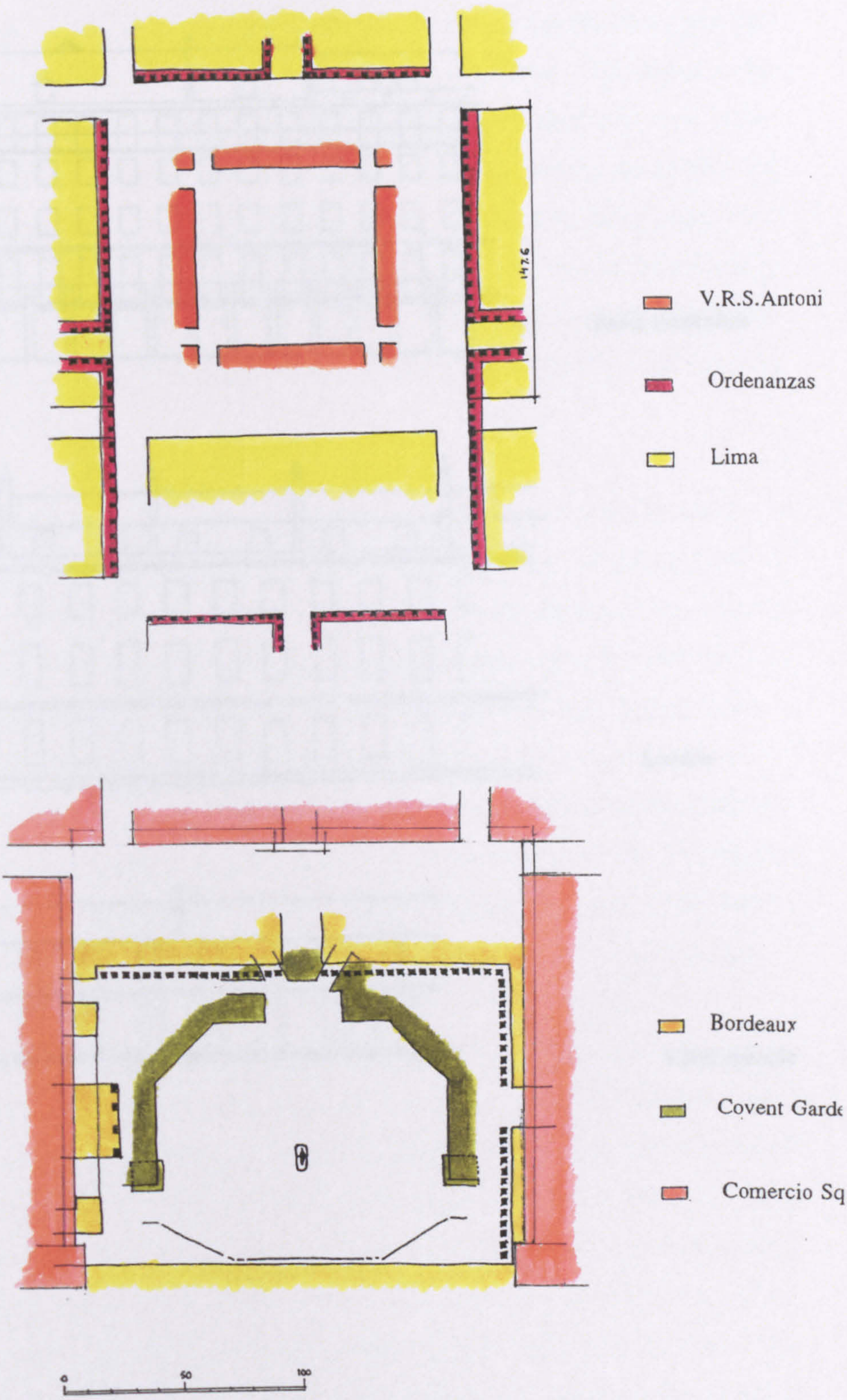
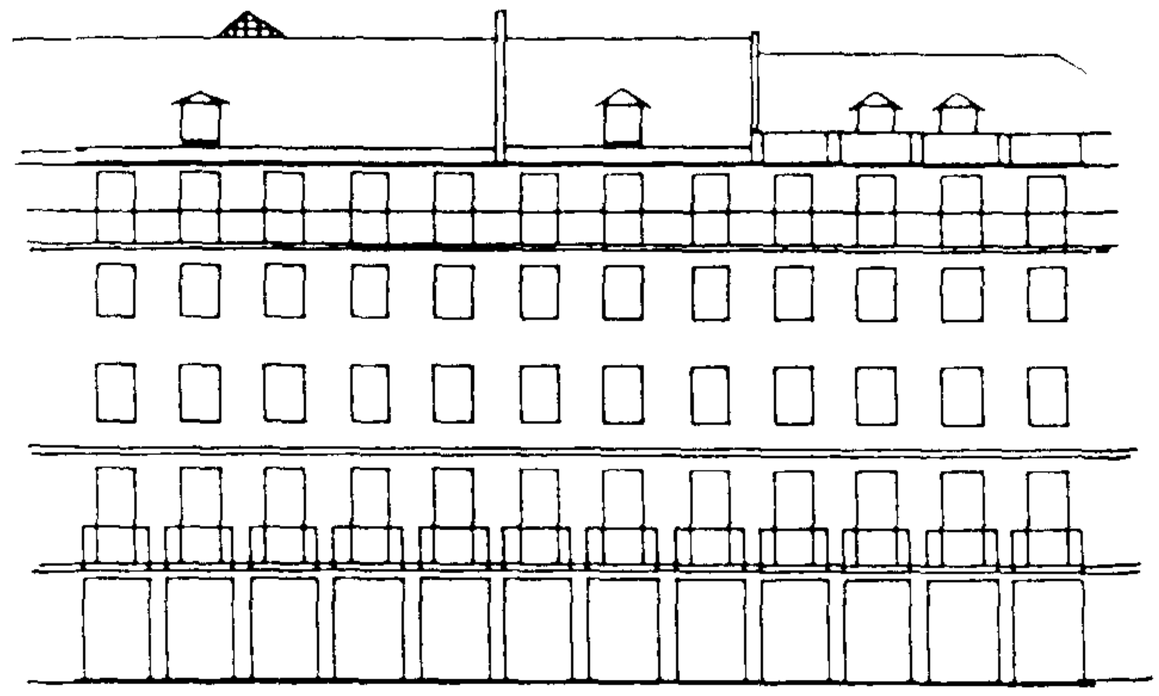
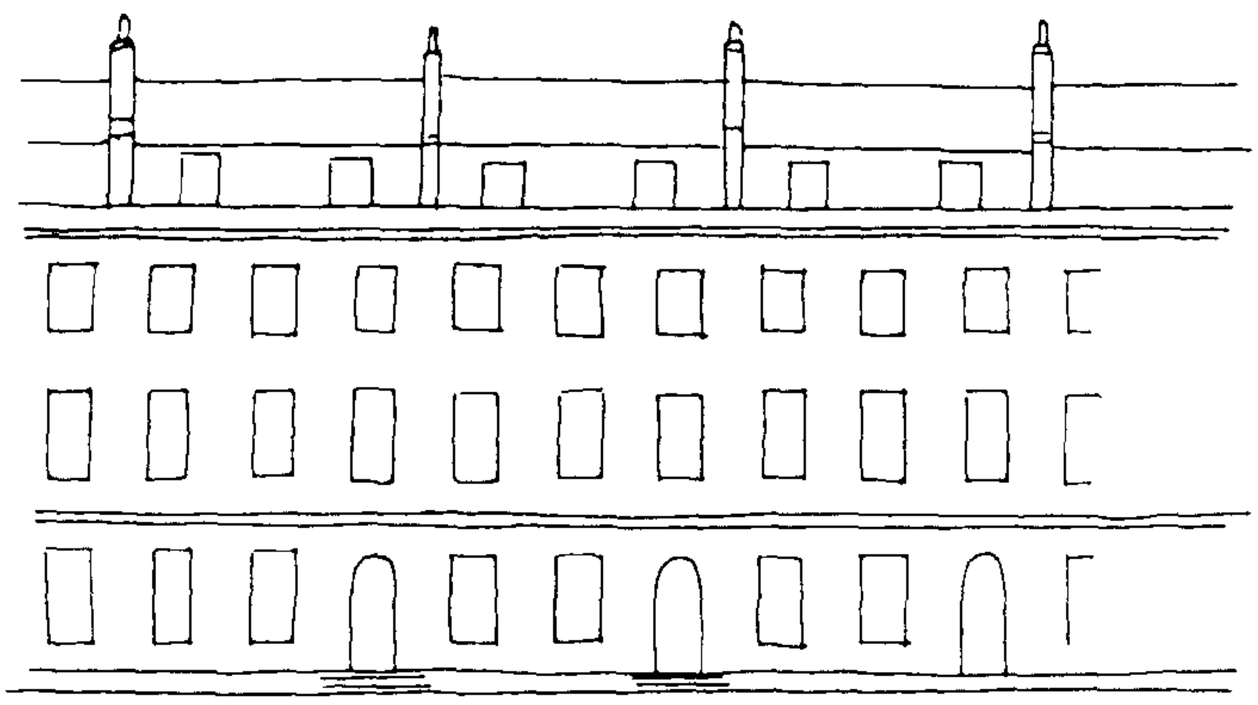


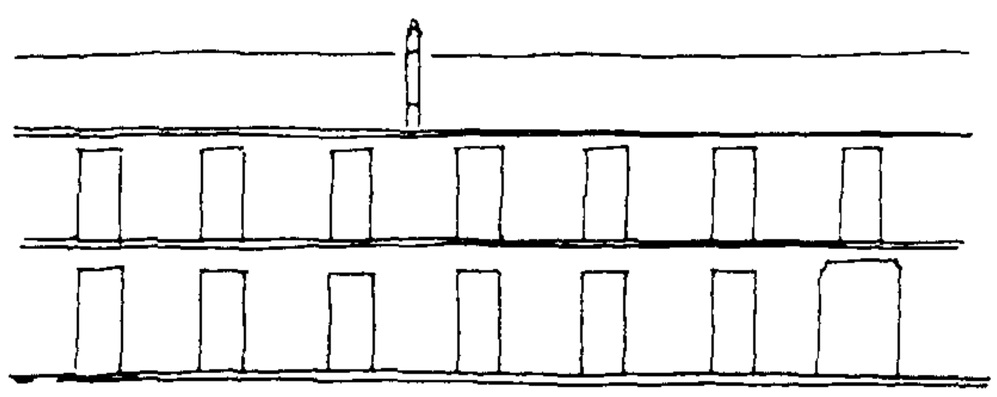
Figure 5.17 Comparison of European and Colonial squares.



Baixa Pombalina



London



V.R.S.Antonio

Figure 5.18 Comparison of European and Colonial buildings with Baixa buildings.

(iii) *Facade uniformity and the apartment building*:

The idea of uniformity in facade design, initiated by the French in the places royales and later adopted in British cities, was also the chosen option in Lisbon. The drawings for the facades were executed in a precise and detailed manner and displayed an extreme uniformity of composition. However the interior plans were the entire responsibility of the builders, a concept already used in Queen Square, Bath and in Edinburgh, New Town. Regarding the colonial cities, it is important to consider that their urban pattern was, from the beginning, precisely defined. However it was only from the eighteenth century onwards that an attempt was made to control the type of openings and building heights. (see Figure 5.18)

Building interiors are also very simple, even modest.[12] Through a narrow and badly illuminated stairway one reaches the flats, (usually two per floor) which are equally simple. However, due to the absence of a courtyard one finds interior rooms without any kind of ventilation and kitchens (at the rear) almost without light. The building has, through time, been used by different social classes with the first floor being the most important, given its better illumination, wainscot tiles and facility of access. However if one compares the London terrace house and the apartment building in Paris with the Pombaline building one realises that in relation to its interior plans, the Portuguese solution reveals a poor standard of living conditions, reflecting a plan which had to provide a rapid solution to a catastrophe, in a country short of economic resources.

The problems with the interiors of the quarter's buildings are related to its dimensions. Although differing in size according to their position in the plan they all have similar problems. The quarters in the main central area measure 25mx72m and have a lightwell measuring 4mx45mm. In fact this is not enough for proper ventilation, especially today when the buildings have an average of six floors. Both the London and Edinburgh quarters are very different. They measure respectively 160x120m and 162x134m aprox. and they often have mews at the rear measuring around 10m (used for horses and coaches). The houses, although very long would always have a private courtyard or

[12] The building interiors were the entire responsibility of the builders, so long as the external unity was respected. This was one of the eighteenth-century principles.

garden providing for healthy living conditions.

The larger the block the more it is likely to be cut across by new streets, and the amount of open space enclosed within the block is related to better living conditions. The size and shape of the blocks were directly related to the number of lots into which they were subdivided. The colonial quarter, due to its large dimension, also exhibits good living conditions, because the plots of land are never totally occupied by housing as they always have a courtyard. The option in Lisbon was for a very narrow quarter, in which the division into lots would vary in accordance with the economic situation of the future owners and because the old medieval plots were extremely small.[13]

(iv) *Social Stratification*:

The Pombaline intervention gave rise to a very clear-cut stratification in society. The favoured class was the middle class, promoted to the dominant position, as Pombal wished, by a process of appropriation of property.[14] The earthquake provided an opportunity to replace the class whose privileges depended on birth with one which depended on trade for its status and wellbeing, and it also allowed the introduction of taxation into the process of city planning. The number of builders belonging to the nobility was very small: a mere eight, who built ten of the 620 registered buildings. On the other hand, Pombaline bourgeois names such as the Caldas, Cruz or Machados, were commonly referred to in the municipality archives.

The plan can be characterized from a political point of view as a change from a strongly asymmetric city in which the social classes were moved. The Pombaline plan marks an economic and social break in the history of Lisbon because it led to the isolation of the middle class and the breakdown between production and trade, which had previously been inter-related in the medieval city. The earthquake allowed a free urban concept

[13] The Pombaline quarters dimension and property division are today the most problematic elements for their preservation.

[14] This was a device to which Haussmann was to give legal form to a century later, in Paris, in a similar situation.

which gave form to an ostentatious plan.[15] That is perhaps one of the reasons why the leasers are slowly changing the city.

The street system also raised the problem of separating coach traffic from pedestrians. Manuel da Maia had two proposals for Baixa Pombalina. One was to have a central street for coaches, with two side walks for pedestrian separated by bollards. The other idea was to have a street with arcades on both sides for pedestrians, a solution not dissimilar to London's Covent Garden. What was built in Lisbon was a hierarchical scale of streets: the main streets have width of 13.70m, 13.50m, or 11m; the secondary 8m, (the colonial streets had to measure from 8.9m up to 11.1m) ; and the cross streets a 10m width. For this hierarchical grid another hierarchical pattern of uses was proposed. The main streets of commercial activity were for jewellers and banks, the secondary for domestic personal and special provisions, and the cross streets were an extension of the main streets, however with less importance, and devoted to domestic activity. (These issues will be further expanded upon Chapter 8 and 9 while analysing the commercial and administrative structure and traffic and circulation).[16]

(v) *Legislation*:

From the London Building Acts, Manuel da Maia, royal engineer-in-chief, learned that several reforms had been drawn up for the reconstruction of the city after the fire of 1666. He proposed the following four-point plan:

1. Regularization (proportion and symmetry) of the urban plan and of the architecture,
2. Attention to hygiene in the city, through the introduction of backyards in the residential quarters,

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[15] In 1766, over the 13km of streets in Baixa there were no more than 59 new buildings. Following Monteiro de Carvalho's list of 1776, it is known that in April 1766 and 1776, Baixa had almost 140 built houses, the Bairro Alto 25 and the remaining area 500. França, J. A., Lisboa Pombalina e o Iluminismo, Livraria Bertrand, Lisboa, 1977. The Marquis of Pombal would have permitted the erection of a little more than half, or one third part of Baixa. However these numbers can only be referred to the central districts finished in the first years of the nineteenth century.

[16] In London there were lanes and side streets with 4.24m wide and traffic roads with width of 6.10m, 9.15m and 13.70m (which was related to the buildings width - for the principal streets and lanes - 3 storeys and for the by-streets and lanes 2 storeys).

3. A generous road system to enable improved communications,
4. A hierarchy in the use of spaces for different economic activities,in order to aid commerce.

From the Colonial city planning and the Indies Laws Manuel da Maia learned that order and regularity were the principles for the setting up of new cities. These, by now, established models were added to the concept.

What he achieved in Baixa was an interpretation of the Colonial plan and standardization of architectural models.

(i) A multi-occupant building with the 'right and left' plan layout.
(ii) The medieval tradition of using the ground floor for commercial purposes was kept.
(iii) Buildings of this period had mansard roofs and also included fire protection measures.
(iv) At first, three-storey buildings were erected. But later, four or even five-storey ones were built, in order to increase profits from the site.
(v) This model was influential throughout most of the nineteenth century, even in areas already built-up and settled.

At the end of this discussion on the effects the European cities and the Colonial development had on the Lisbon reconstruction, it is feasible to say that as in the other European cities, Pombal achieved, through his plan in Lisbon, not only the king's glorification but also his own promotion as Prime Minister. European influences are clearly seen in the plan's monumental square, in the architectural composition of the facades in the concern with hygiene and building construction, and in methodological way of reorganizing a city. However Baixa Pombalina is dissimilar in many other aspects which determine its originality in the eighteenth century. On the other hand the plan, as a whole, was clear-cut in its way of thinking of the city since the Portuguese, at that time, were not so familiar with the grid. This urban system was chosen because it displayed several good features such as efficiency and easy execution and because it was, at the time, largely used by the Spanish in South America, and was therefore well

known in Portugal. Although the colonial influence is clear in Baixa Pombalina, its plan's virtue resides in the grid's excellent adaptation to an existing city. It is, therefore, innovative in the eighteenth century.

The Baixa was to become the heart of the city, brought to life by the bourgeoisie, who by the end of the century would found the '*magazins*', the banks and many shops that we use today. It is the character of present-day Baixa that we aim to study in *Part III* of this dissertation, in order to discover its problems and its needs for the future.

Part III: Cognitive Context

Chapter 6

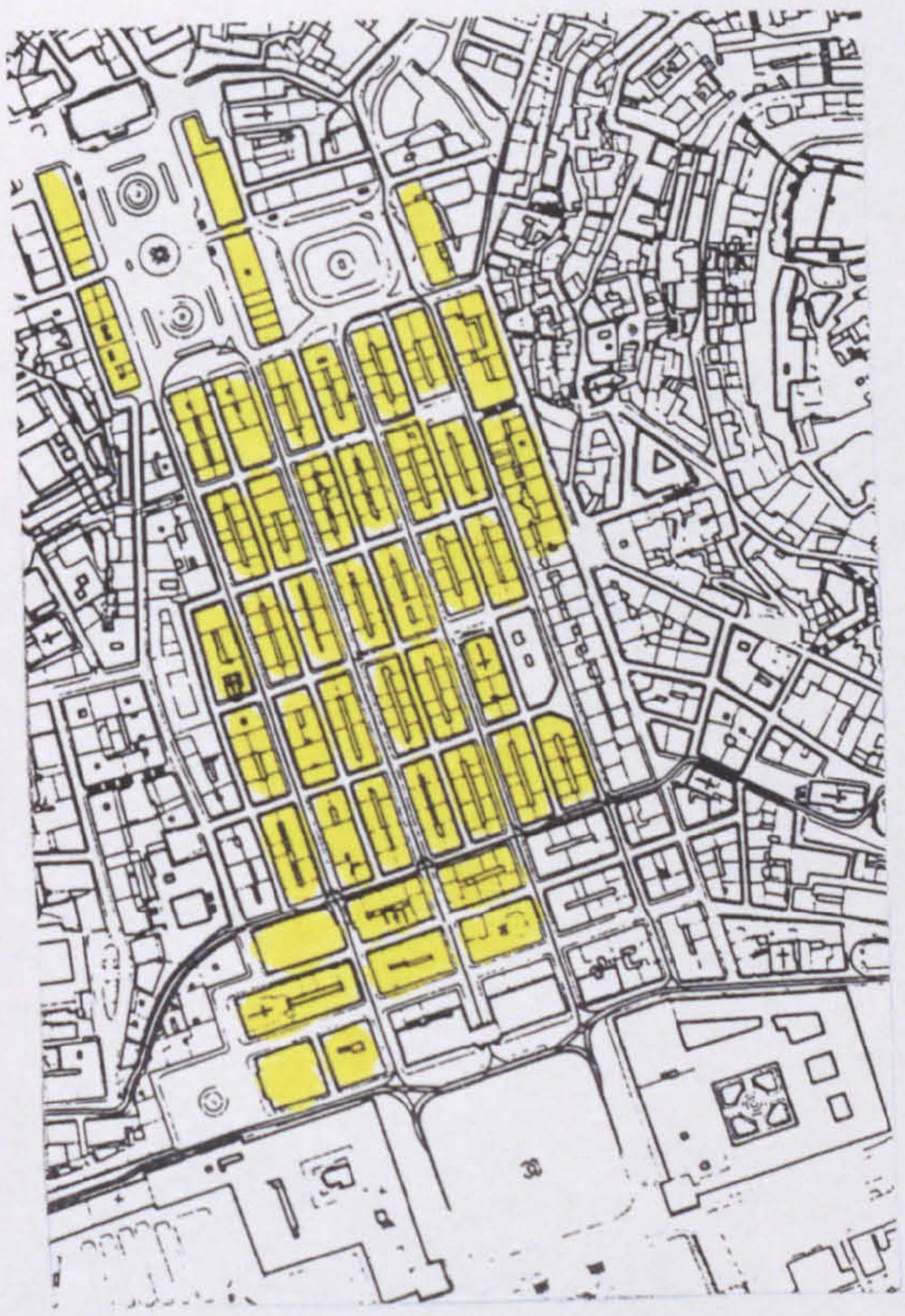
Urban and Architectural Analysis

6.1. Introduction

This chapter starts Part III of the dissertation which constitutes the cognitive context of the case study. This aims to approach Baixa Pombalina in its present state by determining its problems and needs in different areas of research: urban and architectural; social and living conditions; commercial and administrative structures; traffic and circulation; legal and financial.

This specific chapter introduces the urban and architectural features of Baixa from a different point of view than the historical one. It relates to the present situation of the buildings and its inhabitants. An analysis of Baixa's physical structures, the type of blocks and buildings, its constructive elements and its composite attributes, is carried out in Section 6.2 and 6.3. To complete the study a survey was carried out in three quarters, concentrating on the architectural analysis of the facades and study of the interior plans. (see Figures 6.2, 6.3, 6.4, 6.5, 6.6 and 6.7)

Another survey was carried out in a selected area, (Area B). Its scope is vast, however this chapter will focus on building conditions (exterior and interior conservation conditions). (Section 6.4) The surveyed area is integrated in three administrative parish areas: São Nicolau, S. Justa and Madalena. The reason for this sector's delimitation is related to its dense occupancy, the conservation problems these buildings present and the strong economic pressure felt. The two squares, Rossio and Figueira are also included due to their inter-relation with the central area. As the area around Comércio square is more stabilized, although needing intervention, this was excluded from the survey.(see Figure 6.1) Before concluding, considerations on the future uses for these buildings are presented.



Area B

Area D

Figure 6.1 The two surveyed areas; Area B ; and Area D; and central area aerial view.

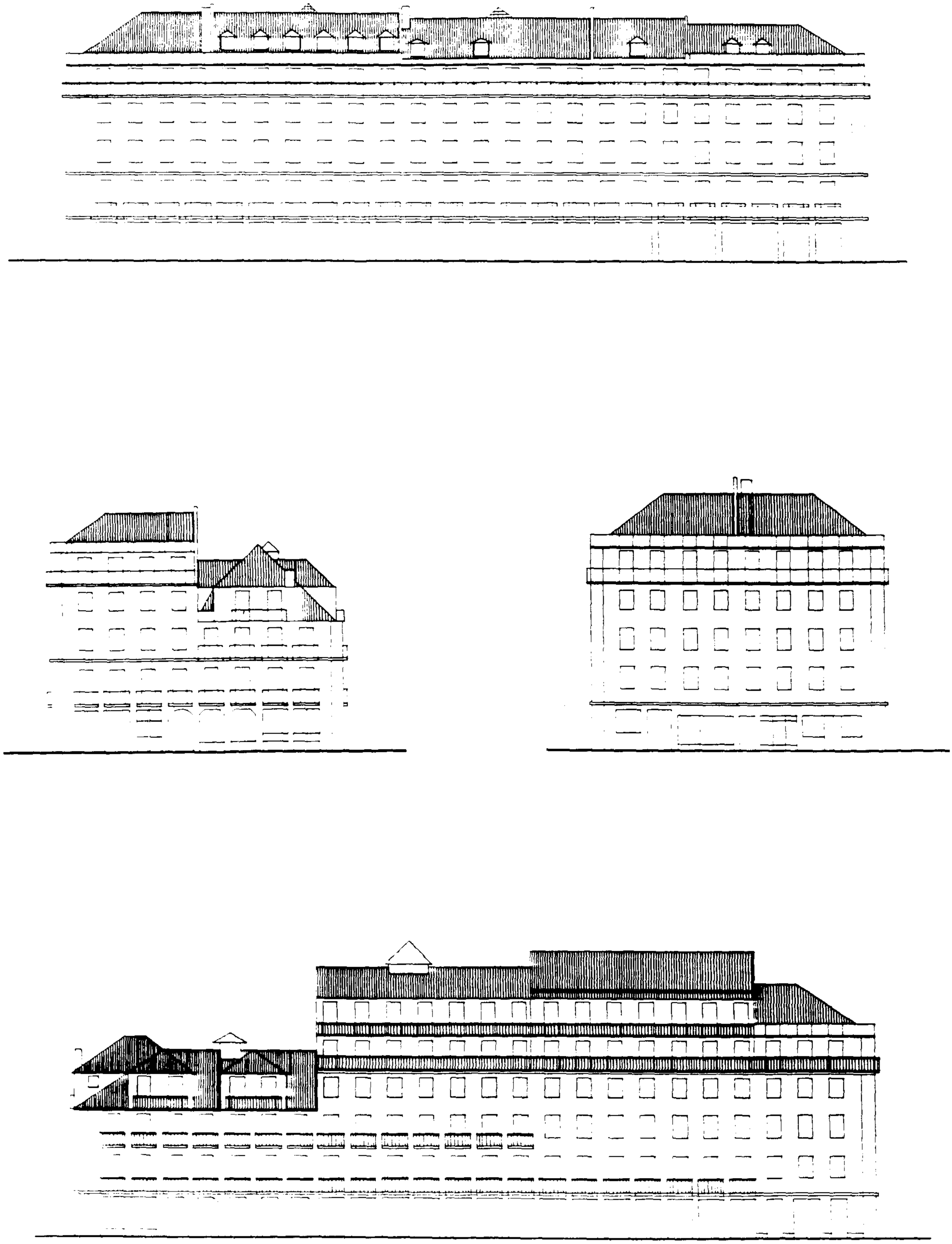
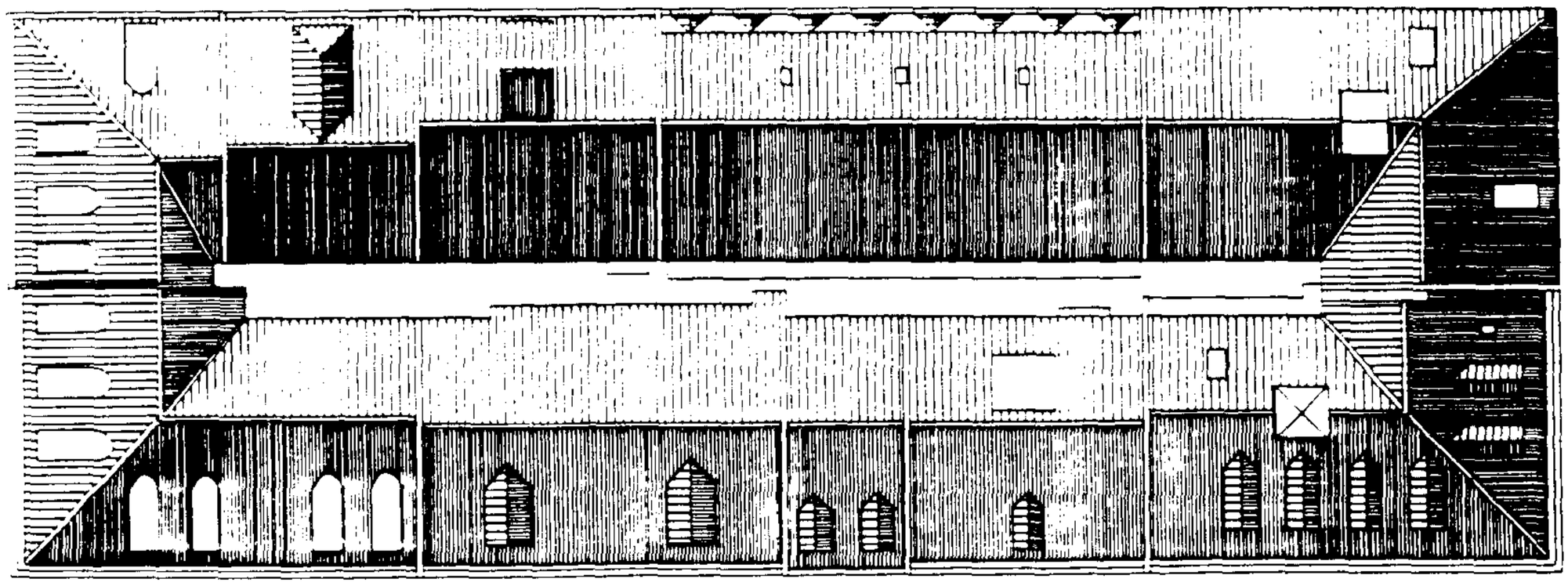


Figure 6.2 Elevations of the surveyed buildings, Block A



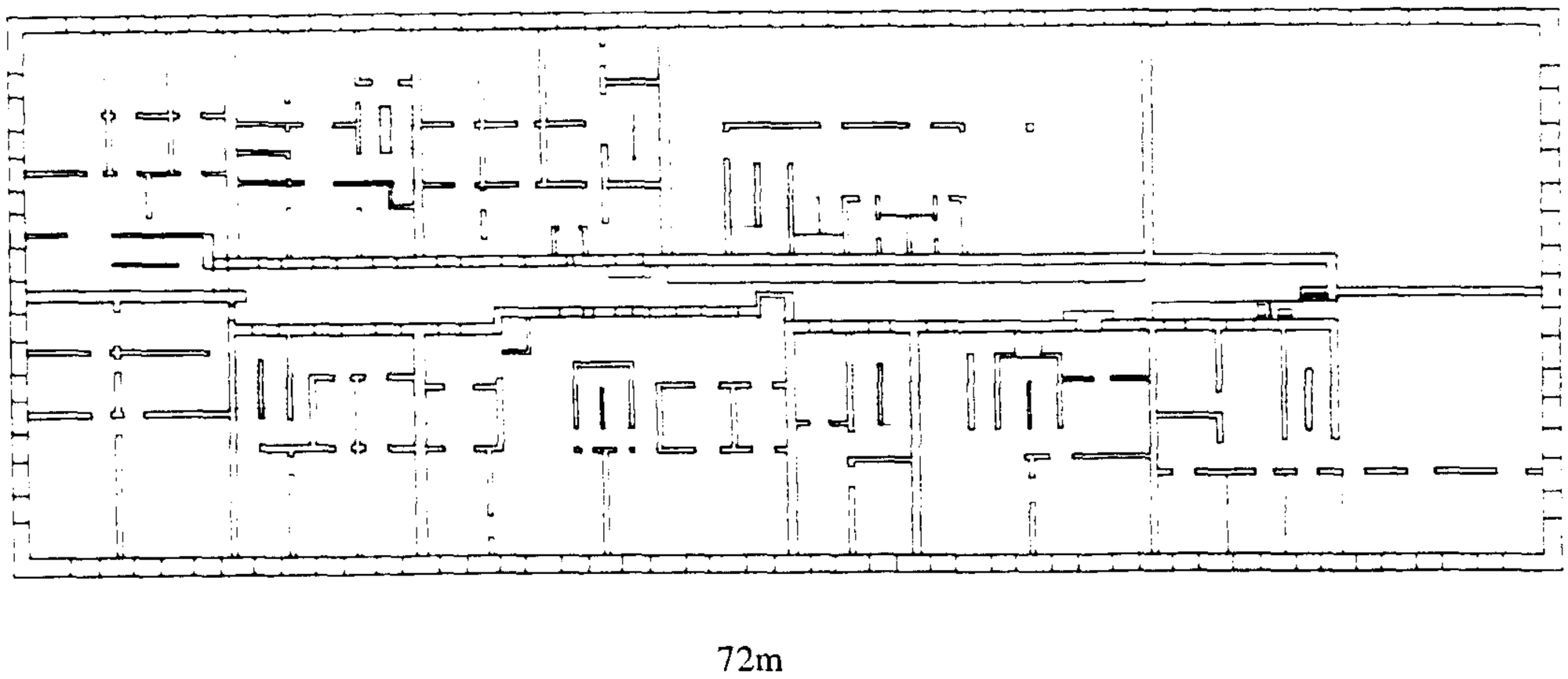
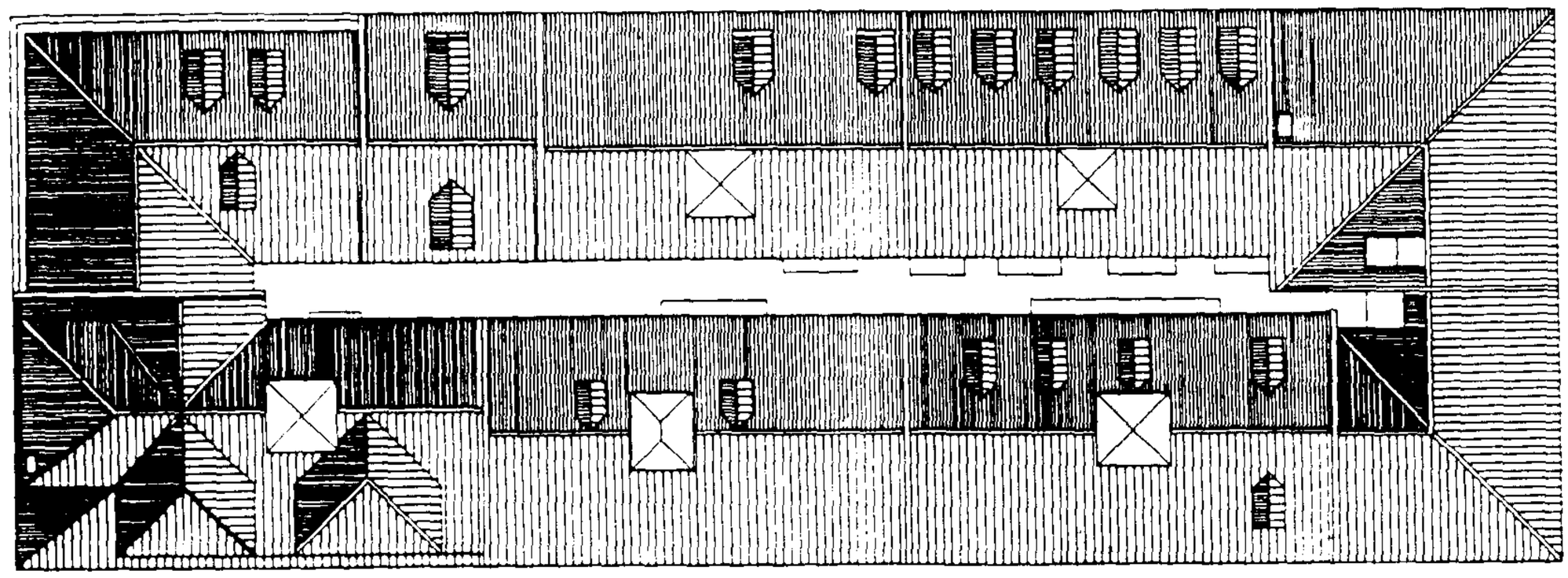


Figure 6.3 Plans and elevations of the surveyed buildings, Block A



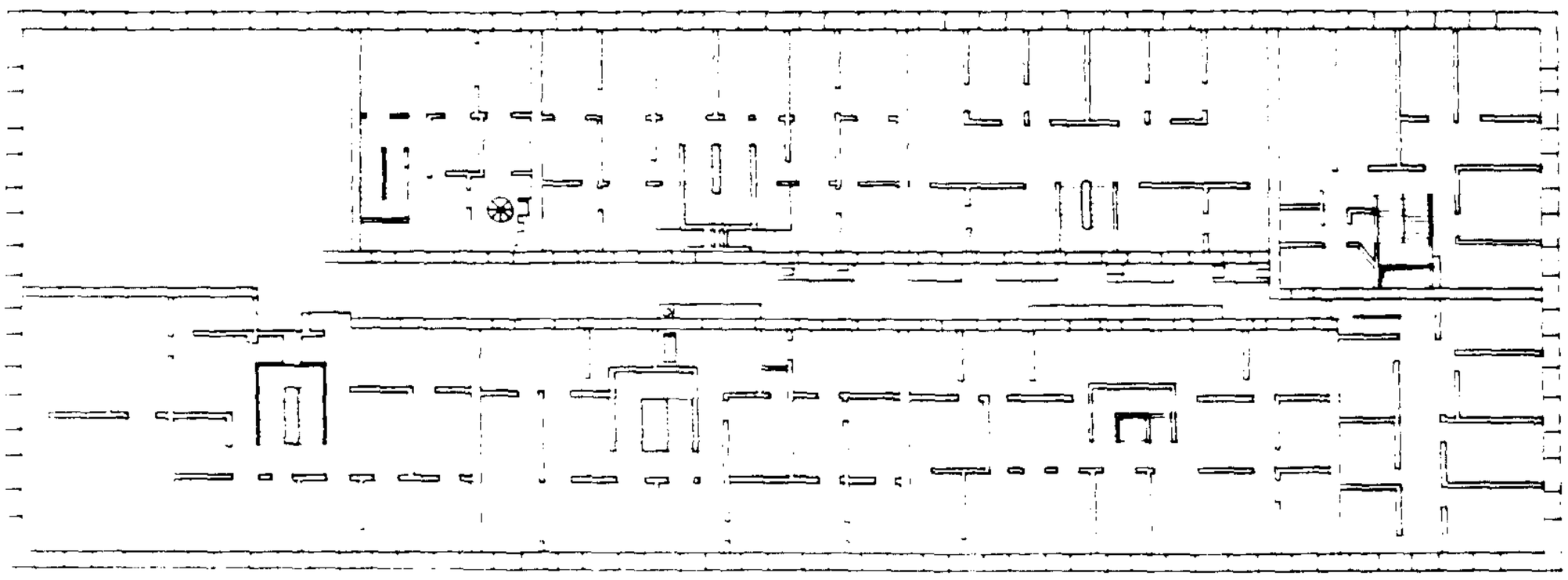


Figure 6.4 Elevations of the surveyed buildings, Block B

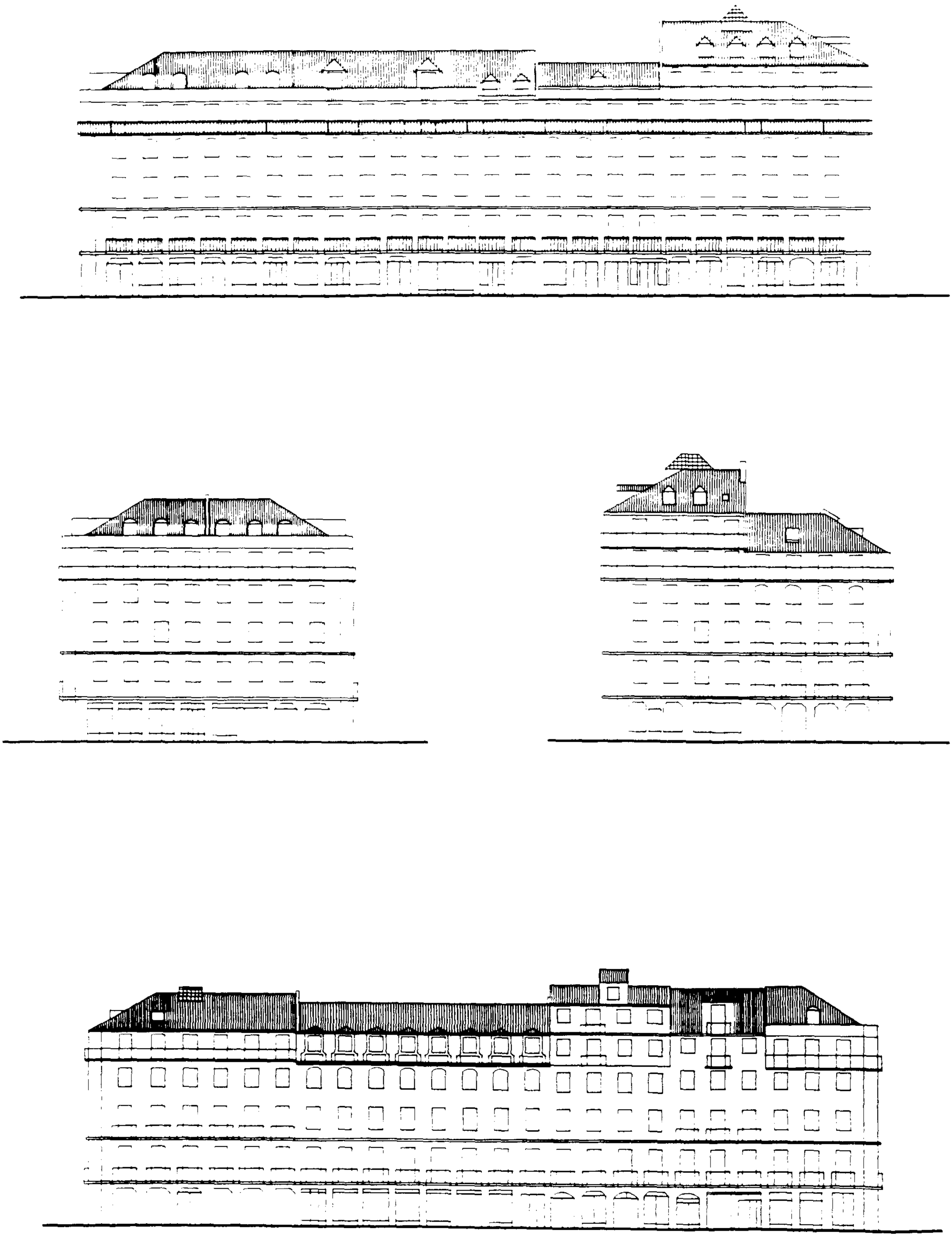


Figure 6.5 Plans and elevations of the surveyed buildings, Block B

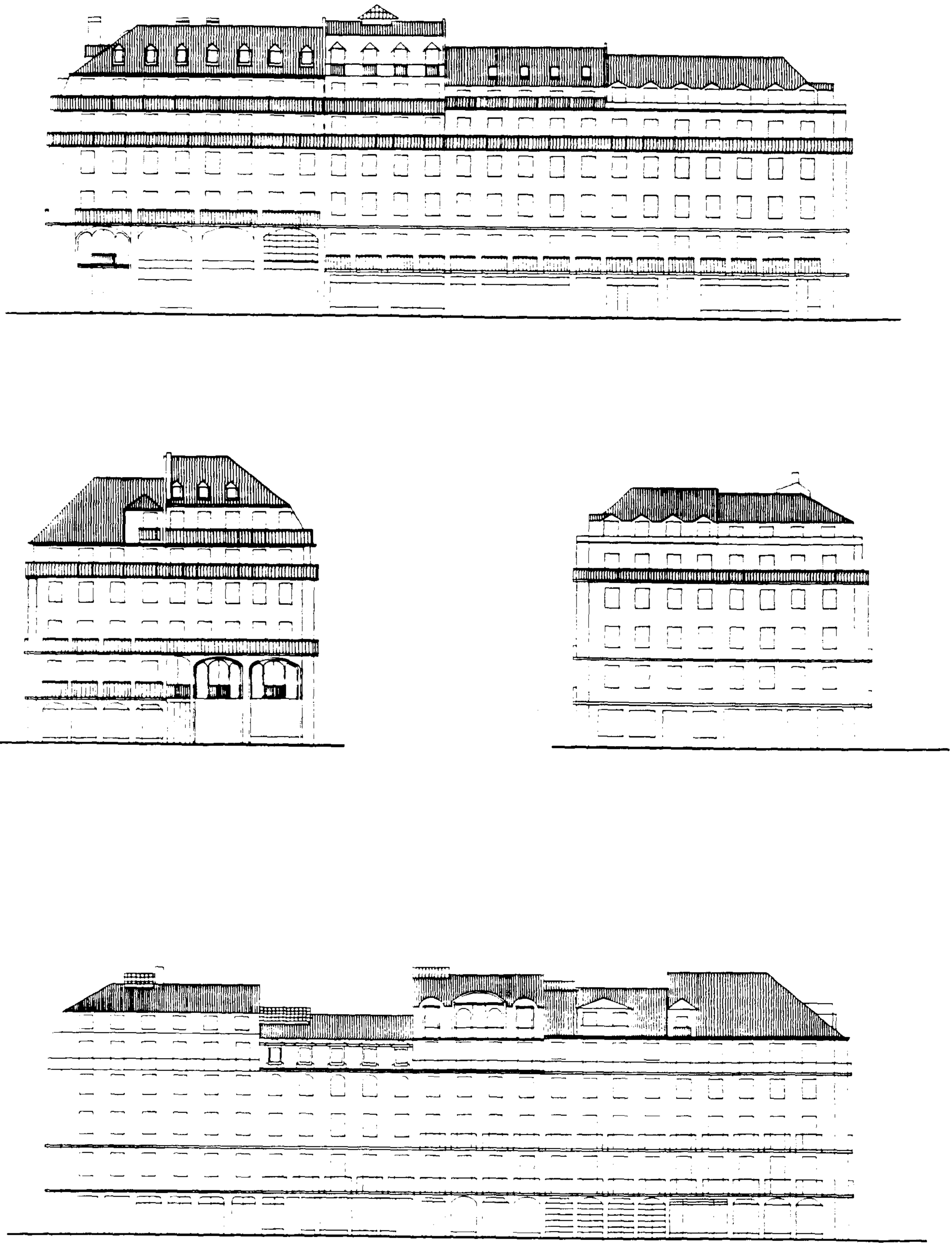


Figure 6.6 Elevations of the surveyed buildings, Block C

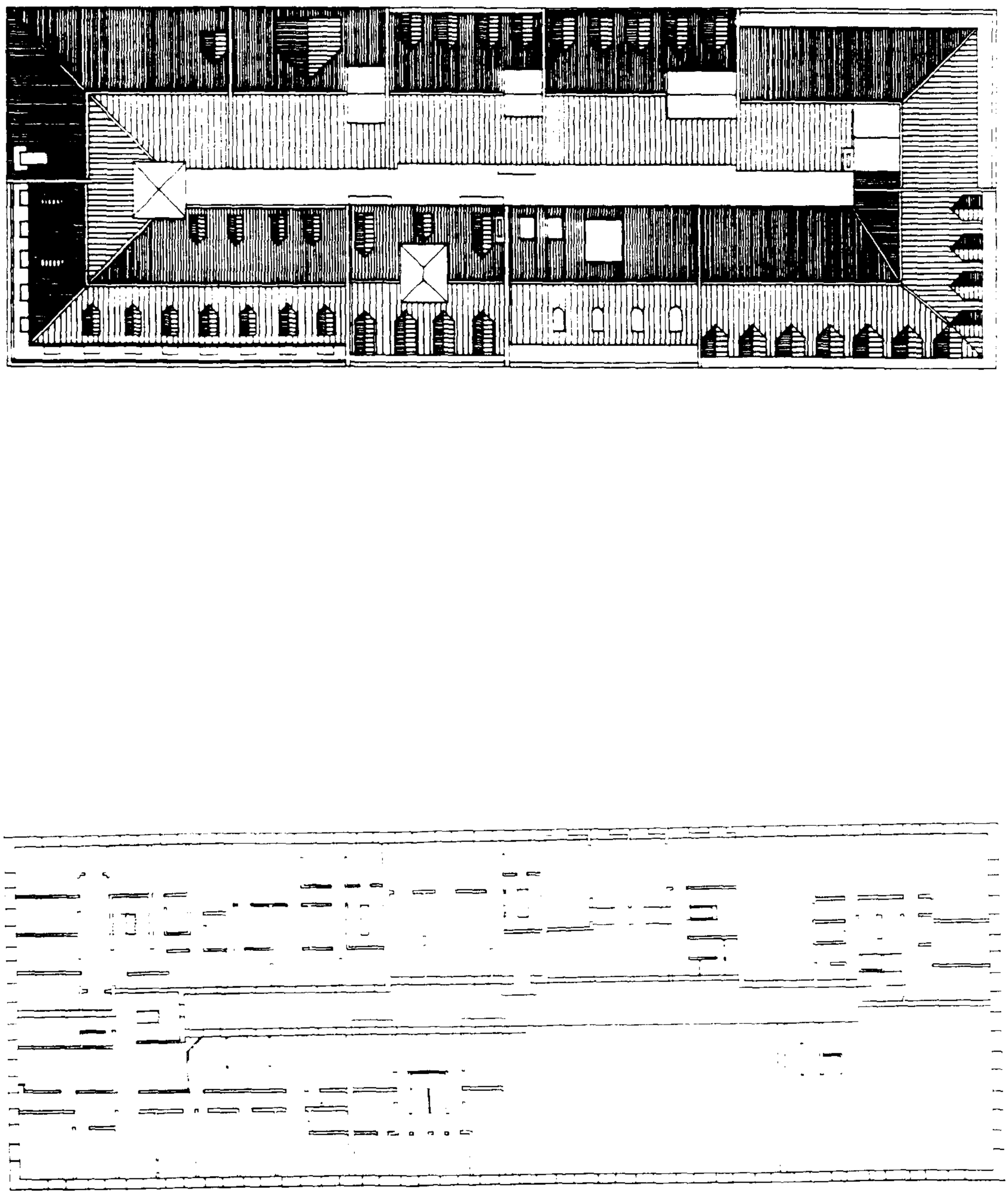


Figure 6.7 Plans and elevations of the surveyed buildings, Block C

6.2. Physical structure

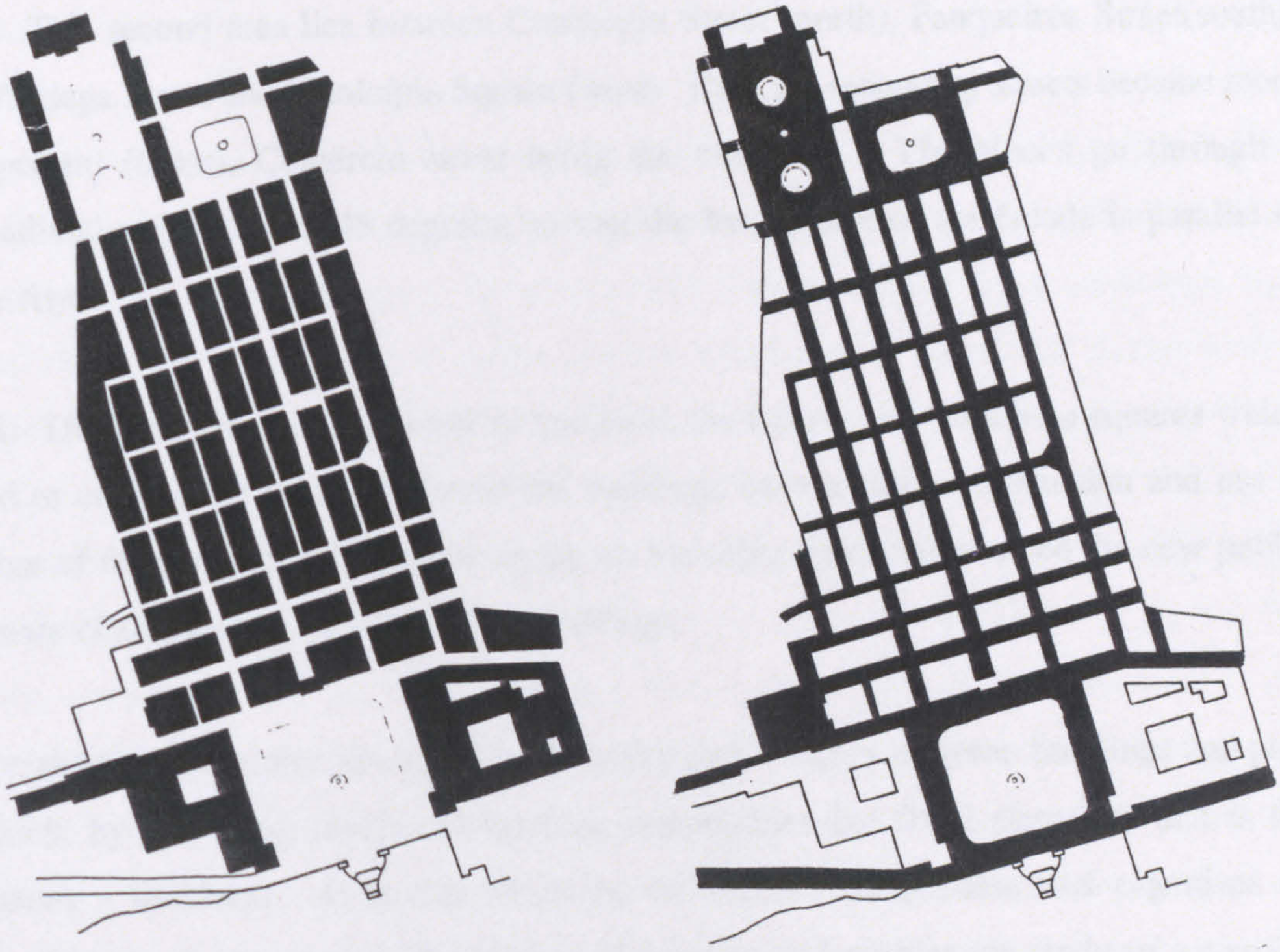
Through a simple analysis of the physical environment, shown in Figure 6.8 (that is the coverage ratio) one can have a clear idea of the basic characteristics of the area: form, pattern and density. The figures indicate 54% taken up by roads, 38% by the buildings and 8% for open free space. There is a high proportion of ground occupied by buildings and a very small percentage of free open space. The public spaces are significant but not very well used, catering only to the population using the city centre and not for those who live there. Public green spaces do not exist. Squares in which one could have rested, played or talked are used by traffic or as parking spaces.

The plan is based on a hierarchy of streets, which is composed of a network of secondary streets, disposed at right angles to the main streets and directly related to commercial and administrative structures. Three main areas can be distinguished as seen in Figure 6.8, they are:

(i) the first is limited by Ouro street (East), Rossio and Figueira squares, Fanqueiros street (West) and Conceição street (South). Here the main streets run parallel to each other and are crossed by secondary service streets. Both sets of streets are crossed at right angles by transverse secondary streets.

The main central area is directly related to the two squares, Rossio and Figueira. This results from the position of the south quarters[1], which are implanted with their smaller facade facing the square, therefore allowing for easy connection. This factor permits a continuity between the central area and the squares. However the link between this central area and the two neighbouring hills is rather difficult, especially towards the east side (the castle hill) because of the existence of a very long quarter which limits the area. The connection with the west side is much easier because the quarters are smaller and there is an elevator which links the lower area with Carmo square on the top of the hill.

[1] The term 'quarter' is used for the group of buildings in a block.



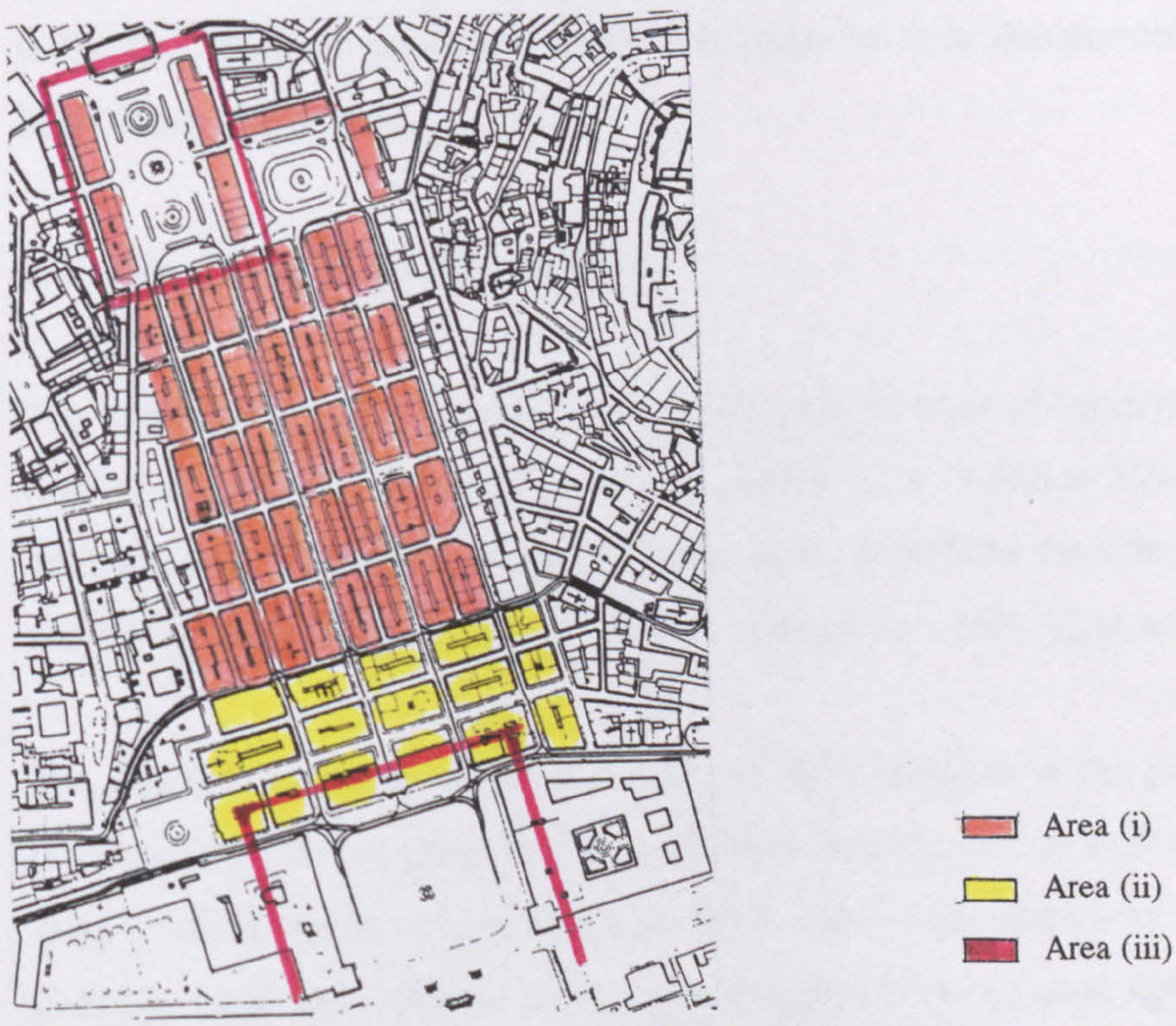


Figure 6.8 Physical structure and hierarchical areas of the plan

(ii) This second area lies between Conceição Street (north), Fanqueiros Street(south), Alfândega Street and Município Square (west). Here the secondary streets became more important (cross), Comércio street being the main one. The blocks go through a rotational movement of 45 degrees, so that the longer side of the facade is parallel to the river.

(iii) The third area is constituted by two locii, the Rossio and Comércio squares which end or enclose the grid. In Rossio the buildings have a similar dimension and use to those of the first area. Comércio square on the other hand claims to be the new public square characterized only by public buildings.

The rigidity of the plan is a result of the unity and integrity between buildings and plan which, by providing several hierarchies, manipulates the fixed elements, that is the quarter - buildings. It is this hierarchy of streets and quarters that organizes its constituent subsystems into the totality of the plan and enables the study of a specific quarter within the group of hierarchies. By studying a quarter it is possible to relate it to the first hierarchical area to which it belongs but it is also possible to relate it to the other hierarchical levels.

6.3. The Pombaline building block

The Pombaline block or quarter is the typological element of composition of the gridiron plan and the key element of the urban pattern. The building block is the instrument which forms the streets and square in the plan. It defines the urban scale, the use, the architectural order and language, (public and private, individual and collective).

The size of the blocks varies according to their position in the plan. Those forming Rossio and Figueira Squares, being narrower than the rest, as well as showing different interior divisions and sometimes no light-well. The blocks in the central area are compact, long and narrow, with a central light-well to provide light and ventilation to the back of the building. These light-wells have almost disappeared at the first floor level due to extensions to the shops. The blocks closer to Comércio square are slightly larger in cross section allowing for a wider light-well, however this is not enough for

good health conditions.

The plot division of the blocks varies throughout the plan. This is mainly related to the wealth of the investors who sometimes would be able to buy enough area for a two apartment per floor buildings (which is the most common situation), or sometimes only one. The number of entrances on the street is not dependent any more on the number of residential units contained in the block.

The size of the quarter defines the quality of the apartments in a building. The larger the block in the initial grid the more it is likely to be cut across by new streets, the more open space is enclosed within the blocks, the better living conditions it can provide. In Baixa the quarters are narrow and long creating a dense urban pattern and buildings with ventilation problems. The reason for this is primarily due to economic reasons. It is for this same reason that has been created floor additions in this area and in general a highly urban environment. The street is used not only as a space of distribution and orientation but also of economic and social exchange. The street is reduced purely to the function of access. There is a strict relationship between buildings, form of property and the form of the public space, the street.

The division of the quarter into blocks varies, as well as the interior division of each block and flats. It has been previously mentioned that there are no plans showing the interior of the quarters and that their design was carried out by individual enterprises.

In the survey carried out for this thesis two basic building types were found: buildings with a central staircase and flats at each side and those with just one flat per floor. At the ground level one finds the commercial area which in most buildings has destroyed the original spatial division. Through the dark stairway one reaches the flats, in which the internal division is very similar due to the standard length of each block. Usually there are one or two rooms at the front, lit by two or three windows (which vary in accordance with the floors); one internal and oppressive room without ventilation and illuminated through a glass on the top of the door; a kitchen at the back with a window overlooking a dark, cold and dirty light-well; and a lavatory, which is an improvised narrow space created at the back on a balcony. (see Figure 6.9)

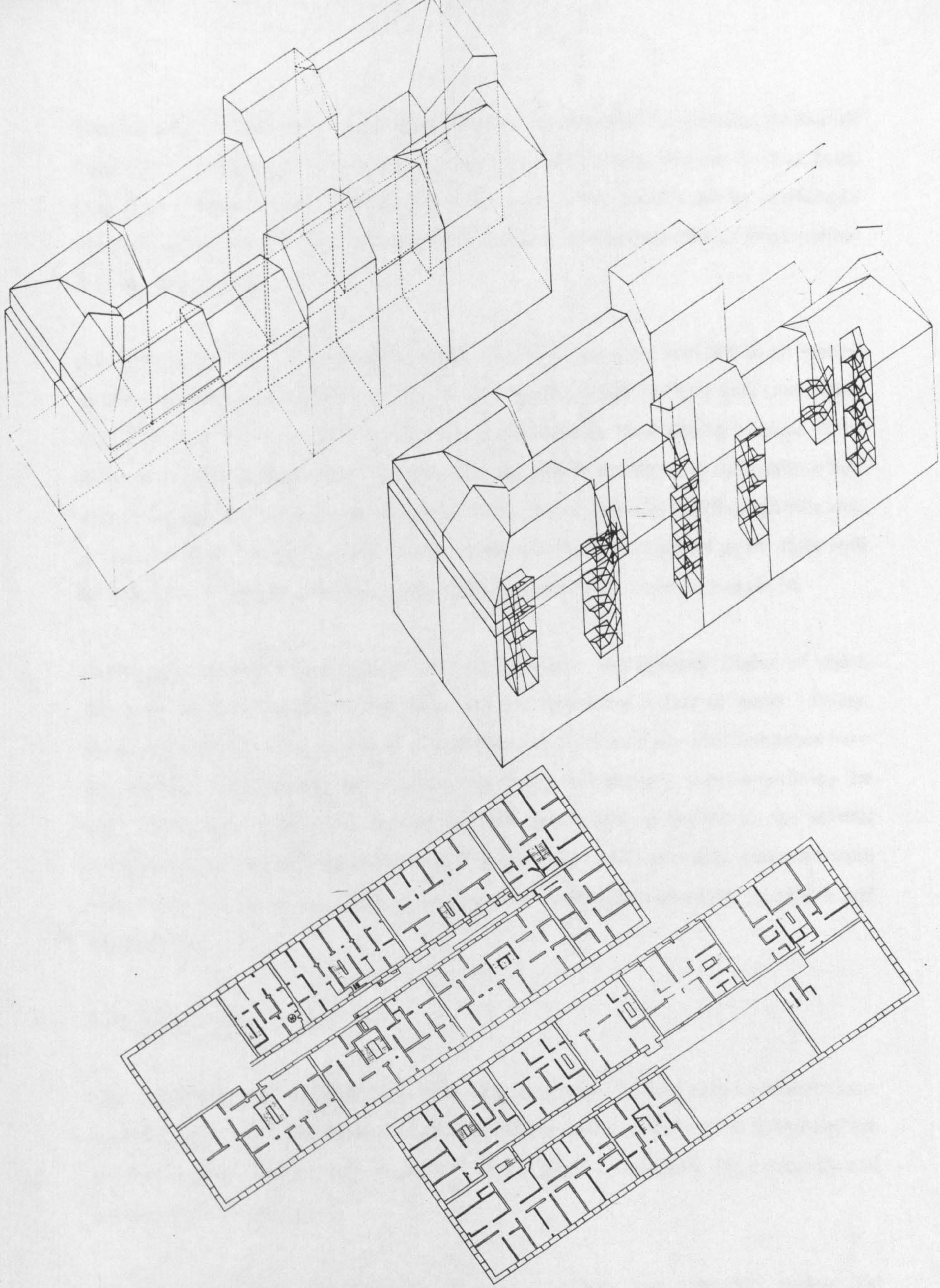


Figure 6.9 A surveyed block, its buildings division, entrances and staircases.

Some of the flats have been improved with a new kitchen and with the introduction of a bathroom, but the majority remain as in the eighteenth century, without the most basic provisions. Naturally this division cannot be seen in the floors used by services or commercial activities. There one finds it difficult to ascertain where the original internal division was located.

As can be seen from the original drawings, the staircases were intended to be located in direct relation to the building entrance, opening off a small entrance hall. (see Figure 6.9) However they now differ in type and location inside the building because of the different interior arrangements. Their relative position in the building and entrance also varies. Sometimes they are placed right at the back with light coming through windows at each landing. In such cases the light on the first floors is minimal as the light well is very narrow. Others are completely internal and lit only through a skylight.

These stairs are strictly functional with tiny landings and minimal flights of stairs. Some are of stone up to the first floor with the remaining flights of wood. Today, because of the various conversions at ground level, some of these stair entrances have become part of the entrance to the shops, thus losing their privacy, especially during the day. This lack is increased by the frequent movement of people to the several commercial companies established on the upper floors. Occasionally, elevators were introduced when there was enough space but more often than not to cater for offices and not residents.

6.3.1. The facade

The facade of a building is its most obviously perceived element, able to communicate both its function and significance. The Pombaline facades which survive to this day are noticeably plain, manifesting the concern of the epoch to rebuild a city as rapidly and economically as possible.

The original drawings produced by the Casa do Risco were extremely austere and showed buildings with a ground floor for commercial activities and three other levels intended for housing. Later facades were increased in height by adding supplementary

floors above the cornice. This process of addition started very early so that scarcely any of the buildings follow the original drawings. This may be due to the long process of building in Baixa, which was only completed by the middle of the nineteenth century, and also because of land speculation. The latter led to buildings having an additional two or three floors. In many cases those additions are well integrated with the original facade as they follow the same pattern. Nevertheless, although the elevations on paper could be satisfactorily extended in height, the streets were too narrow to accept these additions. (see Figure 6.10)

Today the Pombaline buildings reveal a different cultural situation, and their facades tell us about their present use. The ground floor is still used for commercial purposes, but housing is found mostly on the top floor, while the other floors are used for offices. Nevertheless, despite the alterations, particularly to the shops, the facades still show the rigidity of composition and they can still be referred to as Pombaline. Also very interesting is the integration of the churches both in the plan and the facade. They are part of the block which is part of the gridiron, and their facades also follow the same type of bay subdivision and proportion.

It is important to note that when writing about a Pombaline facade one means the group of different buildings which form a quarter or a building block. These measure 72mx25m. The standard Pombaline facade is a '*facies*' (Latin word for facade which is synonymous with appearance or face) which hides different interior building blocks. Sometimes, it is only from the dividing walls in the roof that one can distinguish the existence of different properties behind these extremely rigid and unified facades.[2]

[2] In this respect there is a difference between Lisbon and for example, the standard three-bay width of most Georgian developments in England.

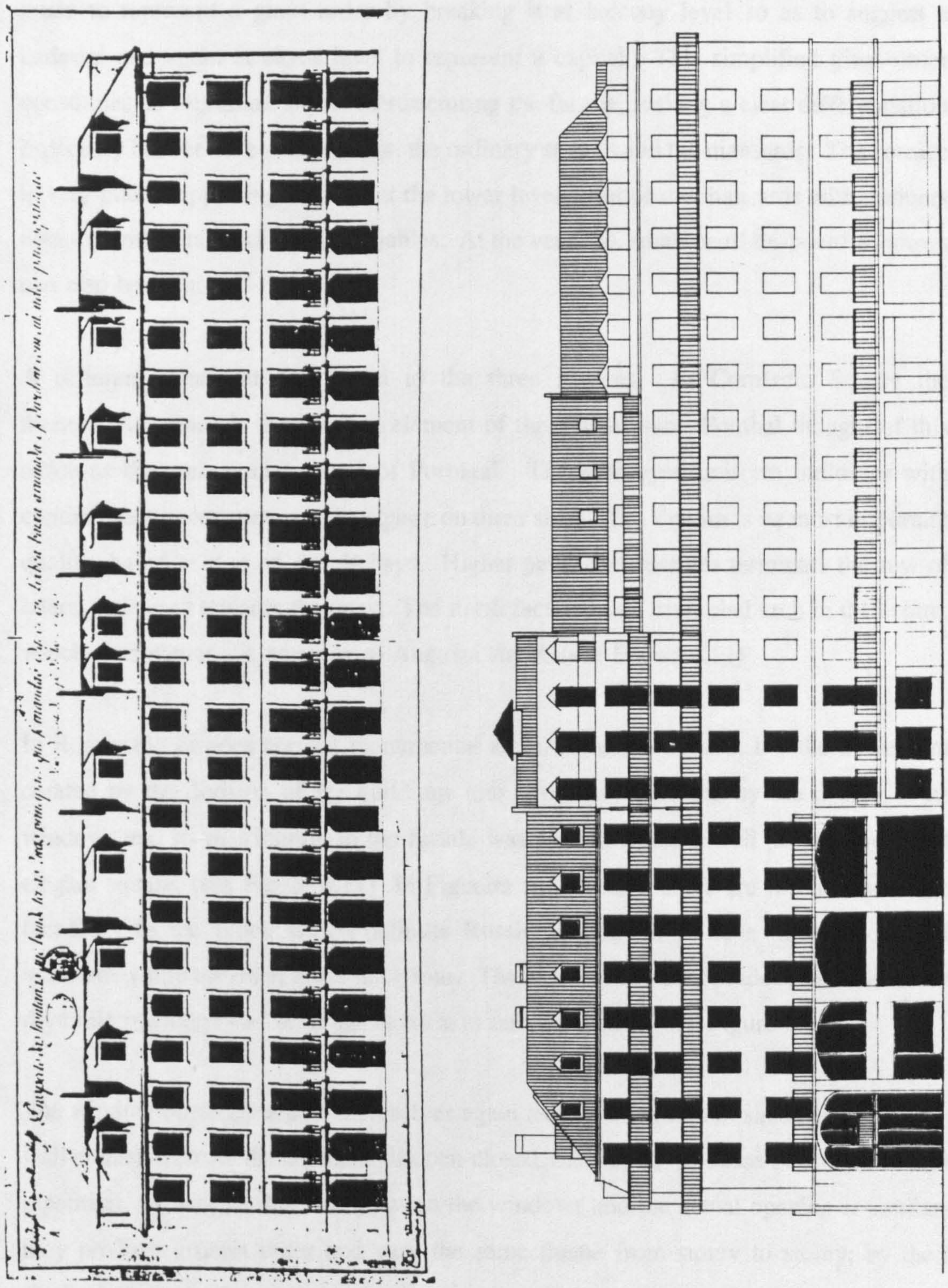


Figure 6.10 The Pombaline facade and its alterations

At each corner there is a stone pilaster, (perhaps influenced by Serlio through Terzi) made to represent a giant order by breaking it at balcony level so as to suggest a pedestal and again at eaves level to represent a capital. This simplified giant order constitutes an important aspect of structuring the facade, making a clear differentiation especially between the ground floor, the ordinary storeys and the mansards. The cornice is very plain, supporting the roof at the lower level. Above are mansards with dormers covered with small roofs without gables. At the very top, small oeuil-de-boeuf windows can also be seen.

A different treatment was given to the three squares. In Comércio Square the monumental space is the 'luxury' element of the whole plan. Pombal thought of this space as the commercial centre of Portugal. Three-storeyed uniform buildings with continuous arcades surround the square on three sides. The rhythm is its most important quality, based as it is on arcade bays. Higher pavilion structures terminate the row of lateral buildings towards the quay. The north facade has a triumphal arch in the centre, which accentuates the entrance to Augusta street. (see Figure 6.11)

In Rossio the facades are not monumental as in Comércio Square, but the movement created by the division of the buildings into several blocks, and by the design of its windows and its distribution in the facade was able to create a well proportioned and elegant square. (see Figure 6.11) In Figueira square three sides are formed by single facades. In the block which delimits Rossio the buildings have three floors and mansards while the other sides have four. The extension of the facade fronts with their rhythmic openings and scale harks back to colonial times. (see Figure 6.11)

The window openings repeat themselves again and again, which in succession with the wall elements create the contrasts of open-closed, dark-light. Because of this periodical repetition, (where the distance between the windows and the actual opening is similar) they produce a quiet order and vary the same theme from storey to storey, by their rhythmical diminution towards the top (appropriate because the light quality increases). This underlines the perspective of the facade and makes the buildings appear higher. (see Figure 6.12)

Figure 6.11 Comércio, Rossio and Figueira squares

Figure 6.12 Window types

The hierarchical differentiation among the different streets was also continued in the type of windows and their decoration. In the main streets, there are stone surrounds to the French windows and casements; those on the third floor are ornamented with a keystone joined to the string course and cornice; the surrounds in the casement project beyond the sill level in a way that simulates a cornice. The French windows are joined by a small string course, which also links the doors with plinths. Haunches decorate the dormers. All these are found in Rossio, Comércio, Figueira and the boundary areas up to Palma street (East) and the Carmo, Nova do Almada streets, (West) in the Município Square extension, S.Paulo Square, Madalena, S.Paulo and Bacalhoeiros Streets. (see Figure 6.12).

The facades in Nova da Princesa and Madalena Streets have window surrounds without the keystone; although the cornice is still there, and the haunches in the dormers have disappeared. In the secondary streets such as: Douradores, Sapateiros, Correiros, Crucifixo and Pedras Negras, the window frames became very simple, nothing more than a square line as in the French windows of the first floor. The narrow streets on the south-north axis also have this type of window frame. In the east-west area Santa Justa, Vitoria, S.Nicolau and Conceição streets the French window is not found and the decoration is mixed.

For Rossio square, with its 16 thousand square metres, Carlos Mardel created a model which consists of a French window between two sash windows, in which the dynamism is emphasized through a pattern of pilasters joining or separating the unities. The French window, adapted to the taste of the day, forms part of a whole with the door. Above the first floor he used simple sash windows. In Comércio square, both the windows in the first and in the mezzanines are French windows. In Figueira Square there is a general use of sash windows, although there are some French windows at the first level and in the top extension at the roof level.

It is important to underline the lack of relationship between most shop-fronts and the Pombaline buildings into which they are set. The visual chaos caused by the insertion of shop-fronts unrelated both to the buildings and the street is widespread all over Baixa Pombalina. This can result in the whole of shop's facade being covered by a new

material which is completely out of harmony with the building and the street. This curtain covers existing windows and destroys the architectural unity of the street. If a shop occupies the ground floor space of the whole building, or two continuous floors, (as is the case of Casa Africana or Lojas das Meias, among others) a continuous fascia will proclaim the extent of the shopkeeper's empire by running across and along the facades of all the buildings without any concern for architectural detail and decoration (see Figure 6.13).

It is rare that a shop front design will relate in material and colour to the upper part of the building. The shop window is generally one single sheet of glazing in a frame of hardwood or metal, often bright aluminium. Above this, windows reveal floors of vacant, under-used or miss-used space. These are often used for storage which can be seen from street level.

One can also see that shop-fronts, advertisements, signs and all their associated details can have an often detrimental effect, on the appearance of an individual building as well as on the character of the street as a whole. An objective appreciation of the building and the street should be a minimum requirement for any designer. Advice should be given against the use of boxed and illuminated fascias which simply represent another element in the facade by the creation of a raised plane. The use of a well designed projecting sign can enhance both the shop-front and the street. Sensitive design, care and an appreciation of the street as a whole can provide pleasurable shopping, with the result that people will positively enjoy shopping there, have a sense of belonging to the place, and most important, want to return.

Baixa Pombalina buildings show very poor decorative components. The perception is of very plain facades in which the openings are underlined and the balconies embellish the first and upper floors.

Figure 7.13 Shop-fronts

Figure 6.14 Balconies

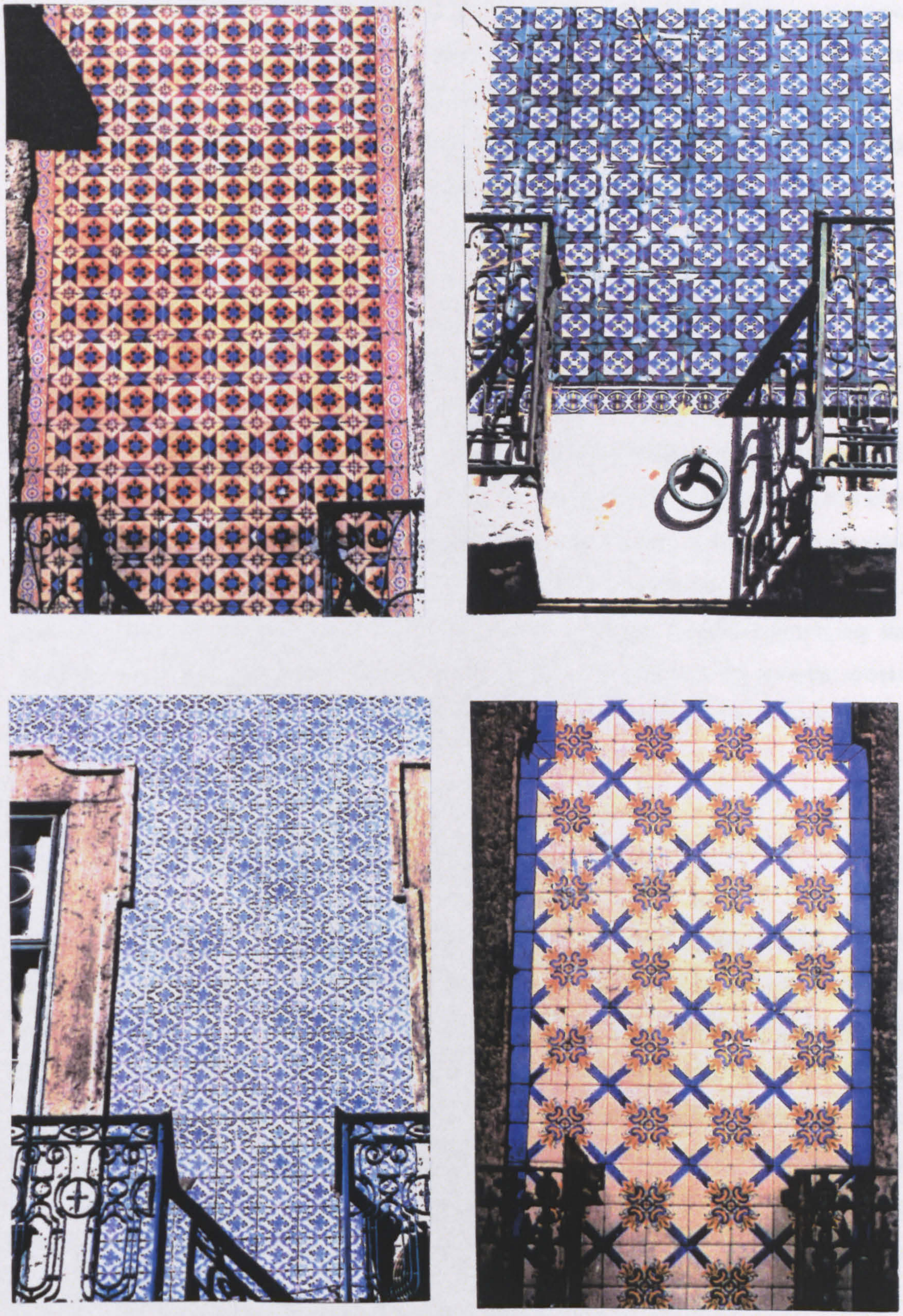


Figure 6.15 The use of tiles in the facades

The balconies in the Pombaline buildings are genuine enlargements of the apartment, providing a sense of stepping out of the building-out of the facade. They were ornamented with a simple balustrade in wrought iron, a design which was inspired by seventeenth-century examples. The elements were placed at intervals of 0.16m, allowing them to be adapted to any length of balcony (see Figure 6.14).

The tiles were very well adapted to the new Pombaline building. The pattern named '*tapete*' (carpet) or '*laçaria de rosas*' (rose bow) was previously used in the seventeenth century, but it became unfashionable during João V's reign, when the vogue was for historical themes. Each tile has a single motif which is easily related to others so permitting the creation of different compositions and different panel sizes. These panels were used as decoration for the stairs and dados. The motifs were a star-flower in blue and a yellow cross with a smaller flower in the centre. Later, some buildings were completely covered with tiles, which gives colour to very pale facades. They are a powerful decorative element, as they break the continuous facade, reinforcing the openings lines and at the same time reflecting light so necessary in the narrow streets. The use of tiles and other colours for painted areas would embellish these facades. (see Figure 6.15)

6.3.2. Buildings construction

The attitude of the Casa do Risco das Obras Públicas, an office expressly set up for the reconstruction project, was heavily influenced by the training and experience of its staff who were experts in military engineering. The precise, practical and functional approach of military discipline underlies many of the solutions proposed. An example of this is in the rationality introduced into the construction and technological processes. Citing the economic advantages and speed of execution, the engineers ordered that a whole series of modular components be manufactured in distant workshops (including structural elements, shaped stones, door and window frames and timber) and be rapidly assembled on site.

The *standardised elements* of the wooden structures were erected at high speed, to be covered with brickwork at a later stage. An important step was taken at the building

construction level. This was the transition from a craftsman stage to another which could be called 'pre-industrial'. This was a considerably important economic feature for Portugal at that time.

For many years it was believed that Baixa Pombalina buildings had wood pile foundations and that their method of construction was of wood frame and masonry called '*Gaiola*'. Literally this means a cage, and it is similar in many ways to the 'balloon-frame' introduced in Chicago at the beginning of the twentieth century, which rapidly spread throughout the American continent.[3] It was also argued that it was a novel method of constructing buildings with three floors and a mansard as compared to the old stone masonry building construction used previously. However, during work for the construction of the Restauradores, Rossio and Socorro underground stations in 1960-61, a geophysical study was carried out. This permitted an analysis of the several systems of construction used in the Pombaline buildings and in those that preceded them, this raised doubts about several long-held beliefs concerning construction in the area (see Figure 6.16)[4].

The excavations led to the discovery of various levels of sediment, of which a considerable volume can be attributed to earthquake debris. Between Figueira Square and Amparo Street a Roman necropolis (the pavement of which was 6m lower then the actual ground level) and a Roman road, surfaced with concrete, were found.

As referred to in an earlier chapter, the area where Baixa now stands was, before the earliest historic settlements, a branch of the river Tagus. The existence of a water table around 3.50m below the ground surface but without tidal influence, was detected during the excavations. The debris and alluvium thickness in Figueira and S. João de Câmara Squares respectively are 30m and 21m. The alluvium is made up of mud, sand, limestone, margas with or without pebbles, and may be considered to be in equilibrium.

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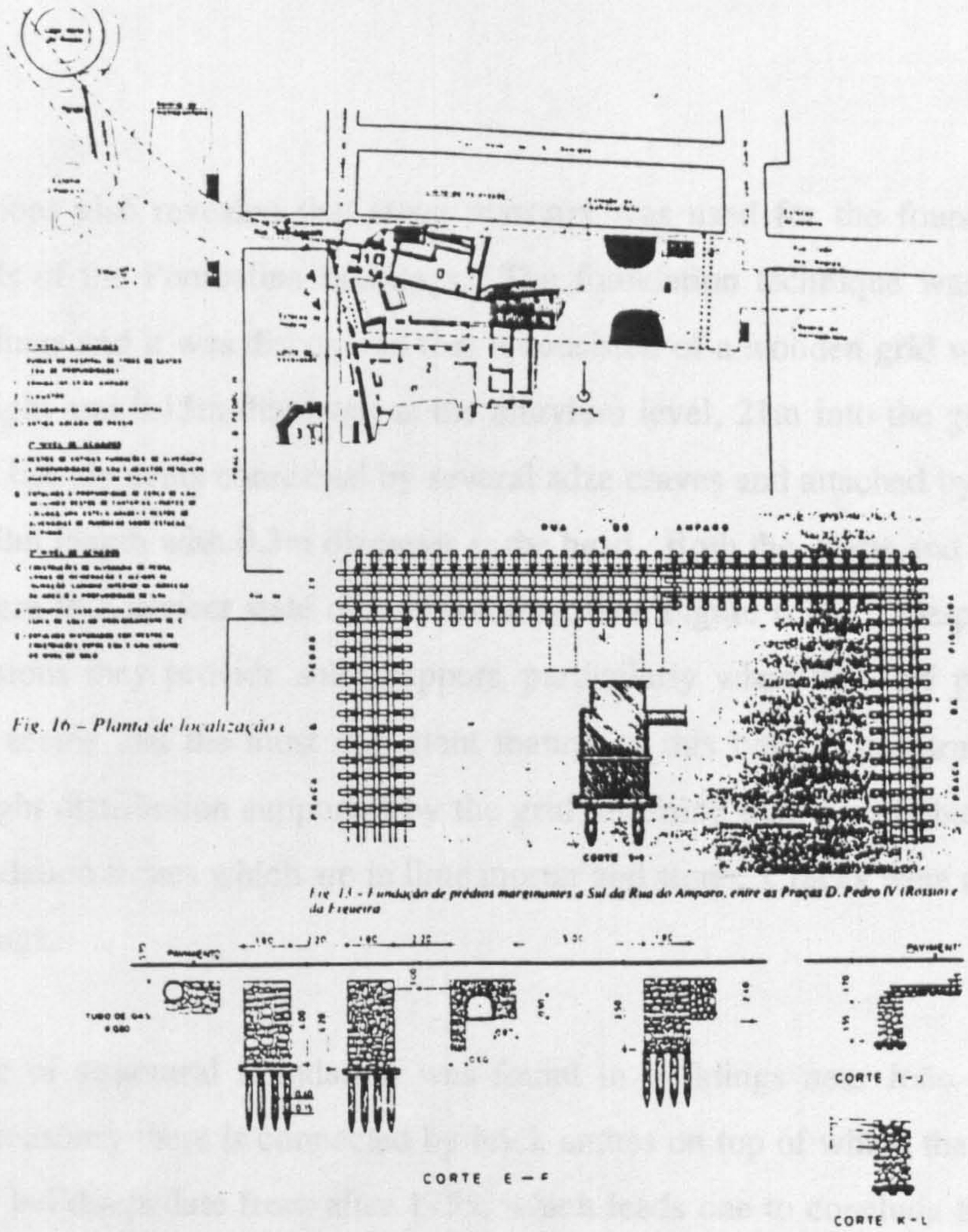
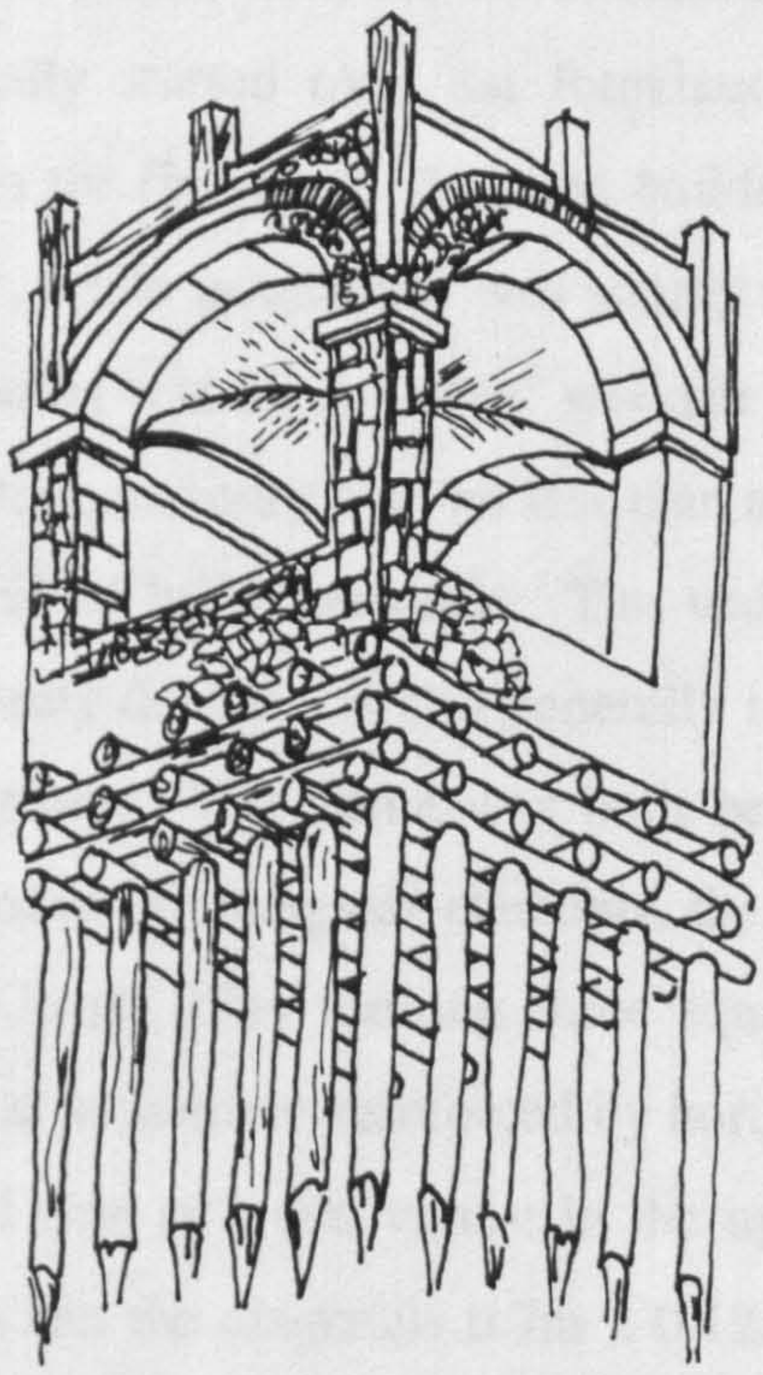
[3] See: SPRAGUE, P.E., 'Chicago Ballon Frame', The Technology of Historic American Buildings Studies of the Materials, Craft Processes, and Mechanization of Building Construction, Foundation for Preservation Technology, 1983, p.35-50.

[4] Drawings produced by students at Lisbon's Faculty of Architecture under the supervision of Victor Lopes dos Santos, 1991.





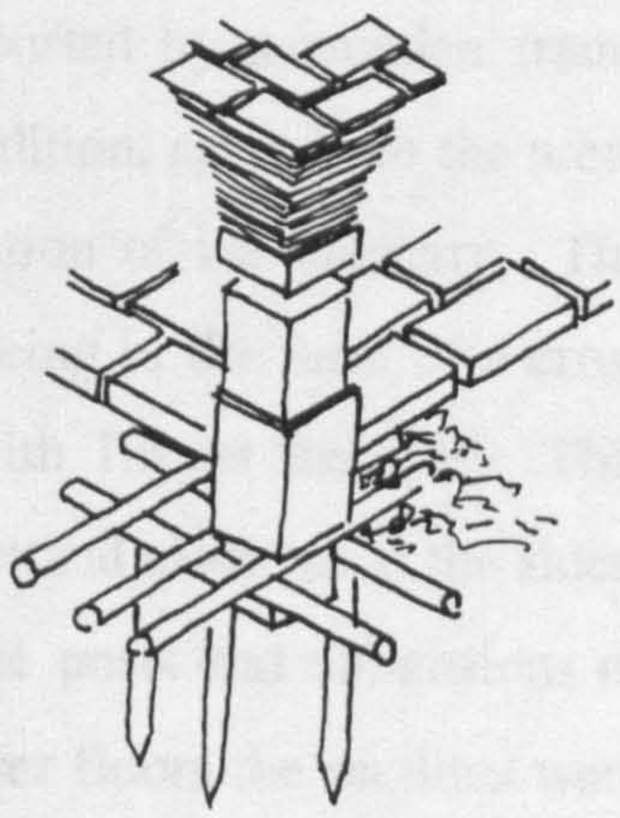


Figure 6.16 Excavations finding and the building foundations.

The excavations also revealed that stone masonry was used for the foundations and exterior walls of the Pombaline buildings. The foundation technique was studied in several buildings and it was discovered that it consisted of a wooden grid with posts of 1.50m in height and 0.15m diameter, at the alluvium level, 21m into the ground. The wooden grid has elements connected by several adze craves and attached by large bolts reaching 0.40m length with 0.3m diameter at the head. Both the posts and the grid are of pine and are in a perfect state of conservation. (see Figure 6.16)[5] Despite the posts' short dimensions they provide solid support, particularly when they are placed close together. It seems that the most important feature of this type of construction is the uniform weight distribution supported by the grid, meaning that it was able to support the first foundation stones which are in lime mortar and stone. Cracks were not detected in the buildings.

Another type of structural foundation was found in buildings near João das Regras Street. The masonry there is connected by brick arches on top of which the walls were built. These buildings date from after 1755, which leads one to conclude that the grid system and short pillars used for the foundations was no longer in use. The wooden box-frame usually started over the foundation, that is above the ground level, or sometimes from the first floor. In some buildings the box-frame was inserted into the walls' masonry, while in others it was simply leaning on its interior side. In this case a system of binding was used, *"mãos"* wooden pieces, or iron '*esquadros*'. The exterior walls were of stone masonry with no less than a 0.80m thickness, the interior ones being 0.20m thick and of brick masonry. The walls were supported by a wooden frame which, after twenty decades, is still generally in perfect condition, apart from the areas close to the kitchen. The frame was built before the erection of the masonry. The structure was made of triangular elements, the main ones being in the form of a cross (Santo André Cross), thus forming three square panels with 1m on the side. This triangulation was sometimes reinforced by horizontal and vertical elements at the sides. The design and type of wood varies: in the upper floors the posts had dimensions of 0.10m x 0.16m and the diagonals 0.7m x 0.12m; in the lower floors the sections were 0.16m x 0.16m and 0.10m x 0.16m, respectively.

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[5] Ibid., Santos, V.L., 1991.

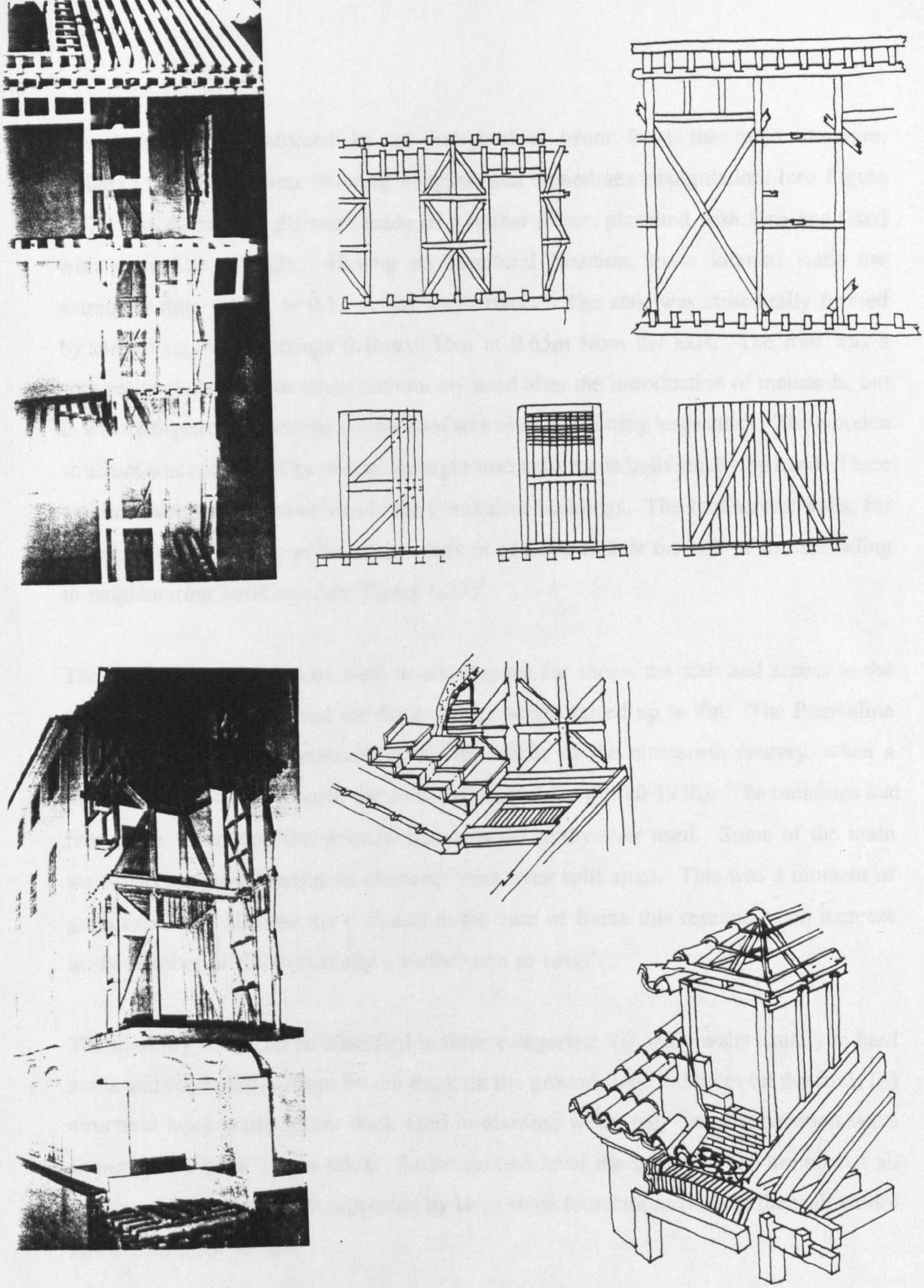

Figure 6.17 Interior structure and a mansard roof.

The doors were reinforced by an independent beam from the main structure, 0.10mx0.16m, sometimes showing noggins, and sometimes triangulation. (see Figure 6.17) The partition walls were made of a timber frame, plastered with lime and fixed with wrought-iron nails. Having no structural function, these internal walls are extremely thin, 0.10m or 0.12 m but very elastic.[6] The stair was structurally formed by three longitudinal strings 0.16mx0.16m at 0.65m from the axis. The roof was a conventional chestnut structure, commonly used after the introduction of mansards, but in Rossio Square the German double roof was used, permitting large attics. The wooden structure was connected by several wrought-iron nails made individually by hand. There are, however, some innovations in the Pombaline buildings. The roof screen walls, for example, were built up as far as the roofs in order to reduce the risk of fire spreading to neighbouring buildings.(see Figure 6.17)[7]

The ground floor used to be wide to allow space for shops, the stair and access to the upper floor were larger and the floor-ceiling height raised up to 4m. The Pombaline system of construction survived up to the middle of the nineteenth century, when a different type was developed, the so-called '*Gaioleiro*',(1880-1930). The buildings had five or six floors and the wooden frames were hardly ever used. Some of the main walls and horizontal structural elements were even split apart. This was a moment of great expansion all over the city, and in the case of Baixa this resulted in an increase in the number of floors (usually a further one or two).[8]

The masonry walls can be classified in three categories: (i) main walls usually in hard stone and mud plaster, from 90 cm thick on the ground floor to 50 cm on the fifth; (ii) structural brick walls 30 cm thick used in dividing walls; (iii) interior partition walls in perforated brick 15 cm thick. At the ground level the interior walls are almost all resistant. All the walls are supported by large stone foundations (double the wall width) filled with thick stones.

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[6] During the 1980 earthquake in the Azores islands they proved to be very resistant, acting often as a support for the roof.

[7] Ibid., Santos, V.L., 1991.

[8] The area that goes from Arroios to Campo de Ourique and Campolide are basically built in this new system.

Floor levels are made of beams archored directly onto the walls. In some buildings there is a lateral binding system with metal straps or plates. By the middle of the nineteenth century, small compartments used as lavatories started to appear at the back of the buildings. Around 1930 concrete was used for the first time in thick pavings and gradually replaced those made of wood, particularly in the kitchens, toilets and balconies.

In summary, it seems appropriate to revise previous suppositions or at least to question those concerning the Baixa system of construction. Only with a rigorous survey would it be possible to be certain of what really exists in these buildings' structure and foundations. For our purpose six main ideas can be emphasized:

(i) A deep branch of a river does not exist in Baixa.

(ii) There is no influence from the sea ground level.

(iii) The pine piles used in at the foundation grid were previously used in other constructions.

(iv) The posts had a different structural function, from that of today.

(v) A small percentage of buildings only were built following the 'gaiola' wooden frame system of construction.

(vi) The buildings present a combination of construction processes because Baixa Pombalina was completed only in the middle of the nineteenth century and a new system of building had started. Another reason is because of the very recent interventions, especially the introduction of offices.

6.4. Building conditions

The *building conditions survey* aimed to determine the state of interior and exterior conservation of the buildings. It assessed the reliability of specific building elements in relation to established standards or limits of acceptability for a particular function. Reliability is expressed as the probability that a service or construction element will continue to perform as intended throughout the life of the facility, given appropriate maintenance and use.[6] The survey was carried out on all the floors. The exterior

[6] Davis, G., Building Performance, Gerald Davis, Teag - The Environmental Analysis Group, editor, 1986, p.8.

conservation shows 2057 cases studied and the interior conservation 2134. This difference is due to the fact that the buildings have one or two levels of basement and no exterior facade.

Criteria were established for the condition of the fabric, both exterior and interior: Good; Reasonable; Bad and; Ruined. (see Appendix 4)

In the surveyed area the buildings are in various states of repair and maintenance. Many buildings are structurally sound but at the same time in a poor state of repair; others are apparently bad externally while the interior is in good condition. This is the result of continual change which Baixa Pombalina has been undergoing over a long period of time. Generally, the buildings are old and show urgent need of repair. It is even surprising that the amount of decay is relatively small if one realises that these buildings have been neglected for many years. (Works of repair and maintenance are recorded in the City Council archives only for buildings where new structures were introduced). Table 6.1 shows the results of the survey.

Table 6.1 State of the Buildings

	Interior		**Exterior**	
	Number	%	Number	%
Good	839	46%	867	43%
Reasonable	636	35%	794	40%
Bad	336	19%	341	17%
Ruin	4	0.002%	2	0.001%
Total with information	1815	100%	2004	100%
Without information	*319*	*15%*	*53*	*3%*

Figure 6.18 Exterior conservation; Ground floor and First floor.

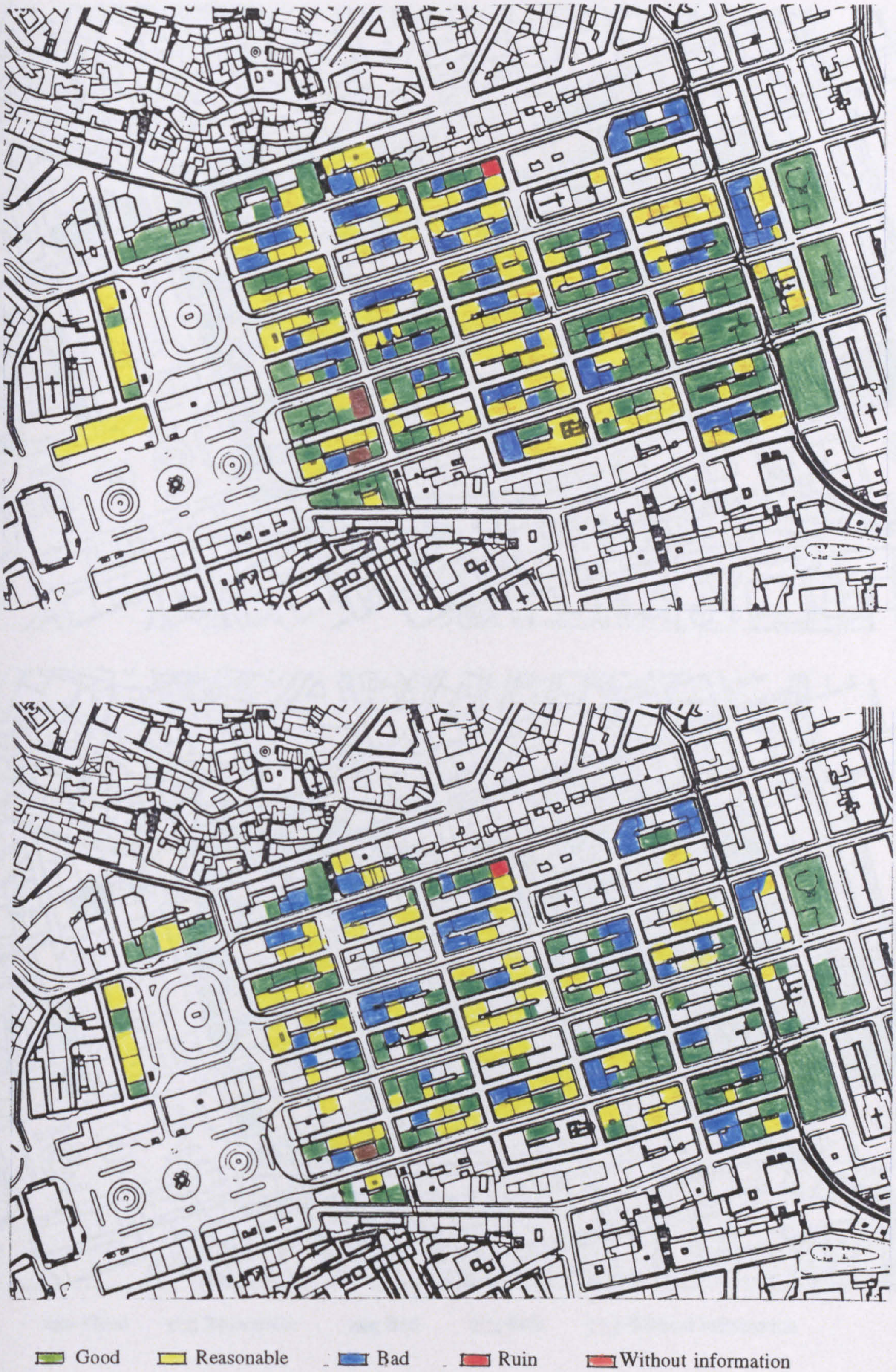

Figure 6.19 Exterior conservation; Fourth and Fifth floor.

Figure 6.20 Interior conservation; Ground floor and First floor.

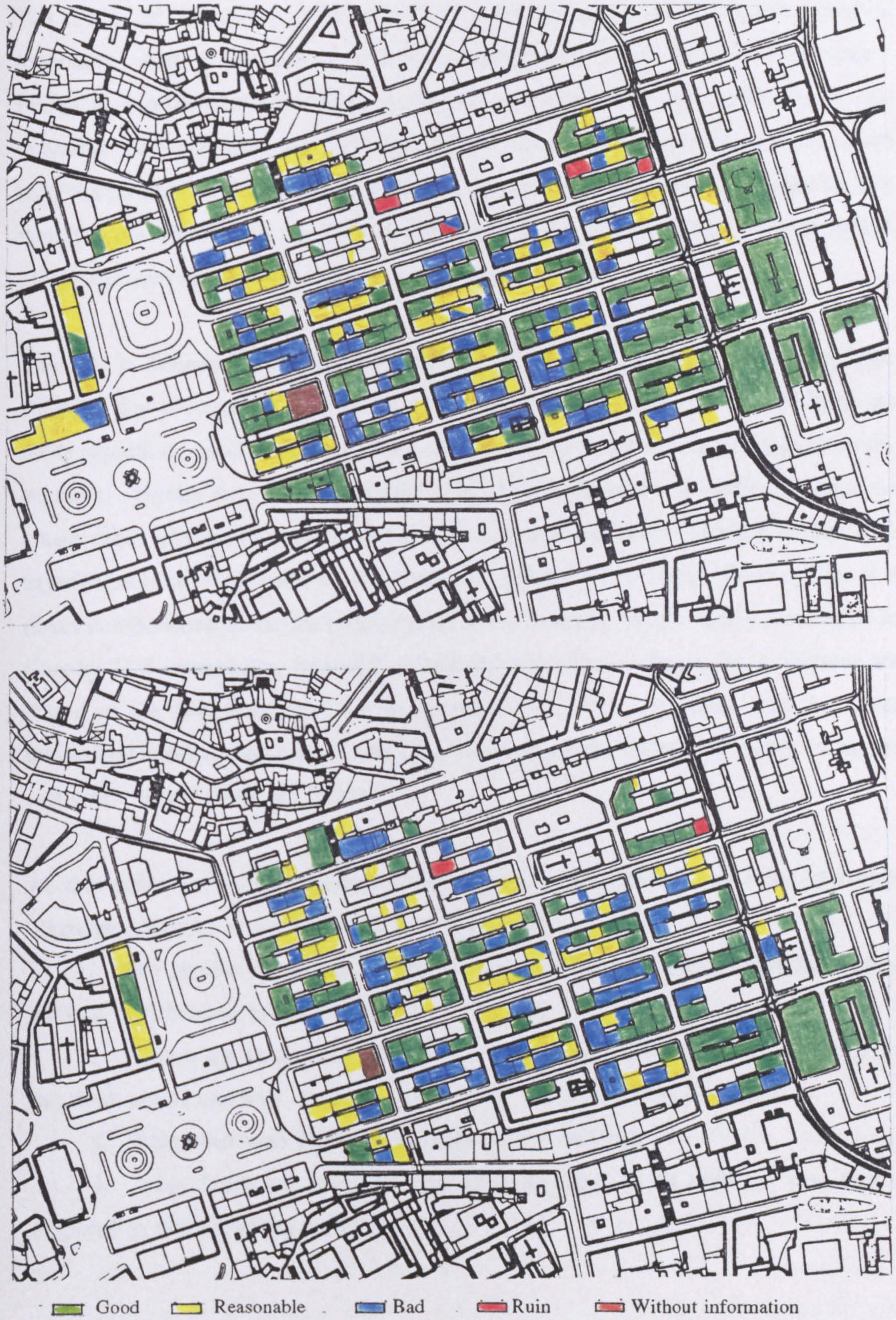

Figure 6.21 Interior conservation; Fourth floor and Fifth floor.

The results of the survey show that 43% of the buildings are in a good condition externally, whereas interiors in a similar condition are found in 46% of the cases. Found in a reasonable state there were 40% externally and 35% internally, in bad condition, 17% externally and 19% internally. In all categories there were floors which received no answer 53 and 319 respectively. This large percentage found in the interior conservation results from the difficulty of obtaining information either on floors where old people live and in those used as warehouses or closed.

There is a difference between the interior and exterior condition of the buildings, showing that the exterior is in better condition than the interior. However there are other aspects to consider such as where this gradation is located, in the plan or in the building. Figures 6.18, 6.19, 6.20 and 6.21 show a selection of maps in which the conservation conditions are coloured per building and per floor. This shows that both exterior and interior conditions deteriorate on progressively higher floors. This is a direct consequence of the uses established in the building (issues further developed in Chapter 7), housing being less well maintained than offices. Internally, conditions are better on the first floor than on the ground floor. It is also clear that the better maintained buildings are concentrated near the main streets where land values are higher and where better shops are located.

At this point we follow Michael Ross suggestion to address four basic questions whenever working in a new use for an old building.[7]

1. The present use of the building: Can it still be used for this purpose with or without modification to the structure?

2. What is the structural condition of the building? Is it sound? If not, what are the weak points and how do these relate to any possible alternative uses?

3. What other uses might be suitable for the building?

4. What funds are available, and how do these fit in with the possibilities explored in the rest of the study?

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[7] Ross, M., Planning and the Heritage, Policy and Procedures, E.& F.N. Spon , Chapman and Hall, London, 1991, pp.166-167.

Some answers might be:

1. In general, the buildings need upgrading, whether they will maintain the existing functions or a new ones. This basically involves the rehabilitation of the interior courtyards in order to acquire light and ventilation in all the building compartments, kitchens and baths. According to this a change will be required in the existing structure.

2. The structural conditions of the buildings differ; in general they are structurally sound, showing nevertheless some weak areas such as the water and electricity systems, which have become a great danger. Together with this there is the enormous weight that the buildings have to support as many of the floors are used as store places for shops. The danger of fire is always present and the very recent experience of the Chiado area should not be forgotten. The blocks are in themselves extremely compact and the distance between them in the secondary and crossing streets is very small. Therefore the possibility of a fire being transmitted to a larger area is enormous. The buildings are structurally built of wood without fire escape stairs and there are many internal divisions.

3. Baixa Pombalina buildings are used differently but in general they present commercial activity at the ground-floor level (sometimes at the first floor), services on the first, second, third (and sometimes fourth floor), housing on the fourth and top floors. This obviously differs from building to building, from street to street. Some buildings can easily be adapted to this same functions, while others have to be considerably altered.

However, in order to answer this last question and the following one, further information on the socio-economic and the legal and financial matters is required. It is important to know who is living or working in these buildings, who are the owners, and what are their aspirations and requirements for the present and the future. It is necessary to understand these buildings' context in the whole city and to plan their future in accordance to the city's general plan.

6.5. Conclusion

In Baixa the streets and squares are open public spaces, while the dwellings are enclosed private spaces. Consequently one has only two options: either a crowded busy place belonging to everyone or a private space (the flats) resulting from Baixa's urban plan and its buildings' typology. There is a rigid gridiron street pattern based on an hierarchical system of main, secondary and cross streets and a compact building quarter with narrow lightwells. The blocks are compact, long and narrow. There are no back streets or courtyards nor places which belong to the residents (or have a semi-private use) and are used by the community. In Baixa today it is impossible to have a sense of belonging.

Along the streets there are no attractive places to stop. Even the very recent pedestrianization of some cross streets, which encouraged the appearance of esplanades and seats, does not benefit the residents as they are open only during the shopping hours. When arriving at any of the three squares the feeling is the same. There is a lack of attention given to public spaces which does not encourage local inhabitants to make more frequent use of them.

In order to be well-used, the streets of Baixa Pombalina ought to be safe. For that to happen two major factors have to materialize: one is the introduction of housing in the area, which ought to put an end to the unsafe deserted streets during the evenings; the other element is the reduction in the volume and speed of traffic (As we will see in Chapter 7 and 9). A good neighbourhood is achieved by a balance between people's privacy and their simultaneous wishes for contact, enjoyment and help and support from those around them. Children need a variety of spaces in which to play and learn. They need opportunities for exercise and sports, but they also need an unspecialized outdoor home base from which to play and 'pass the time'. Old people need spaces where they can sit, chat and rest for long hours. Young people need spaces for exercise and sports, to rest and to sustain social contacts. However it is not expected that Baixa will provide all this variety of spaces. What is expected is a better use of the existing spaces, such as the squares and the river front.

For housing to be introduced many other requirements have to be met as we will see in the following chapters. From the survey carried out several immediate improvements can be introduced in the buildings: a) freedom from damp; b) efficient drainage; c)stable structural conditions; e) roof repairs. In fact he buildings are not well maintained and show that the degradation of conditions is related with the economic welfare of the users, which coincides with the residential use.

A detailed structural survey of each building should be done, using new techniques. The surveyor should be using a moisture meter, metal detector, fibre optic probes, salt detectors, hygrometers, infra red thermography, etc. Only then would he be prepared to advise on the future problems that may occur with the various components of the building and of the possibility of adapting the property to a different or to the same use.

The building's facade (although very plain) represents a prime example of eighteenth and nineteenth century architecture. The facade is an integral part of a large, unified design and would be impossible to replace without restoring the unity and integrity of that design. The facade would preserve the identity and character of the streets and of the Pombaline plan. The facades are an integral part of the area, therefore their retention would be desirable.

The best solution would be the retention of an existing building's external envelope, together with most of its interior with minor internal structural alterations and upgrading of finishes and services, because it would be cheaper than any other option. This would produce 'new' accommodation in a much shorter time. It is also known that some of the best re-uses have been those which have left the original fabric substantially intact. However, if that is not possible the next option would be facade retention. Whenever possible the wooden cage should be rehabilitated and restored because it constitutes a structural element which works as a whole, and is a fundamental component of the Pombaline building.

There is always a limit to be respected, based on internal limitations and relationships with the setting which must be taken into account, particularly if one is dealing with a

large scale intervention such as that in Baixa Pombalina. It is necessary to identify up to what limits these changes can go. As previously mentioned it is necessary to have, apart from the physical features, other views of Baixa. In the following chapter we aim to learn about the social components of the area.

Chapter 7

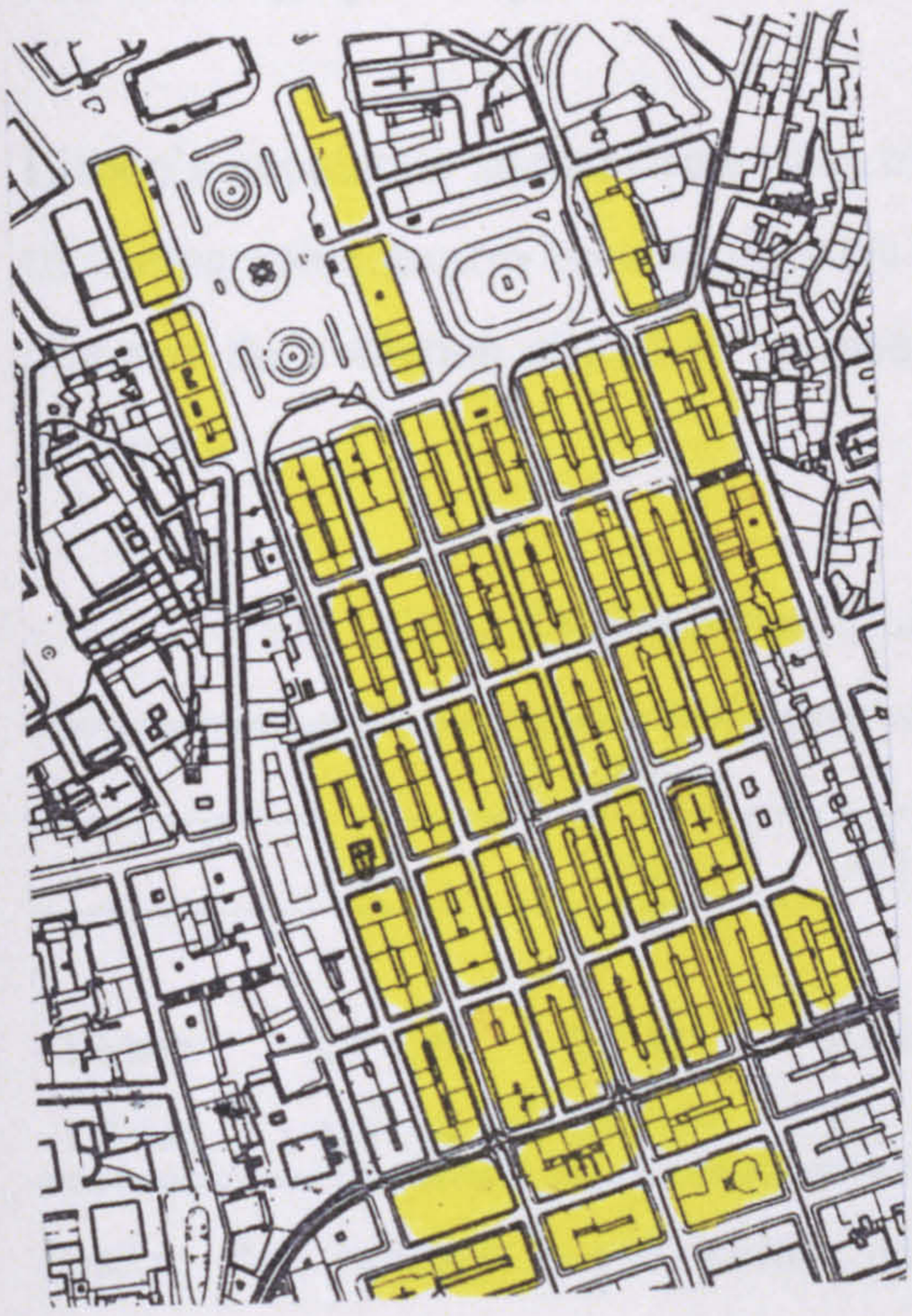
Social and Living Conditions

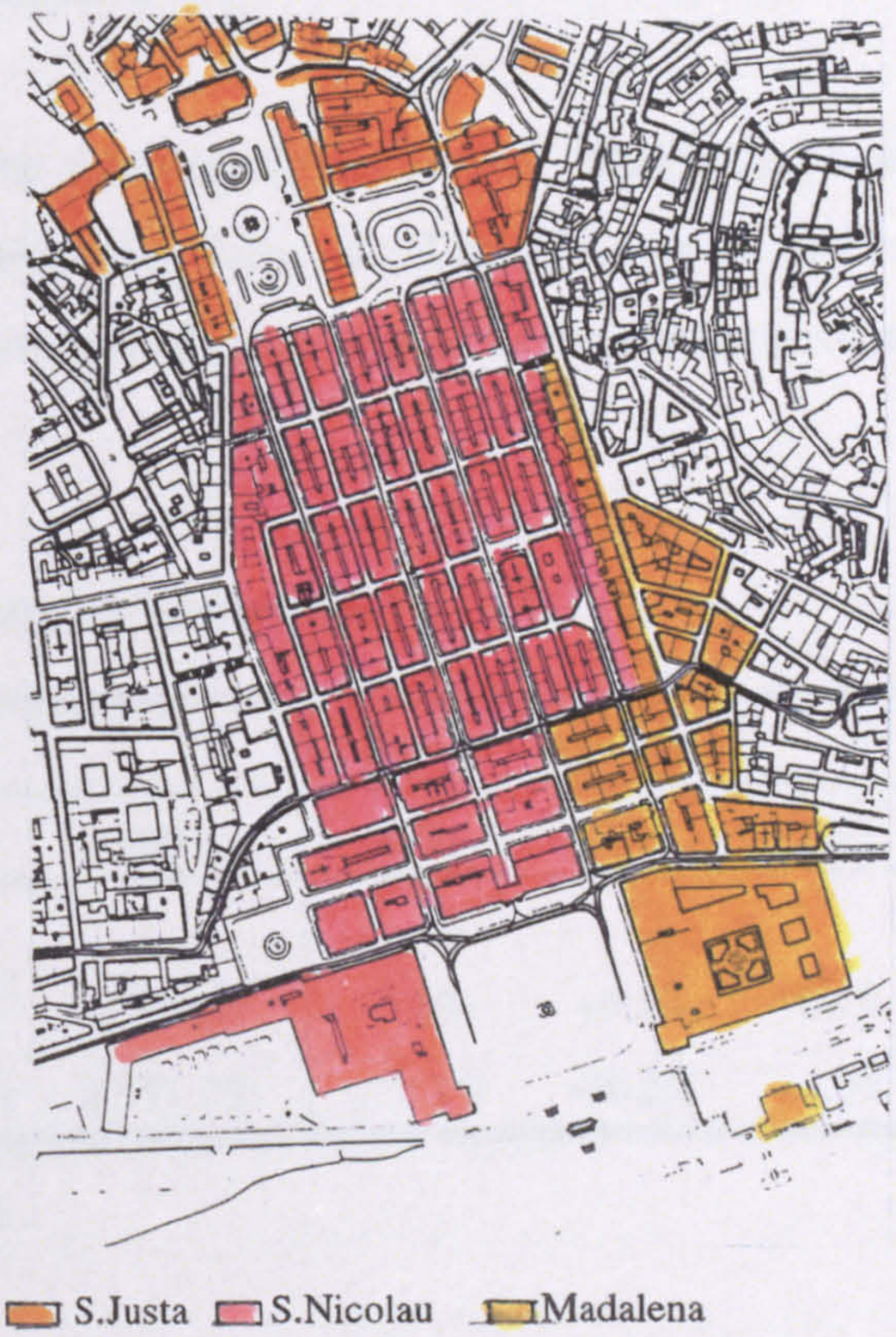
7.1. Introduction

This chapter examines the demographic and socio-economic evolution of the study area with a view to establishing the effect of these factors on its current state of deterioration. The analysis helps to ascertain the population related corrective measures that are needed if Baixa Pombalina is to regain its role as a dynamic and balanced historic centre. In common with the two chapters that follow, attention is drawn to the wider context of Lisbon's Metropolitan Region. Characteristics of the population, commercial life or traffic circulation in Baixa Pombalina, which are vital to its regeneration cannot be understood in isolation. One has to examine also their relationship to trends in the city and the region as a whole. Therefore, in this chapter, we shall first be looking at demographic and economic trends in the wider context, and subsequently focusing on the study area itself. This constitute Sections 7.2 and 7.3 respectively.

The main information base drawn on is provided by the ten yearly censuses carried out by the national Statistics Institute (INE). The most recent data refers to 1991. With this data base it is not possible to obtain a desegregation which strictly conforms to the defined study area. Instead use is made of information pertaining to three wards - S.Nicolau, Madalena and S.Justa. The study area includes sectors of these parishes.

Census data does not however provide sufficient detail with regard to living conditions in the dwellings. Therefore for the purpose of this study a specific survey was carried out in 1992 with a view to generating such information. (Section 7.4) It helps to deduce households', housing needs and their priorities in terms of comfort. The geographical relationship of Baixa Pombalina to the sample limits of this survey, the parish divisions and the Lisbon Metropolitan Region are shown in Figure 7.1. Section 7.5 analyzes the present accommodation supply in Lisbon, both new and established in order to appraise social preferences. The implications for housing regeneration in Baixa Pombalina are exposed in the conclusions.





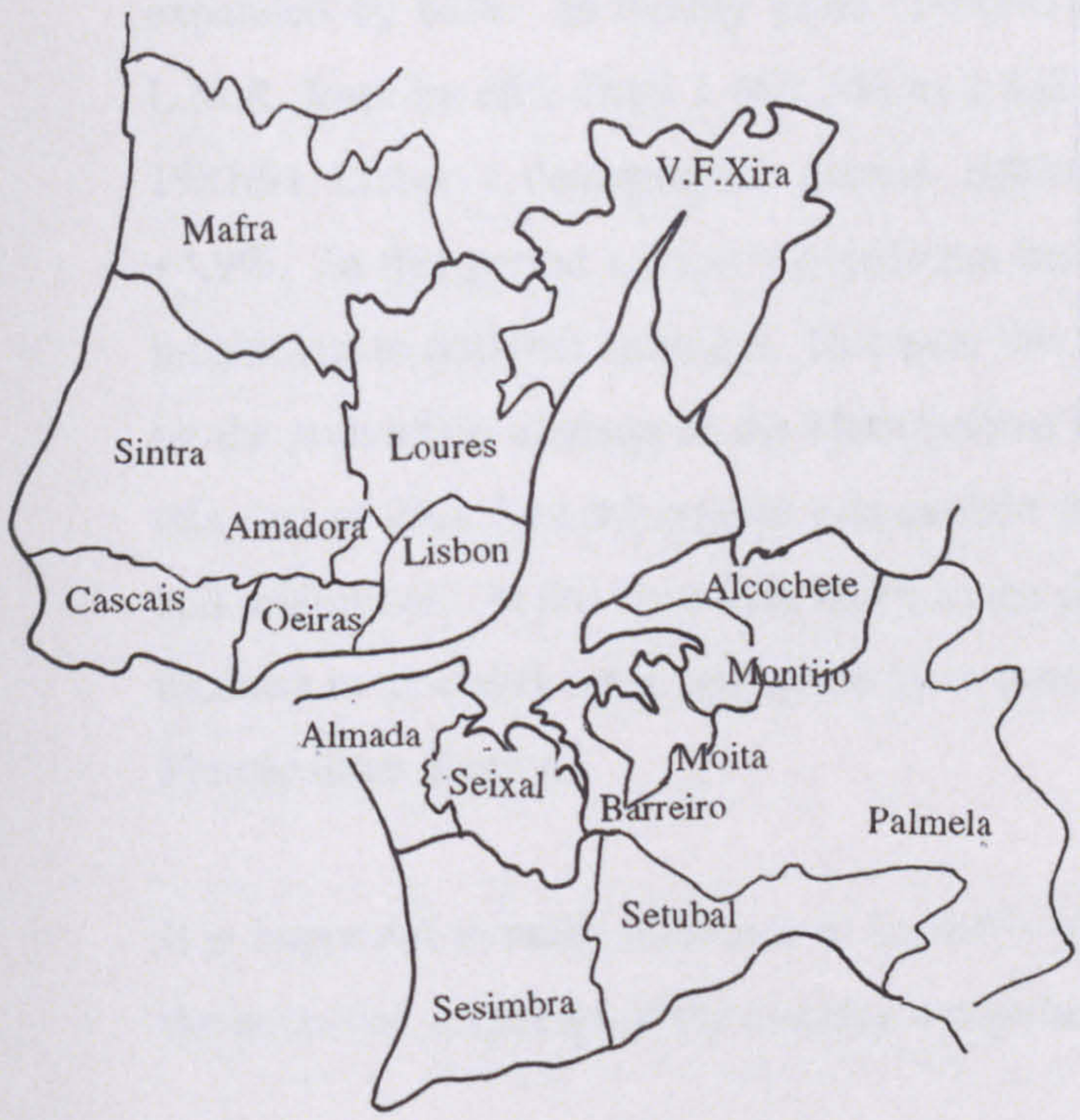


Figure 7.1 The surveyed area; the parish division; and Lisbon Metropolitan Region

7.2. Demographic aspects of the city of Lisbon

Lisbon's population started decreasing in the nineteen forties and by 1960/70 the rate of demographic growth became negative. From the following Table 7.1 one is able to compare the evolution of Lisbon's population growth with that of Lisbon Metropolitan Region's.

Table 7.1 Evolution of Lisbon's Population, 1960 - 1991

	Population				Popul. Growth		
	1960	1970	1981	1991	60/70	70/81	81/91
Lisbon	801 155	760 150	807 917	659 649	-5.1%	+6.3%	-18.4%
L.M.R	1 469 168	1 781 360	2 433 377	2 551 750	+12.2%	+36.2%	+4.9%

Source: INE, National Census, various years.

Between 1970 and 1981 Lisbon's population grew by 6% but the peripheral area expanded by 61%. In twenty years (1960/81) the demographic concentration in the L.M.R. leapt by 66% from 1 469 168 to 2 433 377 residents. For the period between 1981/91 Lisbon's demographic growth achieved -18.4%, whereas the M.R. shows +4.9%. In this period Lisbon's population has been decreasing from around 800 000 inhabitants to 660 000 thousand. However this reduction of population is not explained by the population increase in the Metropolitan Region as at first would be expected (as this was of 2%). Several reasons can explain this variation (birth rates, mortality rates and migrations), in this case they relate to the decrease of birth rates in Lisbon city and increase in mortality rates, and at the same time with a moderate increase of birth in the Metropolitan Region.[1]

It is important to make reference to Lisbon's Metropolitan Region because today, as in the seventies, a quarter of the country's population is concentrated within this area. By

[1] The increase of population felt in 1980, approximately 53 000 people, is explained by the ex-residents of the former colonies who settled in the Lisbon district, which amounted to 7% of the respectively resident population.

the sixties the city of Lisbon had 54% of the resident population in its Metropolitan Region; in 1970 that percentage fell to 43%, and in 1981 to 33%. Between 1960 and 1991 the peripheral population grew by 58% while Lisbon's remained virtually stagnant. In 1991 only 26% of people in Lisbon Metropolitan Region live in fact in the city.

The demographic concentration in peripheral areas usually consists of a sector of the population living in low standards of housing. In these areas the urban quality is inevitably low, and the lack of services is enormous, resulting in a strong dependence on the capital. These areas are regarded as 'dormitories' for the working class. As such, one can observe a change in land uses, rapid illegal expansion and clandestine housing.[2]

There is concern in Portugal that an equilibrium is necessary between the population of the capital and its M.R. The decentralization of services will contribute to a better and more rational use of land and a balance between housing and activities. This will encourage the suburbs' autonomy and will minimize the daily pendulum movements towards the capital.[3]

The following Figure 7.2 shows the population evolution by city zones and L.M.R. areas. The distinction made between L.M.R. (near) and (far) relates to the degree of easy access to the city, such as by railway from Sintra and Cascais, or by ferry from Almada and Barreiro.

This graphic shows that for the period between 1960/91 the population has increased in the 'near' Lisbon Metropolitan Region and in Zone 4. This Zone 4 even shows higher percentages than the 'far' L.M.R.. This represents that the population is progressively moving towards the city borders. One of the zones is located inside the city limits (represents the city expansion in the sixties and seventies and includes the wards to the

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[2] The 1977 national survey detected 83.000 illegal dwellings; 77% in L.M.R.

[3] The Commission for the Coordination of Lisbon's Region and Valley of Tejo is promoting a public competition for the development of Lisbon Metropolitan Region, 'PROTAML'. Its aim is to define policies and strategies for the following ten years. For more information on this subject, see: Teixeira, J., 'O Porto de Lisboa, uma Perspectiva para o Desenvolvimento',1990, p. 53-59 and Lobo, S.M., 'Região de Lisboa, O Plano Director Revisitado',1990 p.13-20, in URBE/Cadernos 1.

East and North-East, mainly of social housing). The other zone immediately connected with the previous one is located outside the city limits. This movement towards the city limits is related to the availability of housing and the lower prices for housing either to rent or to buy property.

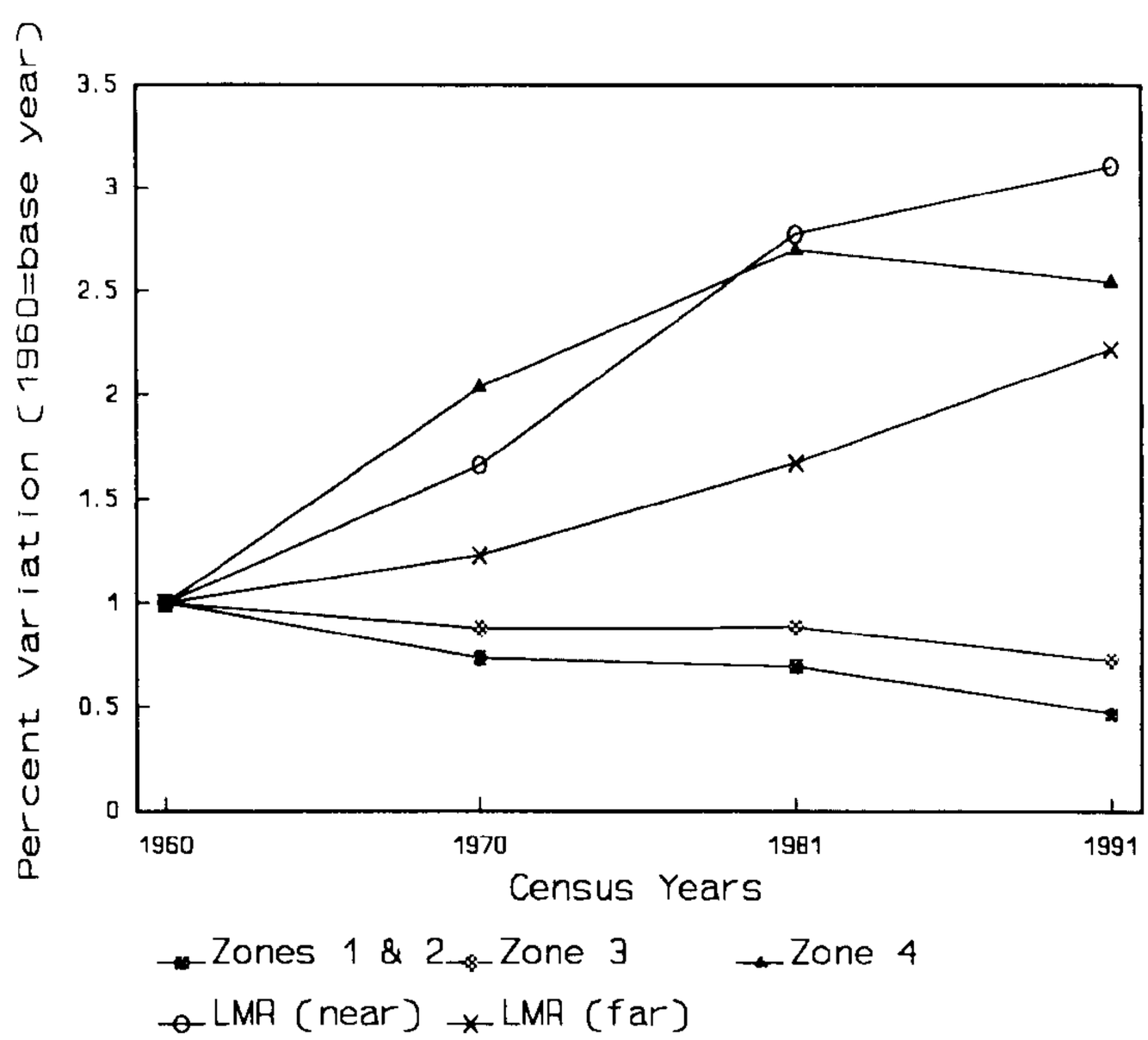
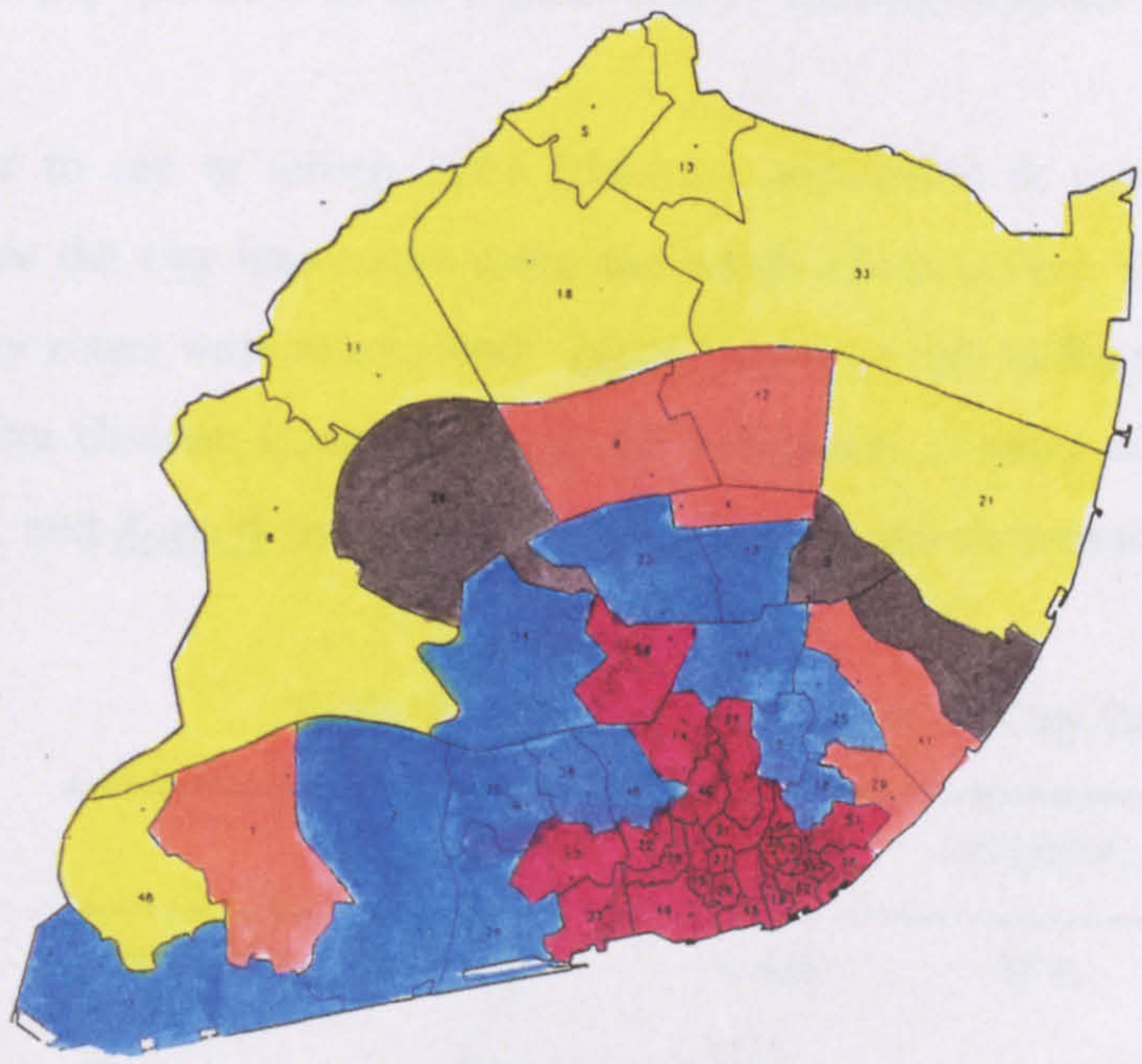


Figure 7.2 Population evolution by city zones and L.M.R. areas

The concentration of population in this large sector (the two sides of the city limits) is related to the fact that employment is still concentrated in Lisbon, therefore people tend to find accommodation not far from the centre or at least with good connections with the city. The following Figures 7.3 and 7.4 show the population growth in the city of Lisbon. In Figure 7.3 the population growth is subdivided in five scales and shows that the historic centre has a decline superior to 50%, immediately followed by an area annex to the centre with a decline of 36% to 50%.

This represents a strong population decline in the city centre and all the area west of the centre, which coincides with the old districts where old people live and with the tertiary activity concentration. Figure 7.4 also shows the population growth in the city of Lisbon but underlines the wards where there is positive or negative growth between 1960/91 and 1981/91.



Population growth superior to 100%

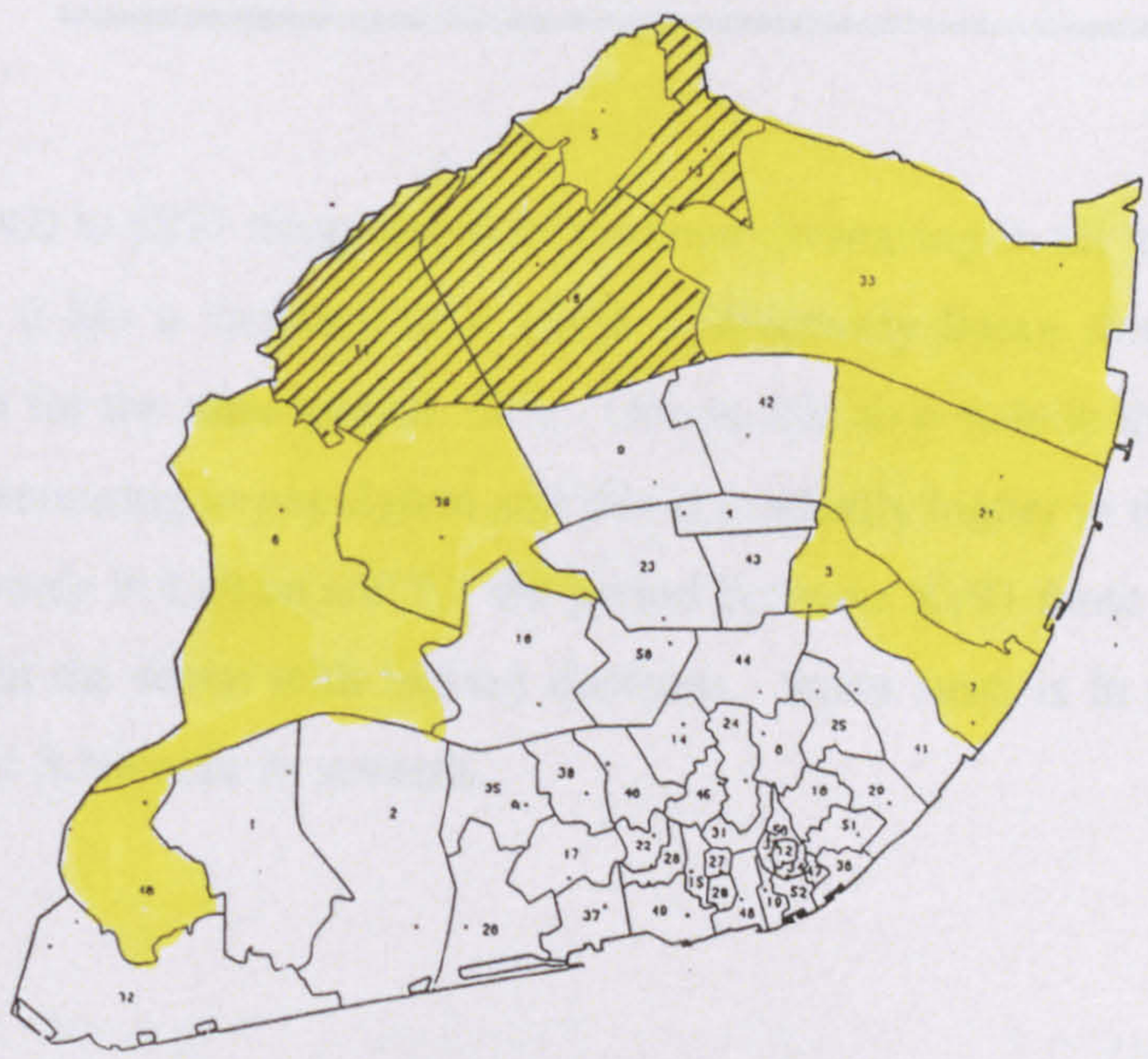
Population growth between 1 to 99%

Population growth from 1 to 35%

Population decline from 36% to 50%

Population decline superior to 50%

Figure 7.3 Population growth in the City of Lisbon, 1960/1991



Positive growth 1960/1991

Positive growth 1981/1991

Figure 7.4 Population growth in the City of Lisbon, 1960/91, 1981/91

It is clear that the positive growth is in the northern areas and the negative in the central areas. However the negative growth from 81/91 has increased, showing that the previous depopulation of the central area is moving towards the north.

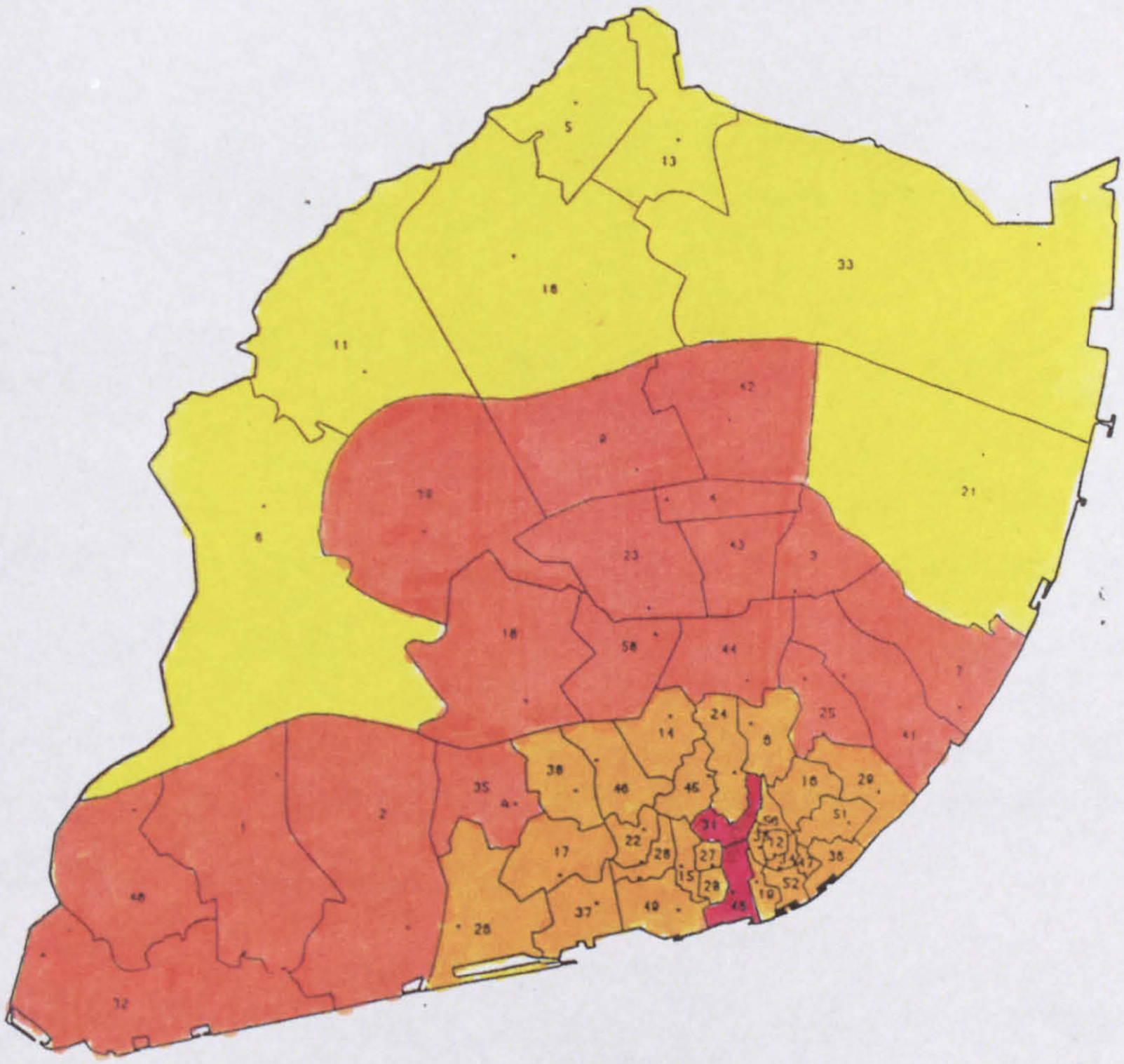
In order to see in which areas Lisbon's population is concentrated it is useful to subdivide the city into zones using the wards division (see Table 7.2 and Figure 7.5). Four city zones were established: Zone 1 corresponds to Baixa Pombalina; Zone 2 the non Baixa Historic Centre; Zone 3, the nineteenth century and early to mid twentieth century; and Zone 4 includes the mid to late twentieth century expansion.[4]

Table 7.2 Population Variation by City Zones

	1960/1970	1970/1981	1981/1991	1960/1991
Lisbon City	- 5%	+ 6%	- 18%	- 18%
Zone 1	- 37%	- 6%	- 45%	- 68%
Zone 2	- 26%	- 5%	- 32%	- 53%
Zone 3	- 12%	+ 1%	- 19%	- 28%
Zone 4	+ 103%	+ 32%	- 6%	+ 154%

From 1960 to 1991 the population has been decreasing in all the zones, except in Zone 4 where it has a variation of + 154%. Effectively Baixa shows the highest negative variation for the same period, 68%. One is able to conclude that on the whole, Lisbon city is decreasing in population and this is gradually higher in the historic centre. From the 53 wards in Lisbon and for the period between 60/91 those of Baixa Pombalina are located in the seven with highest decrease. Santa Justa is in first place, Madalena in sixth and S.Nicolau in seventh.

[4] The ward divisions are used for this analysis. However the proposed divisions should not be considered as exact because some of the wards include nuclei of different historic periods. The division proposed here intends to mark the three periods of city expansion.



Zone 1 Zone 2 Zone 3 Zone 4

Figure 7.5 The wards division and the City Zones

Considering the age composition of the population in Table 7.3 one concludes that the population is ageing. The figures show that in the city of Lisbon there are 124 570 people over 65 years old, (of which 45 671 are men and 78 899 woman). They represent 18.8% of the total population living in the district.

These alterations in the demographic structure are greater than those in the district and the country as a whole. Within the district, the city of Lisbon has the highest concentration of old people. Considering that the population of Lisbon is 28.8% of its Metropolitan Region (in 1960 it was 58.5% and in 1981, 35.6%) there are 41.1% people over 65 years in the whole area. The population ageing and the low rate of birth determine the progressive decrease of population in Lisbon's city.

Table 7.3 Age structure of Lisbon and its Metropolitan Region, 1991

	Lisbon City		**L.M.R. North Area**		**L.M.R. South Area**	
Total Pop.	663 404	100.0%	1 831 887	100.0%	640 493	100.0%
0-14 years	94 306	14.2%	321 965	17.6%	123 605	19.3%
15-24 years	99 117	14.9%	289 278	15.8%	101 289	15.8%
25-64 years	345 411	52.1%	987 583	53.9%	345 800	54.0%
65 or + years	124 570	18.8%	233 061	12.7%	69 799	10.9%

Source: INE, National Census, 1991.

Lisbon's active population works primarily in the service sector (75%). Conversely, the population working in the secondary sector does not equal a quarter of Lisbon's total active population. If one looks at other parts of the Lisbon region the reality is entirely opposite as almost half of the active population (Tejo south area) is working in the industrial sector.

In the past ten years, land uses in Lisbon have changed profoundly due to the intense replacement of residential areas by commercial uses. At the same time the agricultural sector (programmed by the 1948 Master Plan as preserved areas) has begun to be urbanized. This change in land use implies an increase in population in old areas, mainly outside the historic centre.

In the central zones 1, 2 and the south part of zone 3, one can see the highest concentration of flows as well as the highest values, in the district, for tertiary sector employment. However new tendencies can already be seen: - a slow but continuous movement of tertiarization towards zone 4. The highest concentration of daily flows can be detected towards the city centre (34%). This shows that the metropolitan districts are extremely dependent on Lisbon, specially Oeiras (55%), Amadora (54%), Loures (52%), from which more than half of the residents commute daily to the capital. In contrast, Cascais can be considered autonomous as 57% of its resident active population works within the area.

Thirty per cent of Portugal's population live in the L.M.R.. Thirty three per cent of its active population is in industrial employment, and 68% in the tertiary sector. The population and the various functions are unequally distributed in the urban network. The urban centre has 47% of total employment but only 29% of the population, which contrasts with the situation in the outskirts, which have an almost similar population but only 19% of the total employment.

7.3. Baixa Pombalina Population

The study area for this thesis is comprised of three wards, (S.Nicolau, S.Justa and Madalena) included in zone 1. Table 7.4 and Figure 7.6 report on the resident population from 1940 to 1981 and show its decrease since the early forties. It was estimated that in 1991 the population of Madalena, S.Justa and S.Nicolau wards would have been 743, 1 876 and 1 876 respectively, however the decrease was much higher and these parishes have a population of 526, 1 183 and 1 469 respectively.

Table 7.4 Resident Population in the Study Area

Parish	1940	1950	1960	1970	1981	1991
Madalena	2 871	1 433	1 568	995	1 004	526
S. Justa	4 781	3 714	4 300	3 000	2 260	1 183
S. Nicolau	5 690	4 244	3 961	2 165	2 535	1 469

Source: I.N.E.

Several main conclusions can be drawn from the data presented. The first and most worrying is the phenomenon of depopulation which has been observed for several years. This is directly related to birth rates, mortality rates and migrations. It is important to consider the need to set up a policy for increasing residential occupation as an indispensable and necessary part of any action to maintain life in the city centre.

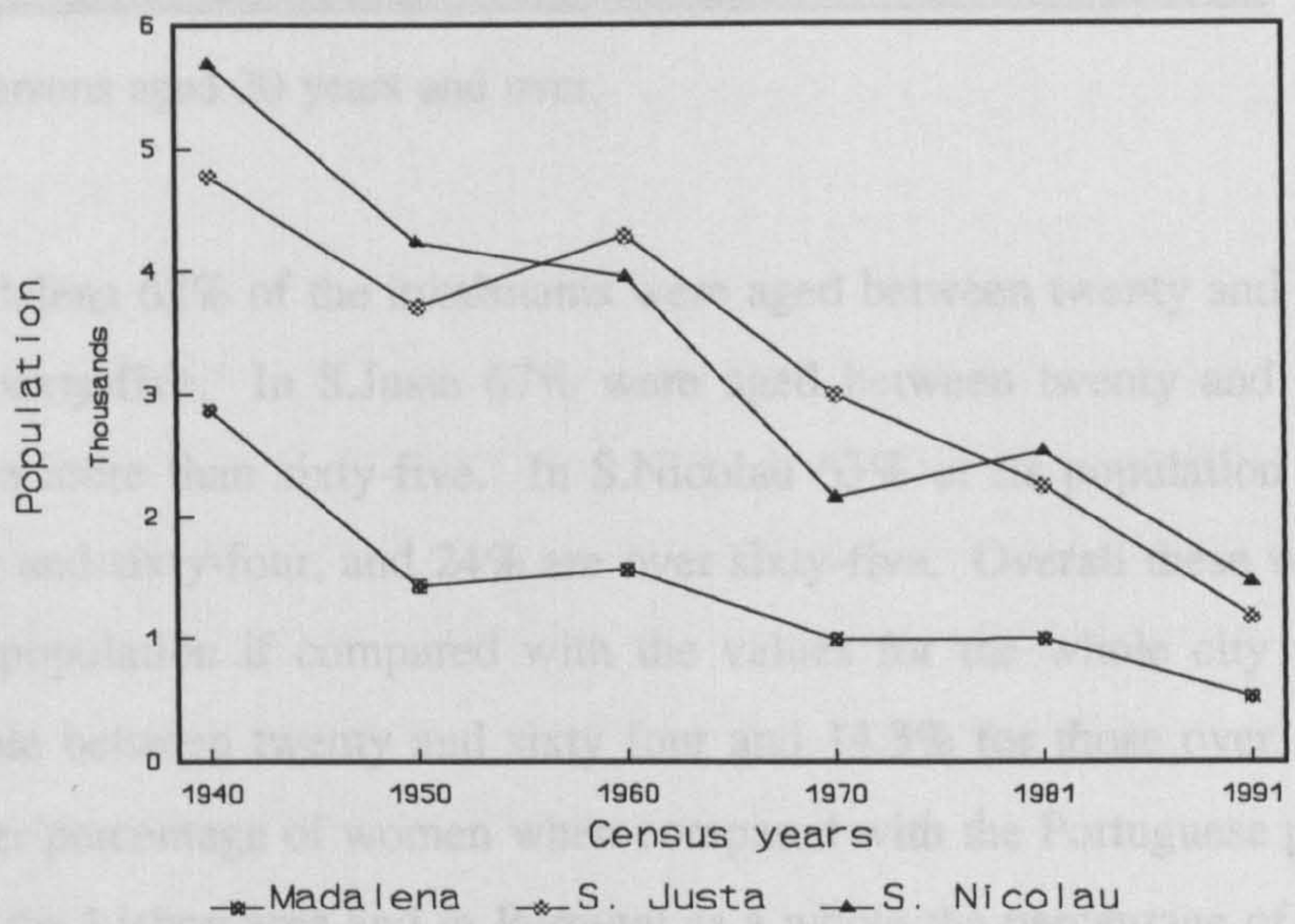


Figure 7.6 Decline of the Population in the Study Area

Table 7.5 gives information on the population: age, economic activity, level of education and families per flat.

Table 7.5 Key Social-Demographic Indicators in the Study Area, 1981.

	S. Nicolau	S. Justa	Madalena
Age structure (%)			
0 - 13	12.4	12.4	13.5
14 - 64	65.9	65.3	66.7
+ 65	21.6	22.1	19.7
Sex (%)			
male	44.3	47.0	44.9
female	55.7	53.0	55.1
Education level(%)*			
without schooling	24.9	30.2	27.1
primary level	45.8	46.2	48.3
lower secondary	17.7	14.3	16.9
second. and higher	11.6	9.3	7.7
Families/flat	1.4	1.7	1.4
Persons/flat	3.2	3.5	3.5

* Persons aged 20 years and over.

In 1981, in Madalena 62% of the inhabitants were aged between twenty and sixty four and 16% over sixty-five. In S.Justa 67% were aged between twenty and sixty-four while 29% were more than sixty-five. In S.Nicolau 63% of its population was aged between twenty and sixty-four, and 24% are over sixty-five. Overall these wards have a very elderly population if compared with the values for the whole city which are 59.4% for people between twenty and sixty four and 14.3% for those over sixty five. There is a higher percentage of women when compared with the Portuguese population as a whole. (In the Lisbon area and in Portugal as a whole the percentage of women is roughly 52%). The table also shows that the level of education of adults in the three wards is very low, more than a quarter have no formal school at all, and only around

10% have completed secondary or further education. [5]

The data suggests that over half of the households are families of 1-2 people but the average number of occupants per flat is 3.2, (in 1991 this decrease to 2.7). A substantial number of young people, usually living below the average standard of decent life, share the same house in order to support each other. The size of families, or rather the number of persons per household, provides an important element in determining the demands for housing space in the area.

In Baixa, despite its inhabitants having resided there for many years, (65.3% for more than 5 years; 30.6% between 1 and 5 years; 4.1% less than 1 year) and still feeling that they belong to the place, they seem to have lost completely a sense of trust and mutual dependence. However, when they were asked whether they had any intention to move, only a very small percentage said they intended to do so.

Although a proportion of those households housed in unsatisfactory dwellings probably could finance improvements from income or savings, this would not be the case for the majority. Those in difficulties would also find it hard to raise or service a loan. Many would be eligible for home improvement grants, but even if they received one they would still need to find a significant sum to meet the total costs. It is absolutely necessary to work with the few remaining residents of Baixa, hoping to find new solutions to old problems.

Property ownership in Baixa has been changing over the years. Banks and insurance companies have been buying property and they are now the main landlords. Such landlords must be taken into consideration since any kind of rehabilitation or planning effort that deals with an old site must also deal with the complexities of ownership. One should also be prepared to suggest ways in which impediments to any action might be resolved through leasing or other mechanisms.

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[5] In 1985 the illiteracy index in Portugal was 17%. (Unesco source).

From the 1981 census for the three wards; S.Nicolau, S.Justa and Madalena, it appears that 6.3% of the property was then owned by residents. Residential ownership can sometimes affect the physical condition of the buildings as when most of the owners cannot afford maintenance work and are too elderly to want to plan any kind of action.

Conversely, it is well known that if someone is living in his own property, the care of the building is much better than if the property is rented. The residents point out that there is hardly any contact between them and the owners. Owners never visit the houses and the rents are often paid through the bank.

7.4. Living Conditions in the Dwellings

Having analyzed the socio-demographic characteristics of the inhabitants and provided a general overview of the buildings in the area, we now follow by describing and assessing the dwellings' ability to provide comfort and amenities for its occupants as well as providing building integrity versus degradation. What is proposed is to determine and assess suitability in relation to established standards or limits of acceptability for the specific occupancy and function. Taking suitability as a measure of the degree to which a building and its component parts or services (kitchen, bathroom, water, gas, electricity, ventilation and natural light) serve users' needs in the present and near future, the following criteria were established:

(i) Good: when the hot water, piped gas and electricity systems do not require improvements, or replacement and are in accordance with the established safety measures; when the kitchen does not need major improvements and are up to present levels of hygiene, such as with the use of plastering or tiles, ventilation, cold and hot water; when there is a bathroom with hot water, bath, inside water closet and wash basin; when ventilation and natural light exist in all compartments.

(ii) Bad: when any of the systems (hot water, piped gas or electricity) need replacement because they are old, damaged, or do not meet safety measures; when kitchens need major improvements such as replacement of structural elements, the introduction of hot water; when the bathroom is not complete or does not have hot

water; when natural light and ventilation do not occur in all the compartments.

(iii) None: when none of the necessary component parts or services exist.

Table 7.6 shows the living conditions in the dwellings. The area concerned contains 359 buildings and the population living in the area is estimated at 944 inhabitants accommodated in 535 dwellings, however the collected information concerns 336 dwellings, which is 63% of the possible inquires. The difficulties in this part of the survey relate to the large number of old people living alone who did not even open their doors.

Table 7.6 Living Conditions in the Dwellings

	Good		**Bad**		**None**	
	Nº	%	Nº	%	Nº	%
Water	282	84%	54	16%	0	0%
Gas (piped)	129	38%	38	11%	159	47%
Electricity	285	85%	51	15%	0	15%
Kitchen	236	70%	97	29%	3	1%
Bathroom	204	61%	109	32%	23	7%
Ventilation	287	85%	26	8%	23	7%
Natural light	306	91%	30	9%	0	0%

The survey showed that the majority of the flats have electricity, water and natural light. Almost all of the flats have a bathroom, only 7% did not have one, but only 61% are in good condition, and 32% of the improved situations occupying the back balconies. Piped gas does not exist in 47% of the flats and only 38% of the system are in good condition. Bottled gas is still used in Baixa Pombalina and is one of the most dangerous factors for fire spread. Ventilation is bad or does not exist in 15% of the cases. This is essentially caused by the existence of an internal room in the dwellings or because the narrow light-well does not provide the necessary ventilation. The majority of the flats contain 3 or 4 rooms.

The principal defects founds in the dwellings include:

1. A very old electrical system which does not conform to present safety regulations. Nor do the commercial shops conform to existing legislation which regulates exits, construction methods, finishing materials, ventilation and alarm systems. The type of material in stock (which by itself has an enormous fir risk) should be reduced and compartmentalized.

In December 1988 a safety inspection was carried out by the local authority. The buildings in the area enclosed by Ouro Street, Comércio Square, Augusta Street and Rossio Square were the first to be inspected. Later another inspection was made in Augusta and Madalena Streets. The first inspection showed that 10% of the houses are empty, and 8.1% for the second. The desertion of the area is not a recent phenomenon as it started fifty years ago.

2. Rooms without any kind of ventilation or natural light, (excluding those at the back having a window looking into a dark and dirty light-well) were found in every building. The light-well was in many cases so narrow, only 20m2, that for a building five floors high it is more like a dark well. Therefore, kitchens need to have permanent artificial lighting. Only the top floors may enjoy the benefit of any sunlight, but at the same time they are hard to reach, especially for the elderly.

A substantial percentage of the residents said that the landlords were bad and never made any repairs or maintenance.

In general the owner-occupied houses are well maintained and in some cases have undergone improvements. However, where serious deterioration exists, the cause is generally a low family income, which means that people are not able to afford any kind of repair or even building maintenance. This is often the case when the occupants are old or unable to cope with the difficulties of a rehabilitation. The residents' demands and aims are: better housing conditions; improvements in existing schools; facilities for infants, adolescents and the elderly; better shopping facilities; better police surveillance; green spaces; better car parking; a cultural and recreational centre.

Another factor in the present situation is the local authority. Its failure to produce clear information concerning the future of such areas is one of the major causes of the process of decay.

7.5 Accommodation Supply and Demand in Lisbon

Lisbon has been, until very recently, a city where the rental market dominated, and this allowed a large variety of the population to live in the city. However, there has been a progressive change, and the rental market has been taken over by the retail market. The sale of existing rental housing is also a common practice. This usually results from an owner selling a property this is still inhabited but from which he receives such low rents that he is unable to carry out any conservation work in the building. In such cases the owner's aim is to get rid of his property (also in cases where the dwellings are unoccupied due to abandonment or death) at knock-down prices.

Moreira[6] shows that the supply of dwellings is concentrated in the new city districts such as Benfica. However, it is still important that the Av. Almirante Reis as well as the parishes of Fátima and Lapa also show very high values although these are very old and well settled areas of the city. The lowest values are found in poor and degraded districts. In areas such as Charneca, Marvila, S. Sebastião da Pedreira, Penha de França and Baixa the supply of dwellings is almost non existent. She also refers to the importance of the underground system in terms of accessibility (Av. Almirante Reis, Av. Roma) where housing predominates.[7]

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[6] The information presented is based on the work done by Graça Moreira in which she analyses this market based on data supplied from two newspapers. It was based on two years' information (May 1987 to April 1989) and the conclusions are taken from 6,578 observed cases. The sample is 99,7% accurate and a 3% level of error. It is important to note that the two selected newspapers have a different public; the 'Correio da Manhã' is a daily newspaper and is read by all sectors of the population, while 'The Expresso' is weekly and is read by the middle-class, but both have a wide circulation. The housing supply is based on the number of rooms per dwelling and is generally offered through a sale's agent, direct sale being very rare. (These enterprises usually charge 10% on the commercial value). Moreira, G., 'Renovação Urbana na Habitação, uma Comparação Internacional, o Caso de Lisboa', Urbe, Lisboa, 1990.

[7] The S. Sebastião da Pedreira area which buildings date from 1919 has been taken over by the tertiary sector.

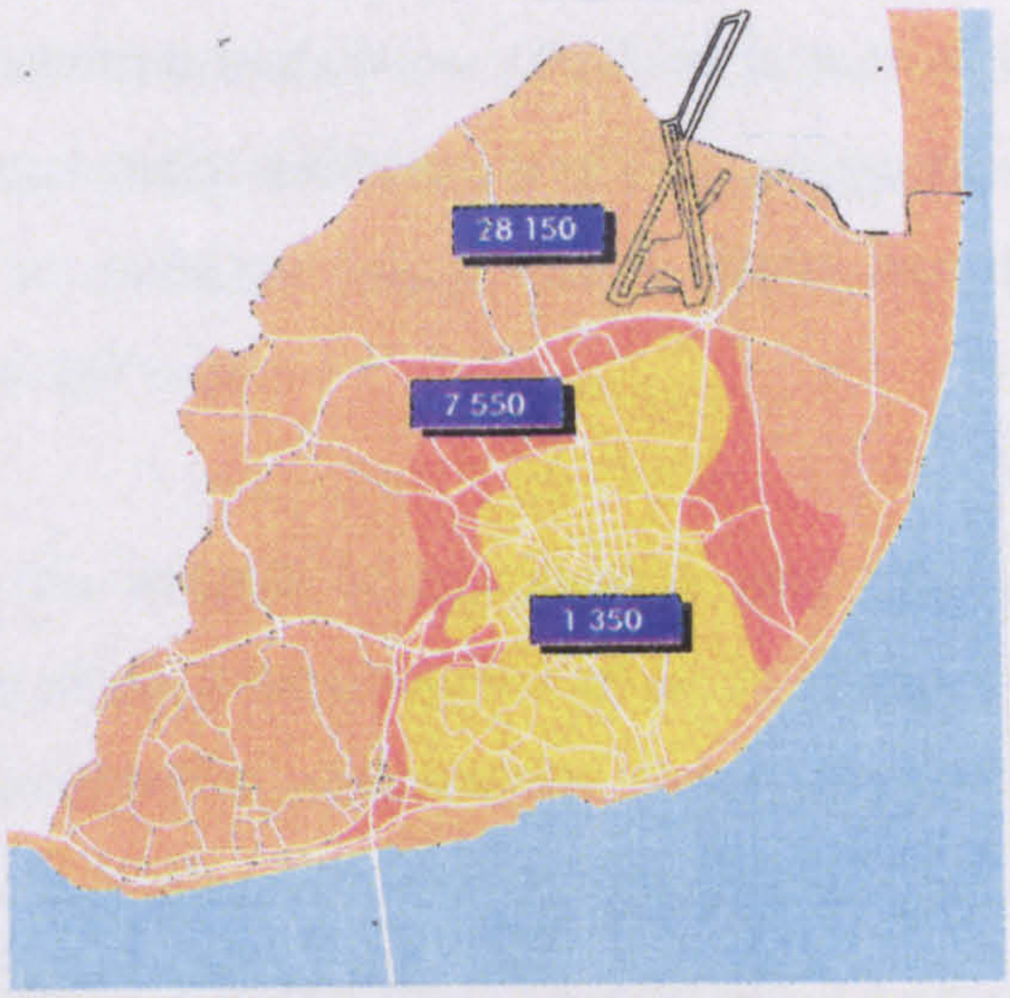


Figure 7.7 Supply of housing for 1992-2000.

Mention must be made of Baixa Pombalina for which the newspaper 'Expresso' presents no information but 'Correio da Manhã' shows 0,5%. This demand refers to a sector of the population which is experiencing very difficult economic conditions. Those who can only afford a dwelling where safety problems are enormous. No one would want to share the same dwelling with other families due to these conditions.

It is also observed that prices are grouped into two categories, with maximum prices in Belém, S. Mamede, Castelo and Av. Roma and minimum prices in Beato, Mouraria, Av. Almirante Reis, Av. 24 Julho. This means that the first group includes good quality housing and adequate amenities whilst the other group in much less prestigious districts, includes only deteriorating housing and very poor amenities. This includes all the river side and the old industrial districts, still suffering from a lack of any attention to conservation.

From this analysis one is able to conclude that the rental market is gradually diminishing and that sales are increasing, therefore provoking the exit of the less wealthy sector of the population to the suburbs because they are unable to buy a flat in the city. The upper income group, those who can have credit from a bank, will get a loan and pay it back within twenty five years. Another consideration is that the wealthier groups of society tend to concentrate and choose old districts such as Lapa or Castelo because of their associated social status and because of their geographical position in the city. The former has good accessibility which Castelo lacks, but the latter has an excellent location because of the view.

What arises from this analysis is that there is very little available housing in Baixa Pombalina because of the poor condition of the buildings. It does not mean that there is no demand for existing accommodation, or for a location in old city districts. Just next to Baixa, in Castelo or in Lapa, the demand is high, but those who are able to afford these properties are from a very wealthy income group with a recognized higher social status. Accommodation is expensive, and most of the time a large amount of conservation and rehabilitation work needs to be done. What people are looking for is firstly a privileged location in the city in quiet and traditional areas in which the older buildings are clearly distinguishable from the very new ones, and secondly, a location

where there is still a sense of identity.

It is therefore plausible to think that Baixa Pombalina has the potential for attracting new residents. Its location is ideal, its buildings need rehabilitation (and it will be expensive to reach an attractive standard in competion with other city areas). There is also a need to provide the necessary amenities, but even so there is a reasonable demand for existing accommodation.

Figure 7.7 shows an estimate of the housing supply for the period between 1992 and 2000, for which the city council is promoting either the rental or re-sale market, the rehabilitation and conservation of old districts and encouraging young people to buy housing. It has programmed the rehabilitation of 16 000 dwellings in the old historic districts, however for Baixa Pombalina the intention is to reinforce its tertiary function.

7.6. Conclusion

This chapter's aim was to discuss the quantitative aspects of changes in the residential function of Baixa Pombalina and the historic centre, by examining the beginning of the process of loss of population and the causes of the process. The main economic change in the structure of Baixa and Lisbon's centre is related to the growing unattractiveness of these areas as a residential environment which leads to a decrease of population. The area of population decline coincides with the old districts, where old people live and where the tertiary activities are concentrated. In fact the expansion of central area functions should be regarded as one of the causes of population loss in the city centre.

On the whole the population of the city of Lisbon is decreasing (except in some new districts) and this loss is becoming gradually higher in the historic centre, where the three wards of which Baixa is comprised are among the seven with the highest decrease. The Pombaline wards also indicate a very elderly population, (64% are aged between twenty and sixty, and 23% are more than sixty-five), whereas for the whole city the statistics are 59,4% and 14,3% respectively. This central area's depopulation is also moving towards the north. The urban centre has 47% of the total employment but only 29% of the population, contrasting with the situation in the outskirts, which have an

almost similar population but only 19% of the total employment.

The migration from the central area became possible due to the expansion of the metropolitan area towns and by the development of modern means of transportation and communication. Another important characteristic is the concentration of old people in Lisbon's city. The city shows the highest percentage within the district. The ageing population, the low rate of birth and migrations are the factors involved with the progressive decrease of population.

Banks and insurance companies are now the main landlords. In 1981 only 6,3% of the property was owned by the residents.

The analysis of the living conditions in the flats showed that only 61% have a proper bathroom; 47% do not have piped gas (increasing the risk of fire); and adequate ventilation is not provided in all the rooms. The urban space is not very attractive since the area does not even provide a minimum of amenities for the residents.

Following the reasons given at the begining of this work for the importance of having a mix of uses in the city centre, we now express some of the implications related to the reintroduction of housing in Baixa Pombalina. For this to occur, quite different conditions from those in the past must be fulfilled. Firstly, from this survey of conditions in the dwellings several improvements can be introduced in the buildings:

(i) adequate natural lighting and ventilation
(ii) sufficient artificial lighting and electric power
(iii) bathrooms with hot water
(iv) cooking and preparation facilities
(v) adequate heating
(vi) standardization of gas distribution[8]
(vii) sound insulation, specially in the main streets and squares

[8] Baixa Pombalina is using gas cylinders which put the area in a constant danger especially in old buildings where most inhabitants are aged.

Secondly, the provision of amenities is a very important factor in the overall functioning of the environment. Daily shopping, schools, safety and security, reduction of traffic circulation and recreation areas, have to be provided.

Thirdly, while accepting that the residential function should be maintained and encouraged a question arises: - for which categories in the population? In the preceding section it was seen that the residential function in Lisbon has become progressively more specialized. It is also indicated that there is a small demand for housing in the old districts, however the wealthier groups of the population have been choosing to reside in the historic city in order to acquire social status and because of its better location in the city.

It can be concluded that, on the whole, there is not a great, but rather a very selective demand. Apart from the wealthier groups, the other category interested includes single persons (especially students and young employees) and workers in the entertainment industry, the hotels, who prefer to live in the centre. Besides these categories there are the old people who want to stay in the area. But it is planned that efforts should be made to keep or attract families with children to the centre. However it is to be expected that it will not be possible to provide Baixa Pombalina with parks, or playgrounds. For most families with children, the attraction of the centre related to its liveliness, nearness of shops and employment or entertainment opportunities, fails to compensate for the positive qualities found in the outer districts, like fresh air, quiet, parks, etc.

At the end of this chapter it is seen that it is possible to indicate general implications for the planning of residential functions in Baixa Pombalina and the historic area. In the following chapter our intention is to analyze the existing commercial and administrative structures of the area in order to discern their implications on housing regeneration in the area.

Chapter 8

Commercial and Administrative Structures

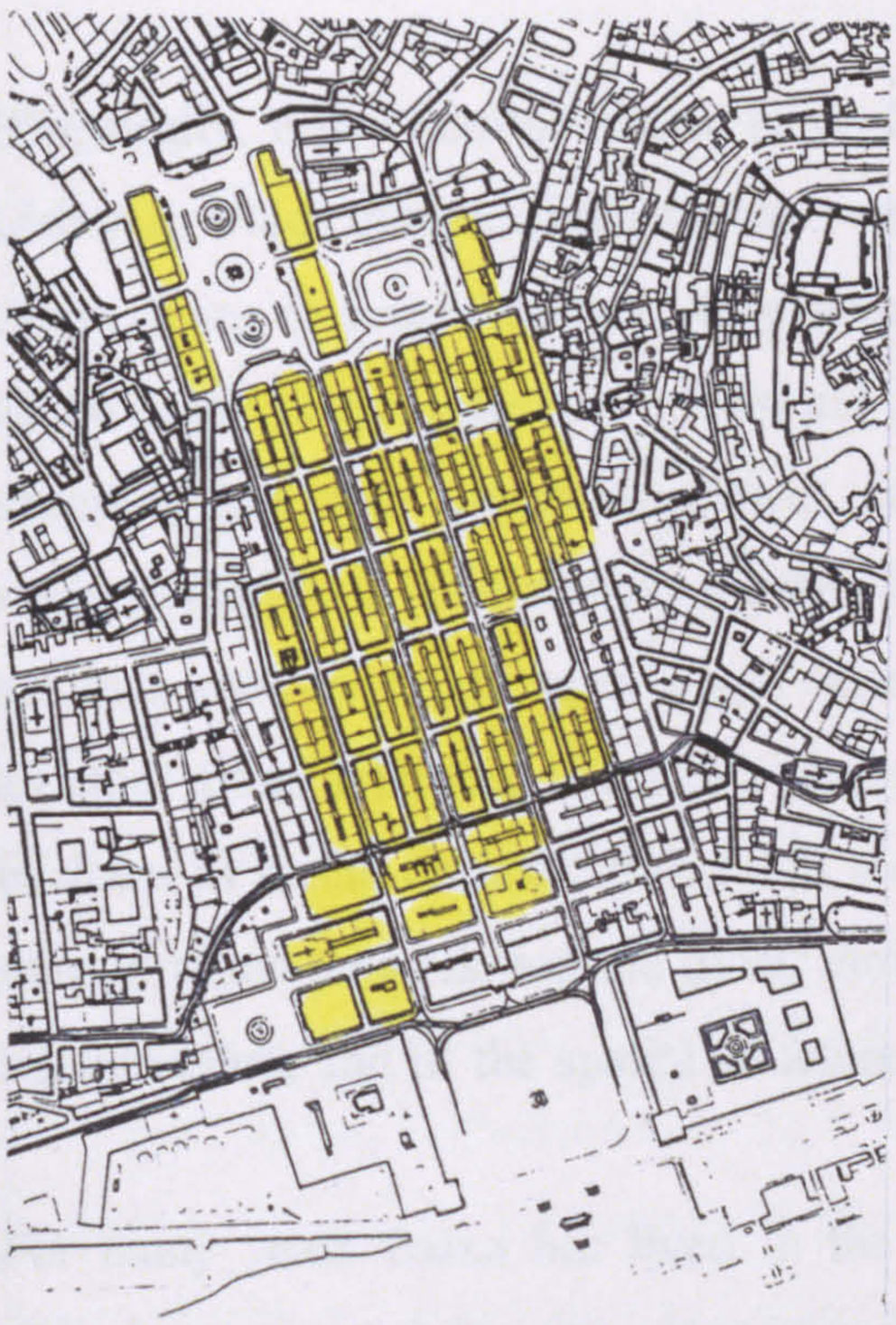
8.1. Introduction

This chapter on Lisbon's commercial and administrative structures will attempt to show the changes in retailing activities and growth of office employment in the city and in its city centre. For the purpose of this analysis, Section 8.2 is concerned with decay in the central area, and what is more important, how it is affecting the whole city. A survey carried out for Area B, (see Figure 8.1) gives information on the distribution of the types of activities in the buildings of Baixa Pombalina and supports the discussion on the abandonment and decay in the central area. Section 8.3 will also involve a brief discussion on the relocation of some central functions and the emergent new centres in the city, and will analyze the relationship between function and building types.

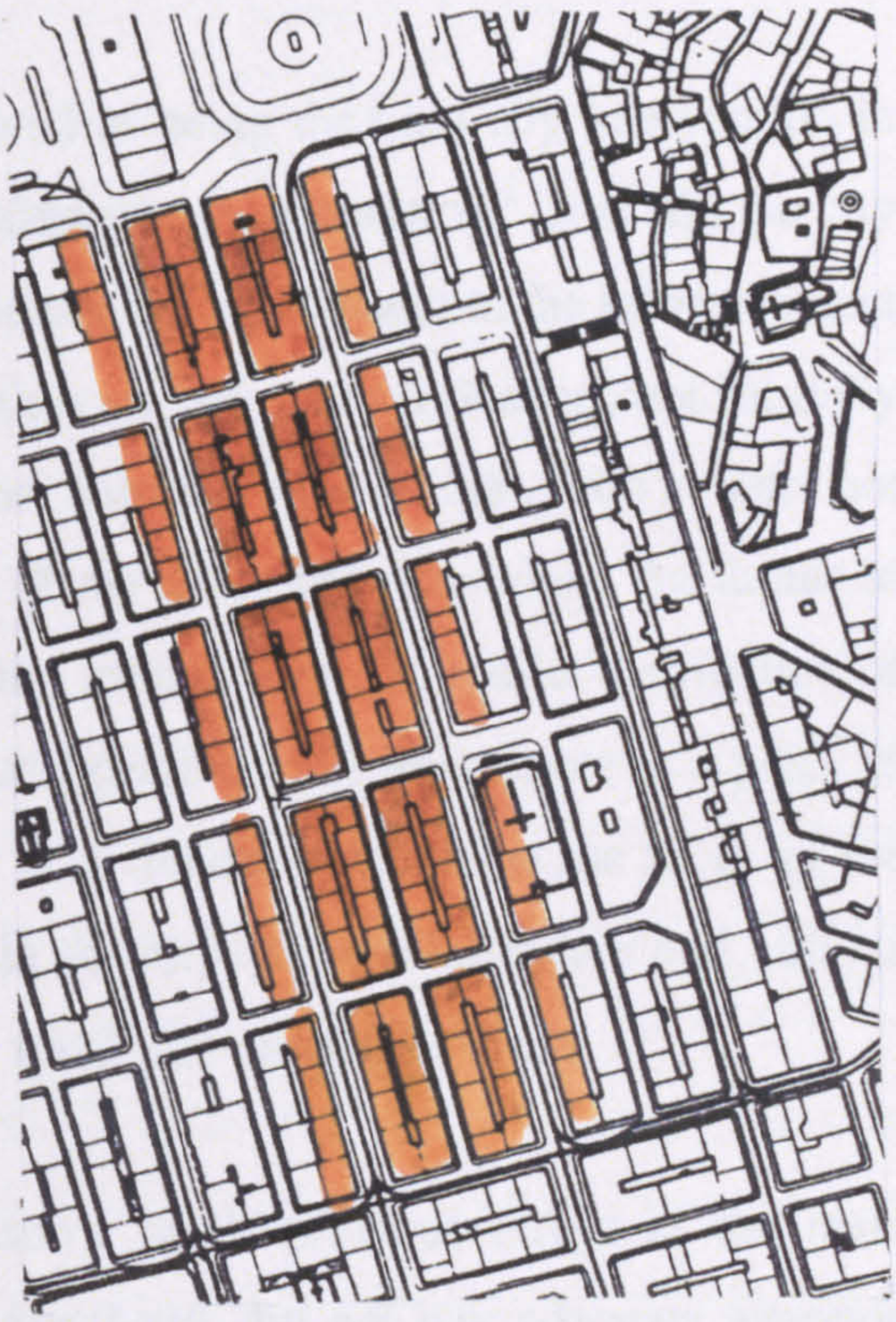
A detailed study of Baixa commercial structures and the street pattern is given in Section 8.4. Another relevant survey of the commercial activities located at ground level, in a specific area of Baixa (area C, see Figure 8.1) was also carried out in 1988 and 1992 in order to provide information on commercial activities and compare any changes that occurred during this period of time.

Before concluding two other aspects of the commercial and administrative structures are analyzed. That is the powerful influence that shopping centres and hypermarkets have on the change in commercial patterns and the retail and office market. These constitute respectively, Sections 8.5 and 8.6.

We shall also draw attention to the necessity of establishing an urban and commercial policy which would help to encourage the development of more specialised shopping functions in Baixa, whether it continues to be a commercial and administrative area or a mixed area with a predominance for housing.



Area B



Area C

Figure 8.1 The surveyed areas; Area B and Area C. Shopping front in Prata street.

8.2. Central area decay

Historically, Baixa Pombalina can be considered as being the only city intervention in Lisbon in which commercial activities were taken into consideration.[1] It is still the city centre owing to several factors. City development has contributed to the reinforcement of the centre because the new residential districts are not well serviced except for daily shopping and the enormous growth of the suburbs during the 1960's was not accompanied by a simultaneous introduction of the necessary amenities. Baixa has in the past acted as the strongest single organizing influence on the spatial distribution of all other urban activities. Despite a proportional decline in its importance as a place of business in recent decades, Baixa still tends to dominate. It remains the focus of the transportation network and the traffic flows in the city, the administrative and utilities infrastructure, and of the spatial structure of retail and service business.

For many years Baixa has lived in the shadow of its previous image as the main shopping centre of the city. However the merchants did not pay adequate attention either to the shops or the modernization of stock. The physical degradation of buildings, together with the neglect of some shops and big department stores such as Chiado and Grandela, and the opening of several shopping centres in other areas of the city, such as Amoreiras and the reinforcement of Roma Avenue, have forced Baixa Pombalina to react against its subsequent loss of prestige. Therefore, changes in ownership, activities and remodelling of shops have begun to take place. A rapid rise in property values immediately occurred, affecting the sublease of shops.

A precise measurement of change in Baixa is difficult to evaluate because the definition of the central area used is not constant over time while measurements of land use and floor space are interpreted differently. However, a survey was carried out in area B in order to determine the distribution of activities in Baixa. The objective of this survey was to find out where the activities occur, both on plan and in the buildings. Table 8.1 shows the percentages of activities for each of the sectors in the total of 359 buildings (3201 dwellings).

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[1] Directions for the commercial occupation in Baixa were established by the Royal decree, 5 November 1760.

Table 8.1 Distribution of activities in the surveyed area

Sector	Percent
Commerce	34%
Housing	17%
Offices	33%
Unoccupied	9%
No information	*6%*

Commercial and office space are the two largest sectors found in Baixa, with similar values, respectively 34% and 33%. There have been increases in office and shopping floor space occupancy in contrast to a large decrease in residential areas and population. This sector occupies today 17% of the area, however it used to be the main activity of the area followed by commerce. Land demand in Baixa has resulted in changing uses to meet social needs. The age-old central function of wholesale markets has been or is being moved from the city. Similarly, manufacturing premises are disappearing, although certain specialised trades remain. Government, business, banking, retailing and some entertainment remain. Residential use continues to decrease. The average number of inhabitants per functional dwelling is 5.5, whereas for the housing it is 2.7.

The distribution of activities per building and per floor space in the surveyed area is shown in Figures 8.2, 8.3, 8.4 and 8.5. Commercial activities are obviously located at the ground level and on the first floor; however their presence on the second floor is very important. It also happens that this activity is gradually taking place in the third and fourth floors of the buildings. In a few cases the commercial use occupies the whole building and a low percentage use the basement. When occupied, these basements are used for commercial purposes or by banks. Offices which occupy a similar percentage to commercial activities are mainly located on the first, second and third floors. However such activities can be seen as being located from the ground floor up to the sixth floor.

Figure 8.2 Distribution of uses per floor; Basement and Ground Floor.

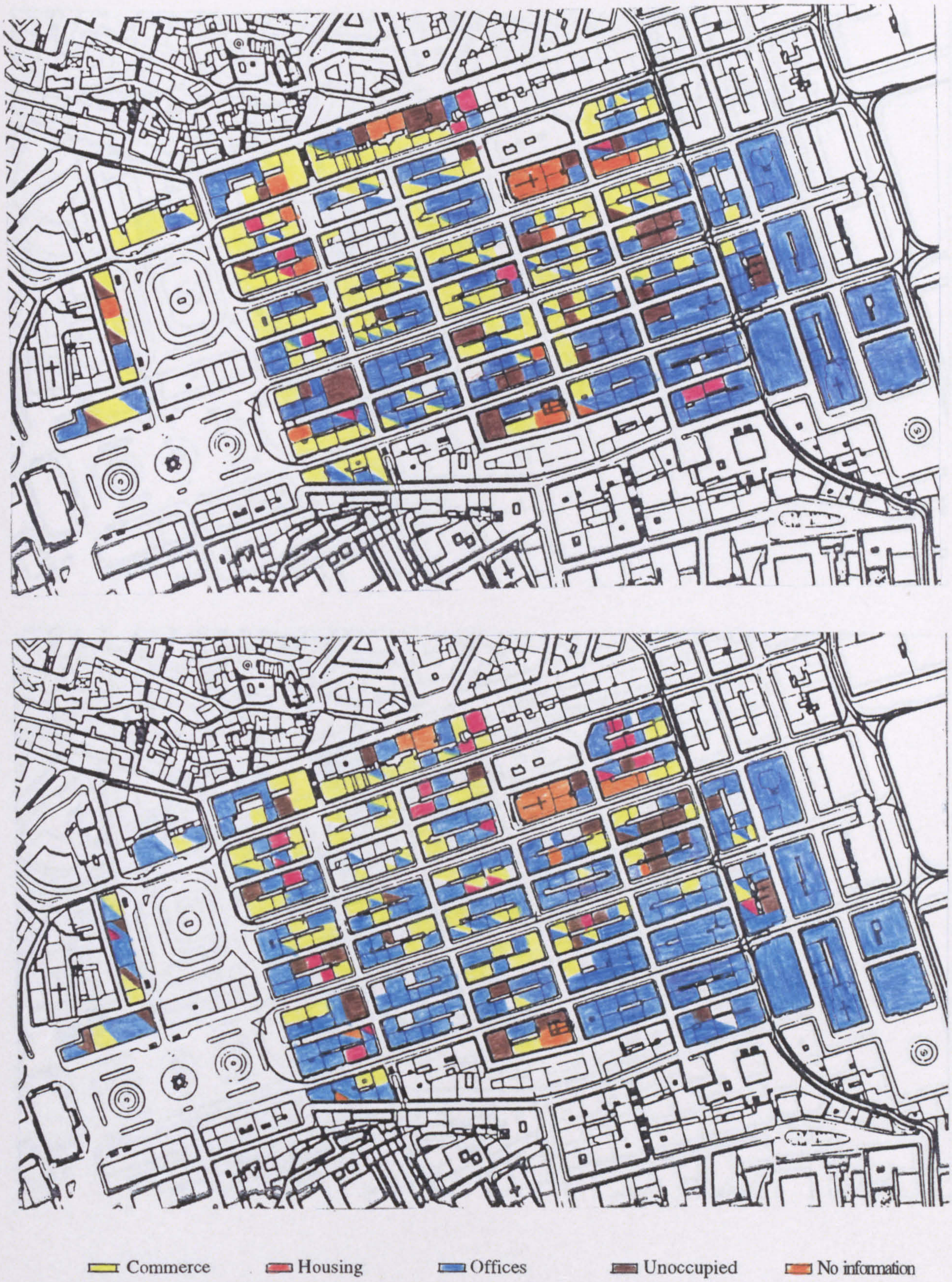


Figure 8.3 Distribution of uses per floor; First and Second floors.

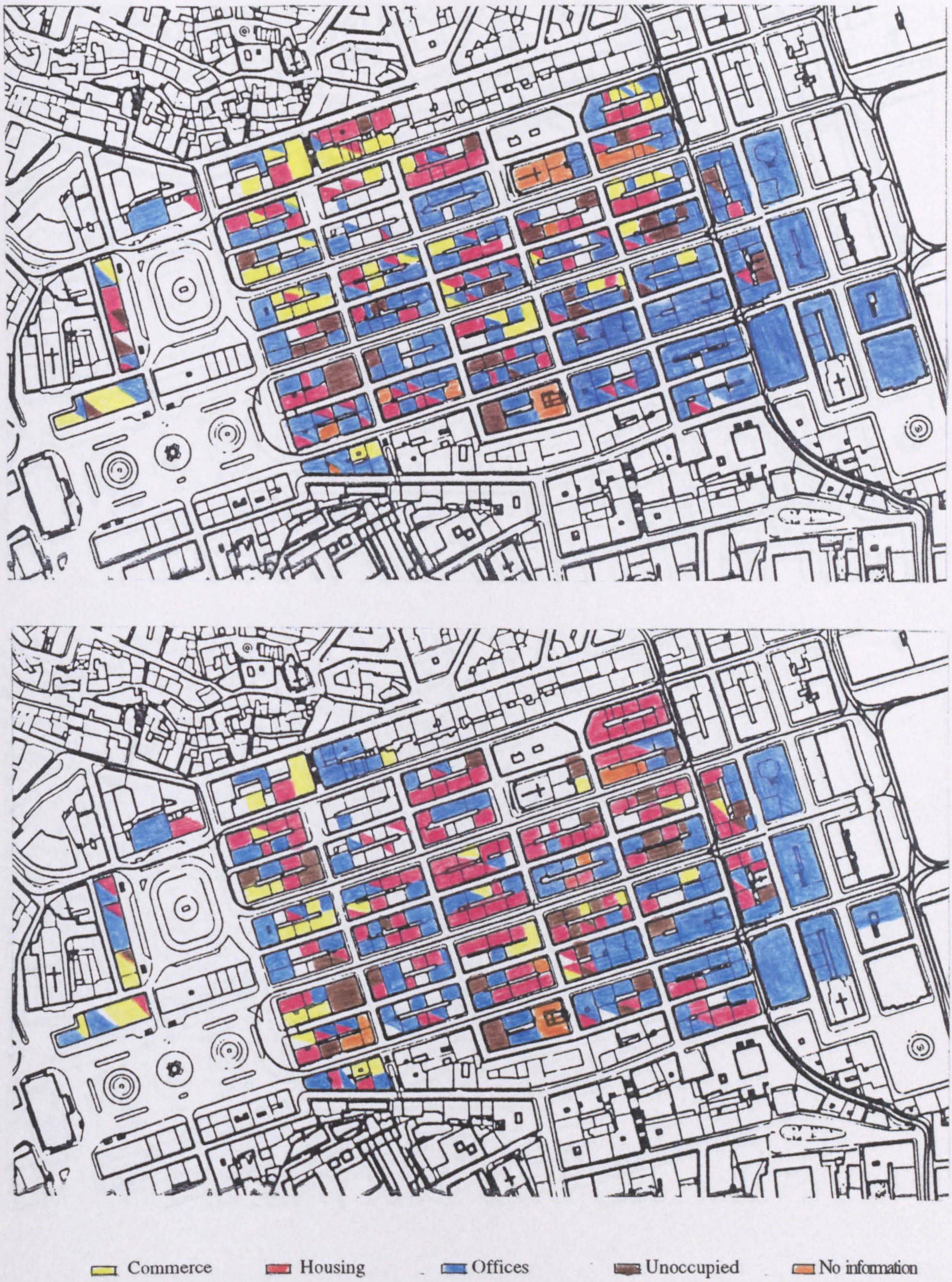


Figure 8.4 Distribution of uses per floor; Third and Fourth Floors.

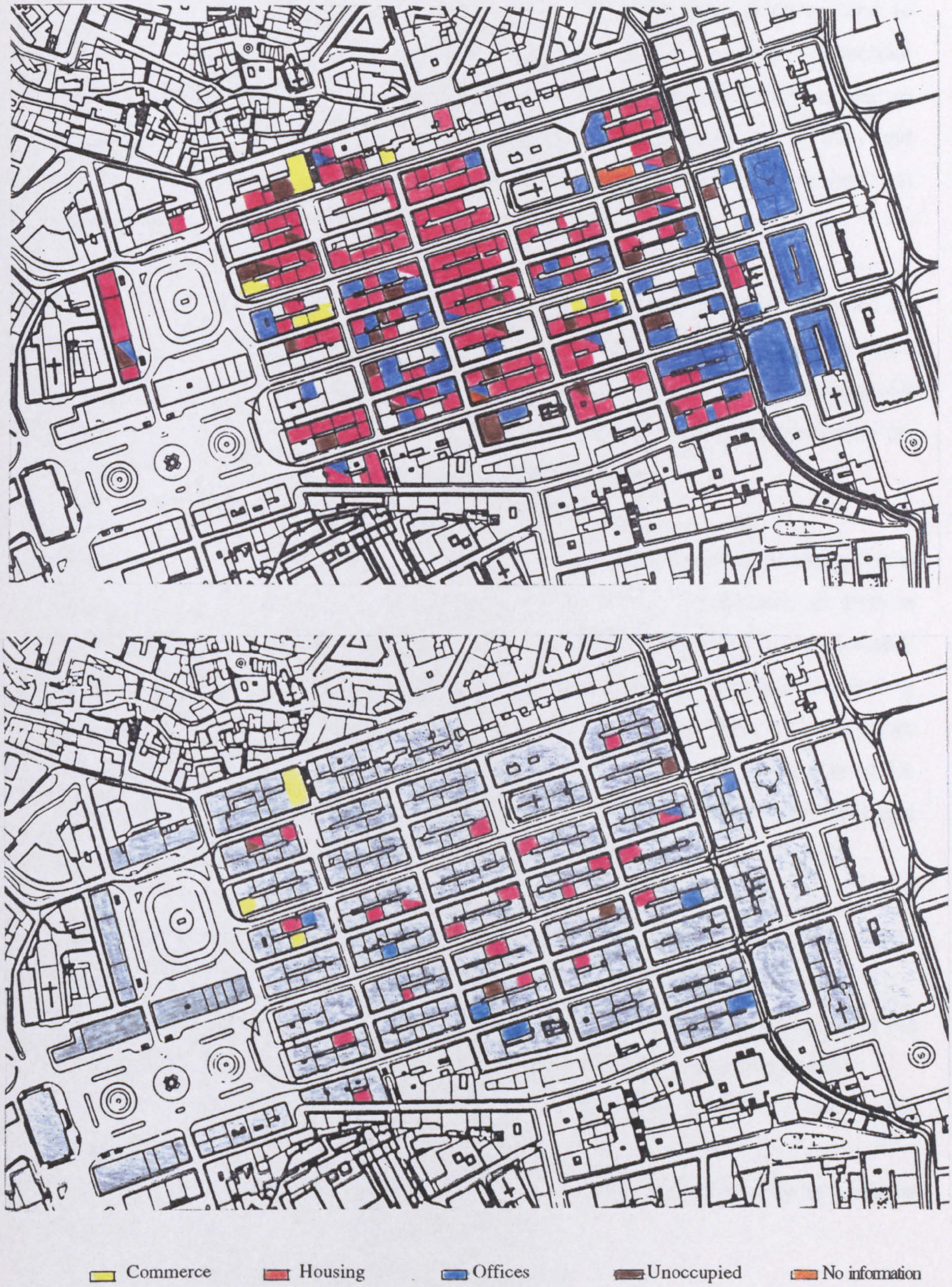


Figure 8.5 Distribution of uses per floor; Fifth and Sixth Floors.

Still important is the distribution of these activities on the plan. Offices tend to predominate in the south/west area, close to Comércio Square, whereas commercial activities are concentrated towards the north/east side of the plan, directly related to Rossio and Figueira Squares. Housing begins to be noted on the fourth floor and dominates the fifth. Unoccupied space is seen on every floor (except the basement) but predominates in the last two.

It is also possible to make a connection between these maps and those produced on building conditions shown in Chapter 6. The better conserved buildings are those located in the main streets which are used for office space and some commercial activities. When housing is the activity the levels of maintenance and conservation are lower and reflect the economic conditions of the inhabitants.

Planners have followed and encouraged much of this change. But physical change takes time and once proposals are initiated it is difficult to stop the process, so there is inevitably a lag between new ideas and their achievement. The new social demands gaining ground, in relation to roads, housing and conservation for example, are finding expression in changing planning policies. But such policies are often in conflict with economic interests and market forces, and in the process they alter the nature of the market through public intervention. By identifying the new social needs one can begin to exercise control in order to bring about the desired change.

The reasons for the marked deterioration of central areas, though relating primarily to housing, are very complex. Four factors appear as the most important:

1. The general movement to the suburbs of the more affluent members of the population, leaving the central areas to the elderly and/or the under-privileged.

2. The tendency of retail trade to follow in the wake of change in purchasing power.

3. The inability of city governments to cope with the difficulties they face, arising from the structure of local government.

4. The qualitative decline in public transport.

When considering the economic hierarchy of land uses in the urban framework, the most valuable are generally those in the most central part of the Central Business District. The extent to which these uses will occur within the C.B.D. is determined by the degree of intensity of land use and the amount of secondary land area available.

To determine the most desirable and feasible land uses for the C.B.D. and for other parts of the metropolitan area a process of experience, analysis and judgement must be applied. One which takes into consideration not only the historic development and compromises of the various local influences at work, but also the relationships between the public and private sectors of the economy. Consideration must also be given to the degree to which the implementation of the master plan itself may affect the location and function of the various land uses.

The fragmentation of property ownership in the C.B.D. and the holding of a substantial part of such property by trusts and estates, which are either unable or unwilling to participate in any activity involving change or increased investment, have a tendency to freeze the pattern of use. The small entrepreneur with his workshop, café or other enterprise may find life more difficult unless local authorities take a more sympathetic view of his needs, which include the need for centrally located cheap properties. For example, continuing changes in retail structure are a major cause of decline in the variety of shops in city centres as supermarkets take over from the small shops. An additional problem is the mounting pressure from suburban and out-of-town centres, although no statement of policy at government level, or general encouragement at local level has yet appeared.

8.3. Commercial and Administrative Evolution

Gaspar[2] identified and described some secondary centres with different hierarchic levels and established functional and spatial homogeneous areas in the city in a study of the commercial centre and services in Lisbon, and on the dynamics and localization of Lisbon's central functions during the twentieth century. These areas (see Figure 8.6) are

[2] Gaspar, J., 'Aspectos da dinâmica funcional no centro de Lisboa', Centro de Estudos Geográficos, Instituto de Alta Cultura, Relatório nº3, 1972.

not only delimited through their activities but also by their contiguity and to a great extent through their analogous human features as determined by the physical, economic, social, urban and historic characteristics.

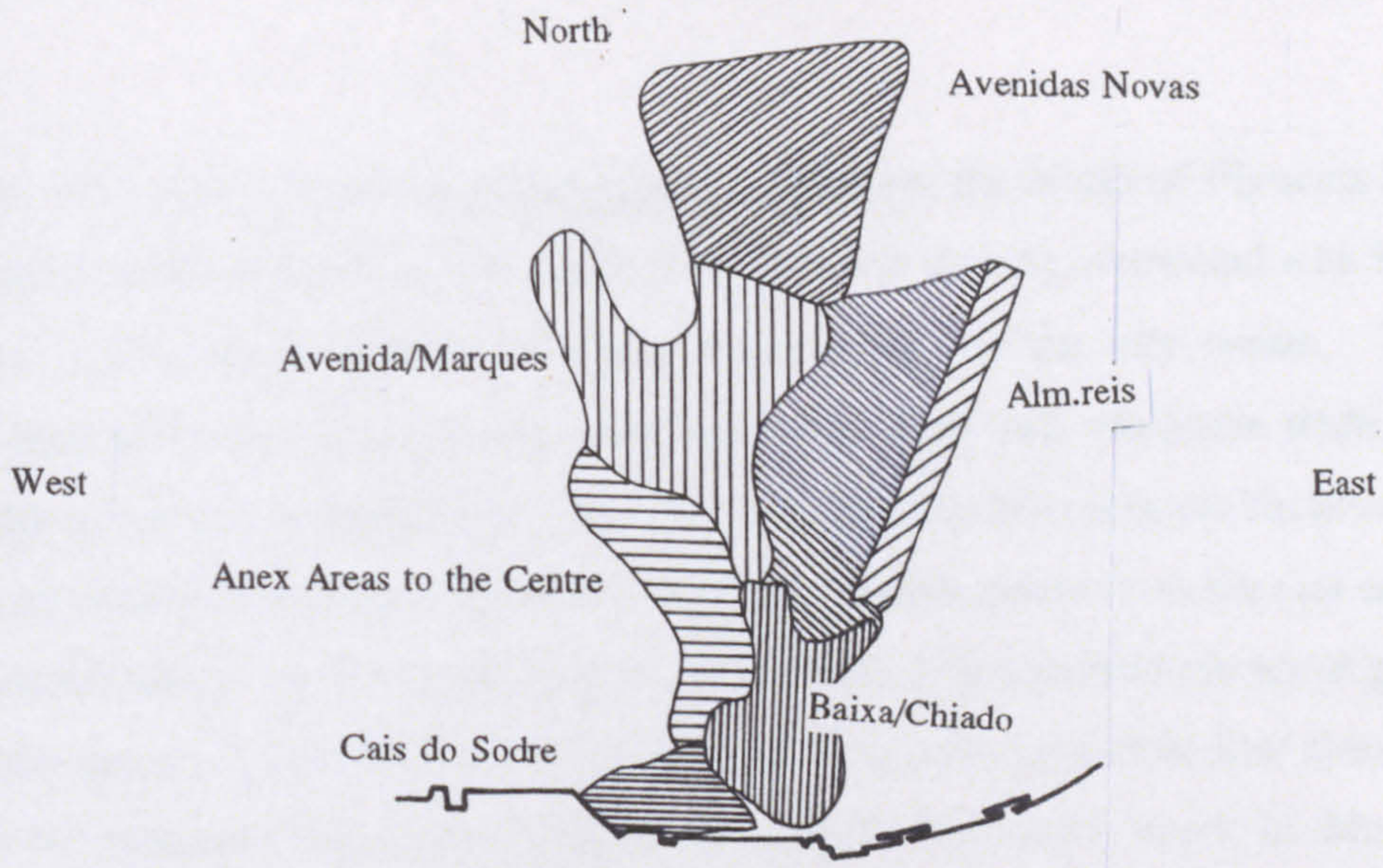
The first of the nine areas is Baixa-Chiado which until the middle of this century was Lisbon's city centre.[3] Together with Cais do Sodré it contains almost all of the tertiary activities. It is still the traditional centre but there is a tendency to specialize in central-area functions. Today it dominates only in the areas of public administration, banking and retail trade of non-basic, occasional consumption items, particularly for personal use.

The second area, Cais do Sodré ,(to the West of Baixa) which includes the Arsenal and Alecrim Street up to Barão de Quintela Square and the São Paulo area is famous for its navigation activities.

Thirdly, Liberdade Avenue - Marquês de Pombal, (North of Baixa) corresponds to the city's first expansion towards the north and is dominated by private enterprise. Special services, (hotels, specialist doctors, travel agencies and airline companies) and some specialyzed commerce can be found here. Recently there was an expansion towards the Camões , Duque de Loulé and Conde Redondo areas.

Avenidas Novas,(to the North) the fourth area, suffered a very quick change from residential to centre-city activities. This development started in the beginning of this century due to the area's easy access and continued with a period of intense reconstruction during the later 1960's. Nevertheless, it is still a residential area but one, unfortunately that is in the process of total transformation and occasional destruction. The new buildings are used mainly for centre-city activities and luxury housing.

[3] The banks had their headquarters in Baixa from a very early date. The Bank of Portugal was founded in 1846 with its headquarters in what is today the Municipality Building which previously was the Lisbon Bank; the Pinto Sotto Mayor Bank was founded in 1914 in Ouro Street and the Crédit Franco-Portugais (1893) established in Augusta Street. Also some shops such as Casa Africana and Nunes Correia Tailor's date back one hundred and thirty years.



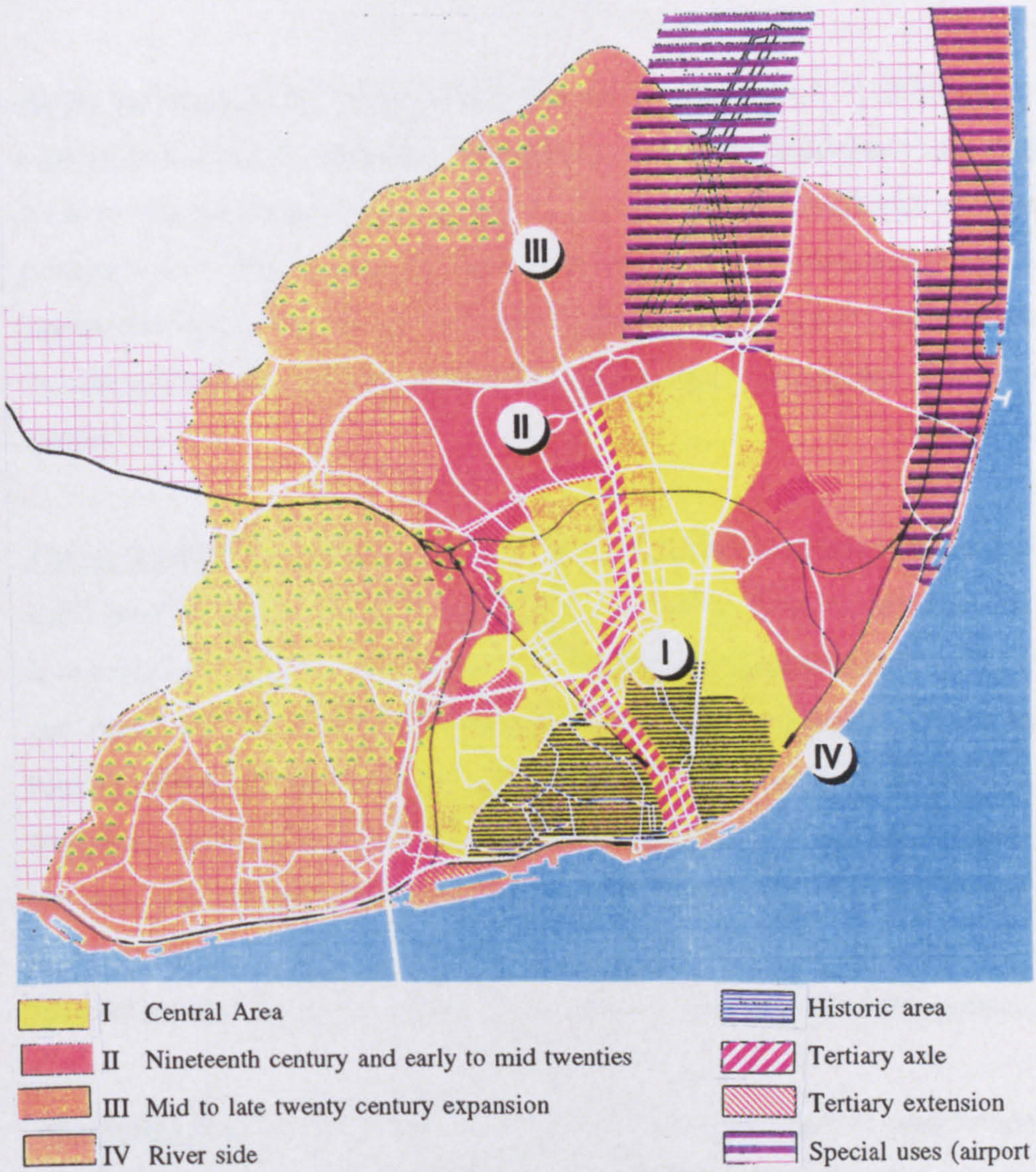


Figure 8.6 Homogeneous areas and the location of tertiary activities.

The fifth area is called Almirante Reis Avenue (to the North of Figueira Square) and extends as far as Chile Square. It is physically and directly connected with Palma Street and is considered to have been the first access into the city centre. This axis is characterized by small enterprise offices, retail trade and wholesale trade. The retail trade is varied and facilities are not only patronized by the residents but also by the rural population that still considers this avenue as the main entrance to the city centre. Some specialization can be found, namely in furniture and domestic electrical goods. Both these types of activities require large areas but at the same time low rents, if they are to be commercially viable. With the present renovation work in Martim Moniz, Almirante Reis Avenue will undergo a rapid increase in its commercial value.

Areas annexed to the centre form the sixth zone which is difficult to delineate, especially towards the east. It is composed of residential areas whose development dates back no further than 1900. In some cases it supports industrial activities, such as printers in the Bairro Alto. In D.Pedro V, Escola Politécnica, S.José and Santa Marta streets the sale of antiquities is the main activity. Small offices, special shops 'boutiques' and bars are the types of functions characterizing the areas annexed to the centre.

The west area the seventh zone, cannot be considered homogeneous as a whole, but can itself be distinguished from the north and east if one thinks of its suburban extensions. If one excludes the Alcântara zone, with its low rent districts and the Alcântara Valley, one could say that this is the wealthiest of Lisbon's sectors. During the sixteenth century, when the king had his palace in Xabregas (east area of Lisbon), the Chelas Valley was chosen by rich families for their leisure. Later in the seventeenth century the west area of the city which includes Calvário, Necessidades, Ajuda and Belém became popular. Most of the embassies are located in Lapa district which is an interesting case of a central-area function being located out of the centre.

The north area is very complex because of the city centre's progressive movement towards the north. This area is an open field with some consolidated city zones such as the New Avenues and the Calouste Gulbenkian Foundation - Espanhã Square.

The last zone, The east area, is considered as being the city's poorest area and is characterized by industrial activity.

Although changes have occurred in commercial and administrative structures they do not differ considerably from the divisions proposed by Gaspar. Therefore his study should be regarded as fundamental for the understanding of Lisbon's commercial and administrative evolution. The city has grown and expanded in these areas, sometimes emphasizing their primary tendencies, at other times changing to different ones, therefore changing their character.

In the last ten years Lisbon has been presented with several sectoral plans, which have determined the new development areas and at the same time influenced the old districts. One of these sectoral plans proposes an 'Administrative Centre' which includes a large area of Benfica and Luz and contains various ministries and other departments of the central administration, employing approximately forty thousand workers. The centre was planned at the end of the 1960's in the master plan and was redesigned in 1976 and considered as a systematic expropriation area in 1979. A large avenue, an underground line and schools were built, and a project for a hypermarket (Continente) was approved. By the end of the 1970's this project included also housing and services. From the beginning the intention was to include housing in order to avoid the nightly abandonment of the area and to reduce management costs.

It is obvious that Baixa Pombalina and New Avenues [4] would benefit from this new administrative centre, but it would seem difficult to move forty thousand people (with the same working schedule) into that area. This new administrative centre is sited along the north-south axis, is well connected by fast roads, has an underground connection, is in a peripheral position to the capital, but still on the inside. For many years this project has been under threat from the government. For example, the city council has been selling some of its best land close to the communication axes and the underground line. The Benfica Football Club has recently been allowed to take over a great part of the land neighbouring the centro administrativo avenue, with an extension of 650 metres.

[4] When consulting the telephone directory one finds that the Agriculture and Fishing Ministry, for example, has at least sixty different addresses between Baixa and the New Avenues.

Also at the Colégio Militar Station where it had been planned to build the Agriculture and Fishing, Finance, Industry and Energy, Health and Security Ministries and the Statistical and Geographic Institutes became instead the site for a gigantic supermarket (Continente) owned by Sonae, with one hundred cashiers, and a shopping centre with two adjoining housing blocks.

Apart from the well established Baixa - Marquês de Pombal - Avenidas Novas tertiary axis the 'Strategic Plan for Lisbon' predicts that several other areas are suitable for development. They are the north area of Eduardo VII Parque, (where the Palace of Justice is situated), an area between Benfica and Luz, a large area between Berna and Forças Armadas Avenues, and two other zones, in Alcântara and Chelas. Outside the city and towards the north there are Carnaxide and Alfragide as the two relatively recent centres of tertiary activities, whereas on the south side of the river the cities of Almada and Barreiro are the two major centres.

This movement towards the north will be beneficial to Baixa Pombalina. This repercussion will be first felt in Comércio Square. It is at present fully used by the central public administration. The buildings are inadequately occupied with some floors being used entirely as stores, others with people crowded in rooms with unsatisfactory working conditions. The plan to move the ministries from this square is still under consideration and there are already projects for the rehabilitation of the buildings. A multi-purpose room for cultural activities, restaurant and café is proposed for the old building occupied by the Finance Ministry, (just in front of Martinho da Arcada café). The structure and furniture will be designed in metal; removable and adaptable to different activities.

The move to the north of administrative activities in the near future will completely alter this area. Comércio Square will become part of Baixa Pombalina, whereas it is a distinct part in the whole area at the moment. From Conceição Street up to Comércio Square there are hardly any shops, only banks and public central administration.

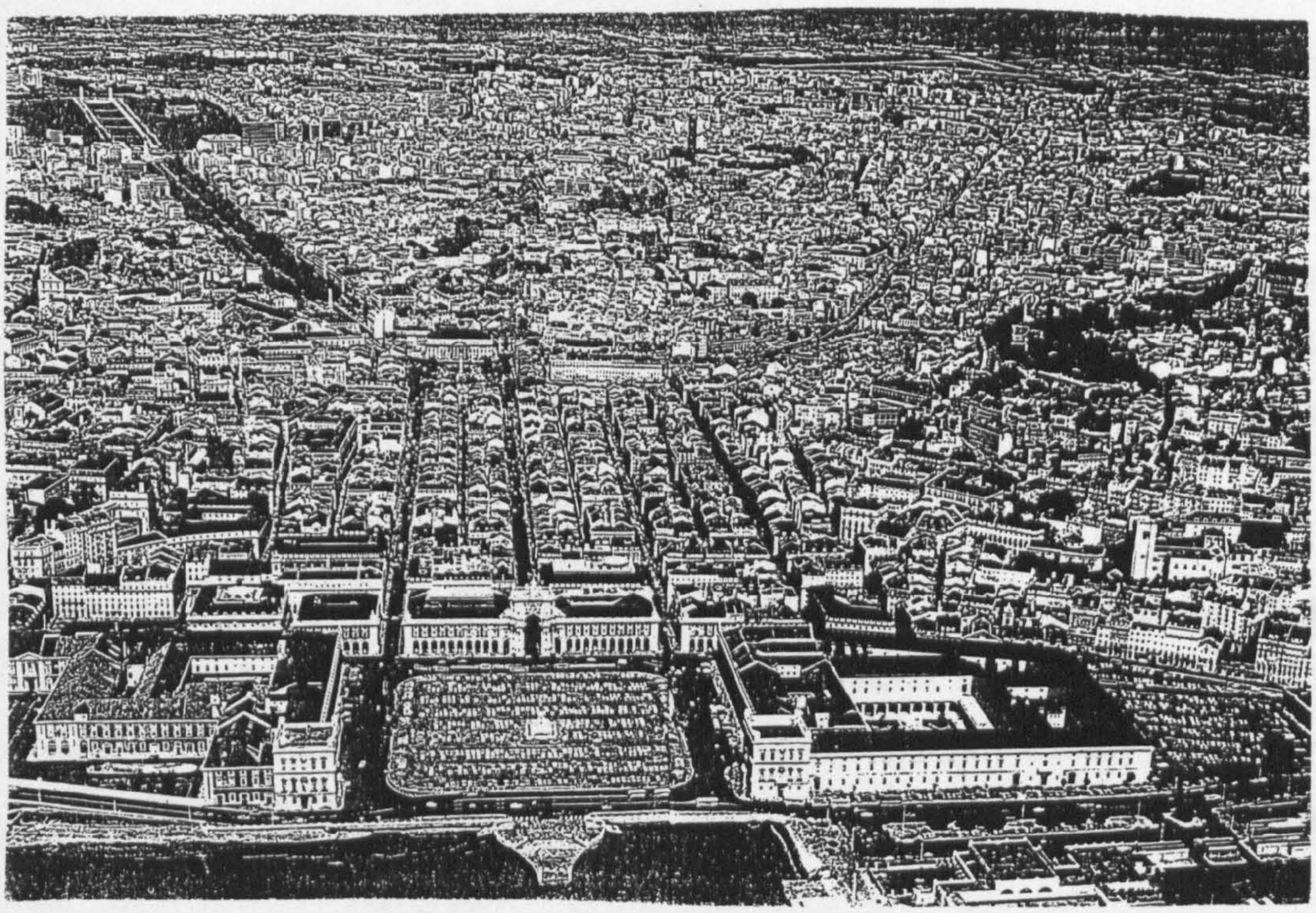
8.3.1 Function and Morphology

Pre-Pombaline Baixa was the favoured area for the establishment of tertiary functions. With the Pombaline plan the north-south direction became the most important for the category of streets discussed above. The best tertiary functions requiring easy access are located in Ouro and Augusta streets, which make the connection between the two most important squares, Rossio and Comércio Square. The secondary streets (north-south) located between the four main ones, (Sapateiros, Correeiros, Douradores and Crucifixo) specialize in tertiary activities, necessary to the centre. Small restaurants, modest offices and warehouses connected with trade activities are established here.

By the end of the nineteenth century the expansion towards the north was concentrated along two axes, the Liberdade and Almirante Reis Avenues. (see Figure 8.7) The first was a continuation of the richer part of Baixa (Augusta, Ouro streets, Chiado and Rossio) the latter of "poor" Baixa (Fanqueiros, Madalena streets, Figueira Square and Palma Street).

As expected the centre has moved towards the north with a consequent transfering of activities and specialization within the centre. Although in part it has moved to the north, the central public administration is still located mainly in the centre. It is possible to keep the central administration in the centre but it should be in a marginal position, never forming a physical and psychological barrier as happens in Baixa.

The bank headquarters and the agencies also show a clear movement to the north, as the Fomento, Alentejo and Fonsecas & Burnay banks moved their headquarters out of the centre. (see Figure 8.7) The Lloyds is in Liberdade Avenue, while the Bank of Portugal is building a new headquarters in Espanhã Square and Caixa Geral de Depositos in Campo Pequeno. This movement towards the north and the new centre will in future take pressure off Baixa Pombalina, but it will still be necessary to provide new uses for their previous headquarters and not simply leave them as places for storage.



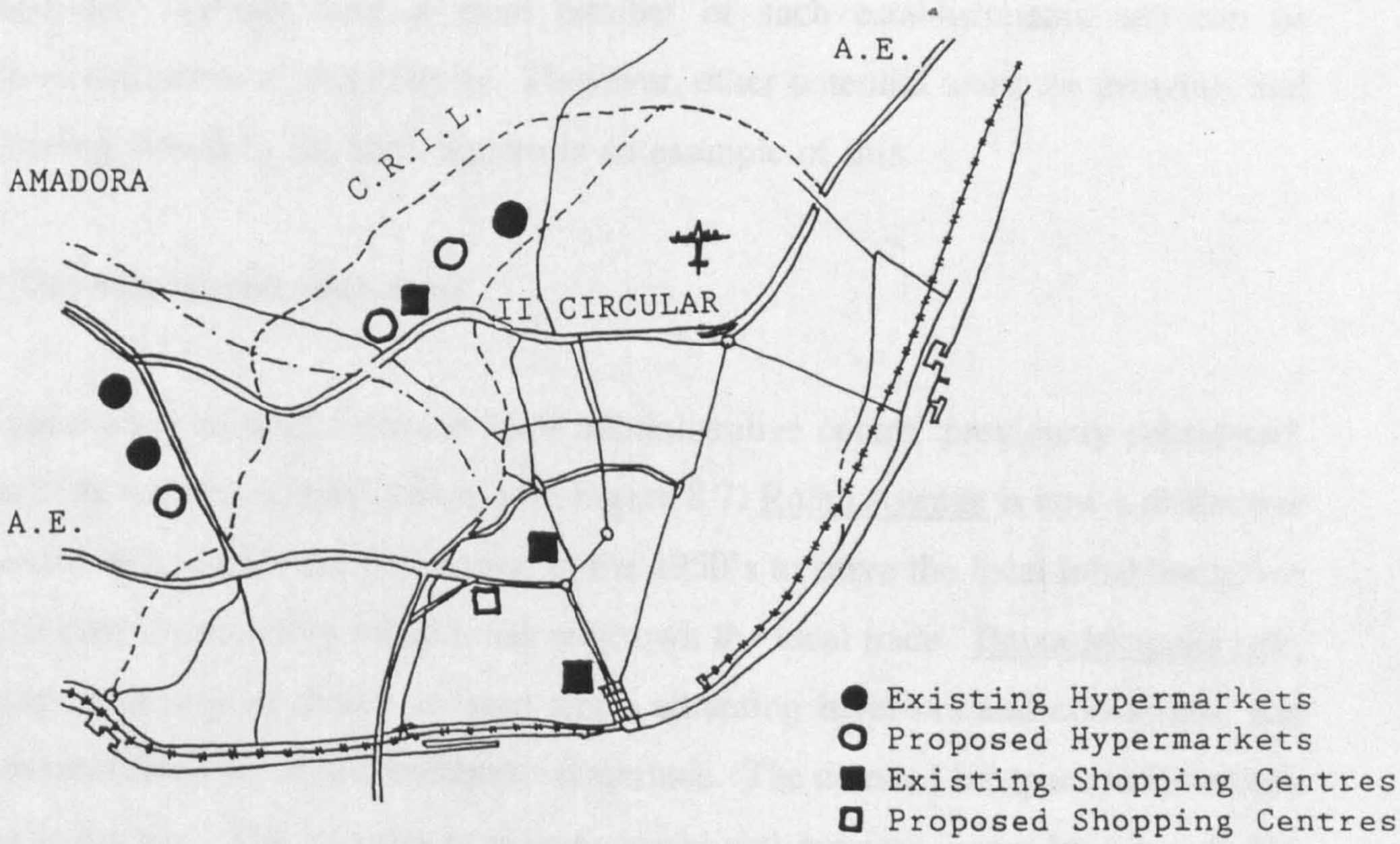


Figure 8.7 The new commercial centres and the existing and projected supermarkets.

Retail trade (rich) is related to the consumption of goods for personal use and is concentrated in the traditional centre. It extends up to Liberdade Avenue, Rosa Araújo and Marquês de Pombal, but specializes in personal luxury services such as beauty institutes. Modest retail trade is concentrated in peripheral areas such as Fanqueiros Street, Figueira Square, Martim Moniz, Palma Street, Corpo Santo, Arsenal Street, São Paulo, Loureto-Calhariz, Carmo Calçada. There is a tendency for it to extend to Almirante Reis Avenue.

Wholesale trade is found in some peripheral streets of the centre such as, Madalena, Bacalhoeiros, Fanqueiros (in part), Alecrim and adjacent streets and Ribeira, although Almirante Reis is the most important. Some enterprises have already left the centre to follow the movement of the population. Specialized commerce, (medical supplies) are concentrated in the New Avenues.

Hotels were first located in the Cais do Sodré area. Later they moved closer to the Rossio Railway Station where they stayed until 1940. Today the Marquês de Pombal and Liberdade Avenue have a great number of such establishments and can be considered the centre of this activity. However, other potential areas are growing, and the adjoining streets to Espanhã Square is an example of this.

8.3.2. The new commercial areas

These centres are distinct from the 'new administrative centre' previously considered, and can be found throughout Lisbon. (see Figure 8.7) Roma Avenue is now a distinctive commercial area, which has first begun in the 1950's to serve the local inhabitants, but due to its easy accessibility today it has outgrown the local trade. Baixa-Marquês axis, is an important area as Baixa, is once again attracting investors and consumers, and trying to reestablish its natural commercial aptitude. The demand for space in Liberdade Avenue is intense. The location of a commercial and services centre by Eduardo VII Park, integrated in a vast complex, will reinforce this axis. This new area will be devoted to luxury commercial activities. Segunda Circular has also been a favourable axis for the establishment of large commercial activities.

For the Baixa conservation one must take into account two very recent rehabilitation projects which are occurring in the city centre. These are the urban renovation of Martim Moniz and the Chiado reconstruction, which are bound to have spill-over effects into Baixa.

The Martim Moniz area is a very run-down empty space in the centre of Lisbon. (see Figure 8.8) Its present state is the result of several expropriations and demolitions carried out by the Lisbon City Council since the 1940's. The main objective was to open the Almirante Reis - Baixa Pombalina axis to a better traffic flow, with a secondary objective of promoting a renovation policy for this city centre area based on Post-War urban ideas. From the old dense pattern only one building was left: the Nossa Senhora da Saúde Chapel.

For forty years, several proposals for the renovation of the area were presented, but virtually none were carried out. In 1980 EPUL (Lisbon Public Urban Enterprise) promoted a public competition for the Martim Moniz renovation plan, finally selecting the proposal prepared by the architects Carlos Duarte and José Lamas. (see Figure 8.8) Their proposal was based on the organization of different types of urban situations, creating their necessary spaces, but not based on the built pattern. The Martim Moniz renovation cannot be thought as of a simple revitalization of an open space in a degraded area, or as an unsuitable extension of tertiary activities in Baixa. It should promote proper conditions which are fundamental for the city centre upgrading and an organization of spaces where other activities besides work can flourish.

The summary programme of floor-space by activity includes:

Hotels	16 190 m^2
Offices	15 022 m^2
Commerce (general)	32 902 m^2
Commerce (Food)	1 748 m^2
Show rooms	6 050 m^2
Cultural places	6 364 m^2
Housing	5 632 m^2

Total	83 908 m^2
Public Parking	17 151 m^2
Restr. Parking	13 088 m^2

TOTAL	114 147 m^2

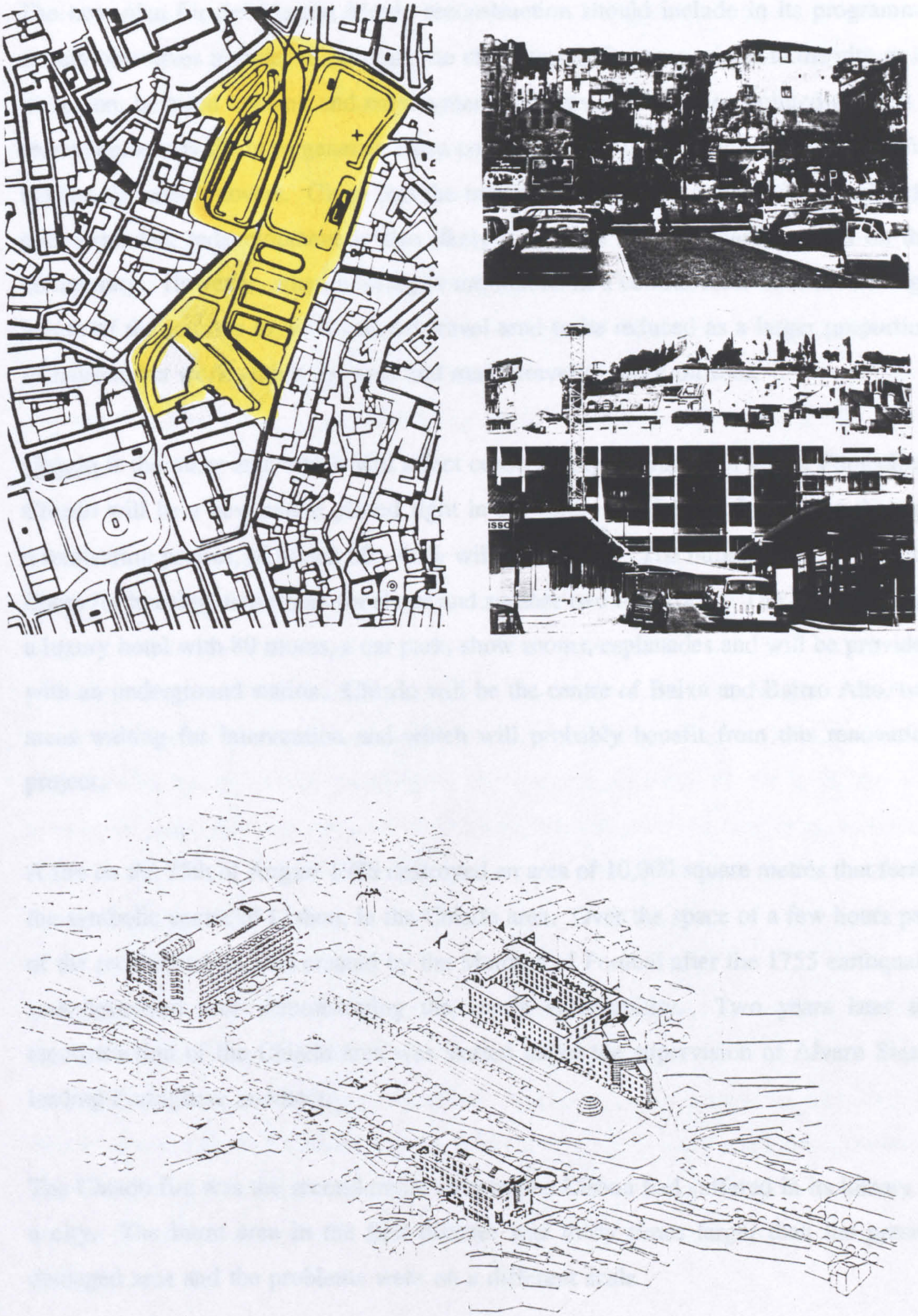


Figure 8.8 Urban renovation in Martim Moniz

The new plan for the Martim Moniz reconstruction should include in its programme certain objectives in order to decrease the enormous differences, either in the city or in its region, between housing and employment. However it has been pointed out that a redevelopment is likely to generate extra congestion and that its impact will be felt far beyond the area it covers. Given that the transport networks of most cities are already over extended, redevelopment is also likely to impose extra congestion costs on the community. However, when housing is introduced in a central area, both the average length of the journey to work and car travel tend to be reduced as a larger proportion of households work within the area and many travel to work on foot.

Chiado is the other area which will affect considerably the future of Baixa Pombalina. Chiado will be a new centre placed right in the centre of Lisbon. It is going through a renovation project, of which 30 - 40% will be housing. The buildings will have two floors for housing, two floors for shops and another two for offices. The area will have a luxury hotel with 80 rooms, a car park, show rooms, esplanades and will be provided with an underground station. Chiado will be the centre of Baixa and Bairro Alto, two areas waiting for intervention and which will probably benefit from this renovation project.

A fire on the 25th of August 1988 destroyed an area of 10,000 square metres that forms the symbolic centre of Lisbon, in the Chiado area. Over the space of a few hours part of the reconstruction area created by the Marquis of Pombal after the 1755 earthquake was destroyed thus demonstrating the area's vulnerability. Two years later the reconstruction of the Chiado area was started under the supervision of Alvaro Siza a leading Portuguese architect.

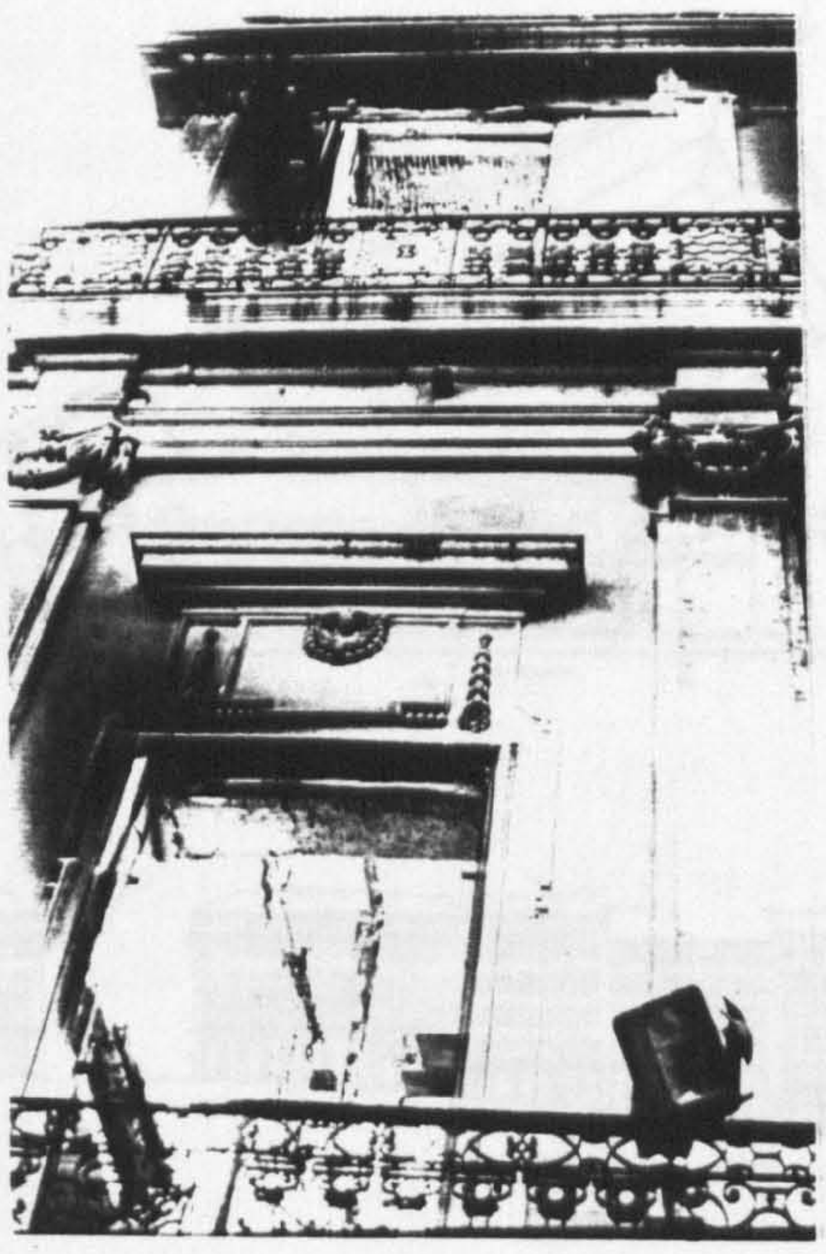
The Chiado fire was the second major catastrophe Lisbon had suffered in its history as a city. The burnt area in the first disaster was thirty times larger than the present damaged area and the problems were on a different scale.

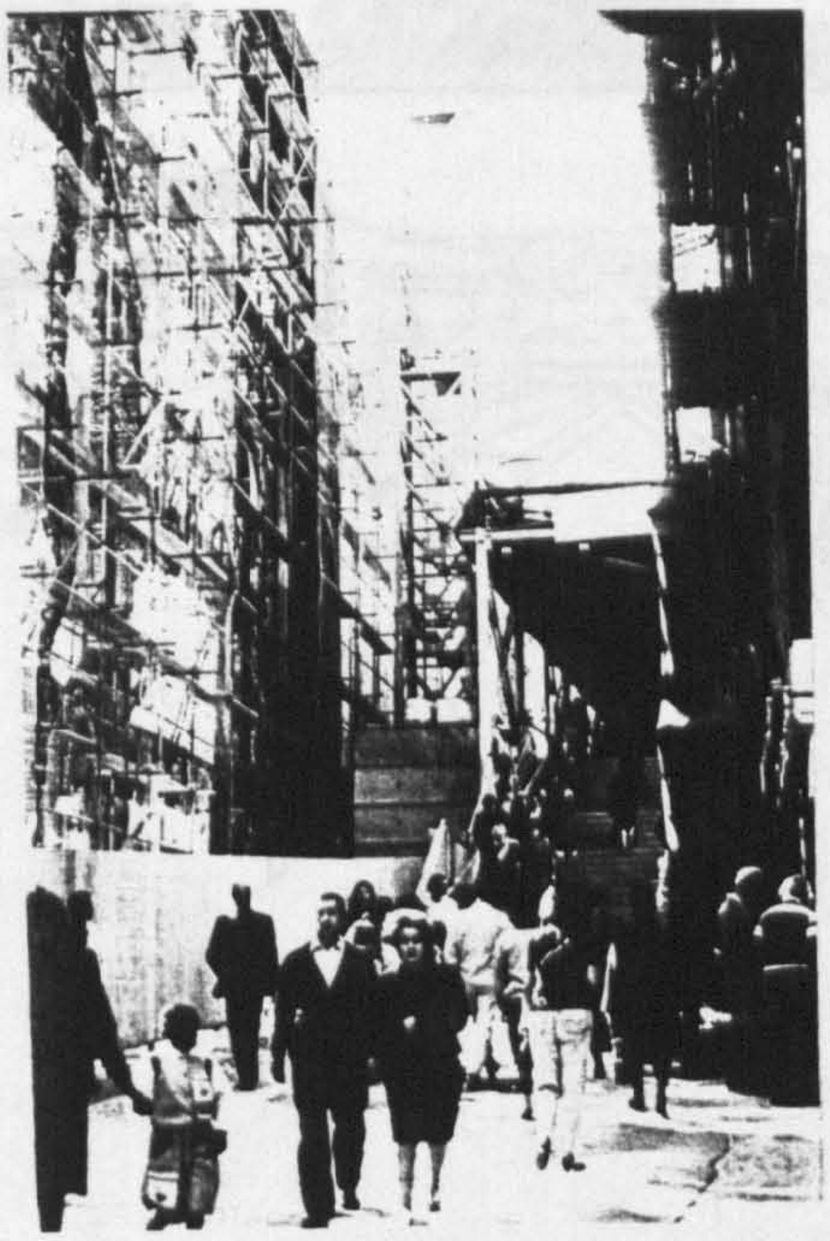
Eighteen buildings were destroyed in the Chiado fire, however in four cases the facades where retained (see Figure 8.9 and 8.10). The building facades were from the eighteenth century, except the ones of the Chiado and Grandella department stores which date from

the beginning of the century. In 1990 Siza's plans were approved and the task involved the rehabilitation and reconstruction of the physical structures but also the re-establishing of a lost urban life. The city council negotiated with the various property owners with regard to the changes introduced by the programme, and the three main objectives were as follows: (i) preserving the collective feeling of the earlier city; (ii) restoring the functional equilibrium of the traditional city, by re-establishing a residential component for it, with a 30-40% residential occupation adjacent to the places of work, commerce and to facilities and services; (iii) improving the infrastructure, while avoiding excessive hierarchization of the streets, by favouring accessibility, especially between the lower part and the Bairro Alto, creating parking areas, and integrating a new access to the subway.

In his plan the building facades are either to be kept or rebuilt according to their original design. The shop windows too, in size and rhythm, will comply with the original design. The facades will be either rebuilt or consolidated and new frames will be built providing a total of 60,000 square metres of floor space. Building heights and floor levels will remain as before but special attention will be given to health and security requirements for the rebuilt buildings. The ownership profile of the buildings will remain the same, however the uses will change. Housing will be largely reintroduced, which is to be more or less between 30 and 40 per cent of the total area to be rebuilt, that is 120 apartments.

In the project the vertical access to the offices and residences are inverted, so that they pass through the interior of the block, leaving a greater area free for commerce on the street fronts. Passages are opened into the interior. A new pedestrian route will be created connecting Rua Garrett and the Church do Carmo and commerce introduced. The Chiado building will be a hotel and the Grandella building will have a mixture of commerce, offices and cultural facilities.





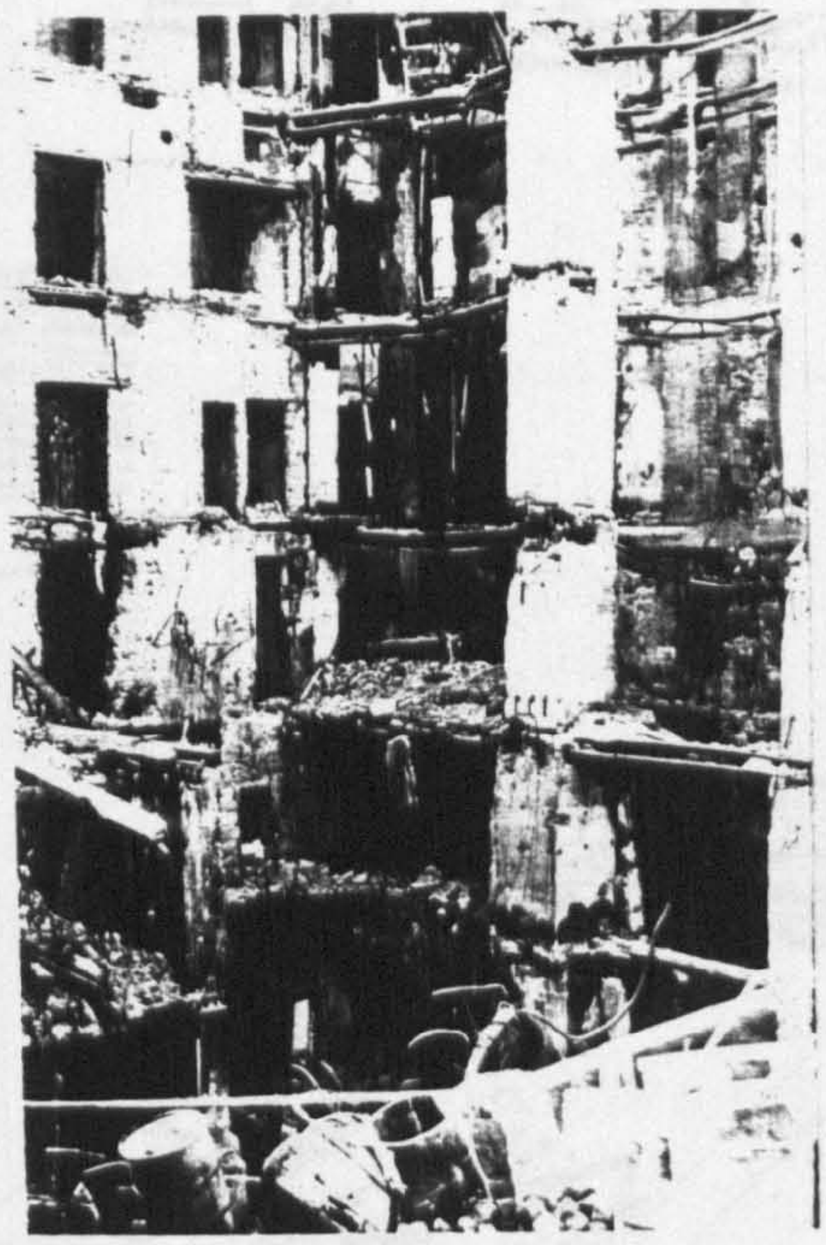


Figure 8.9 The Chiado reconstruction

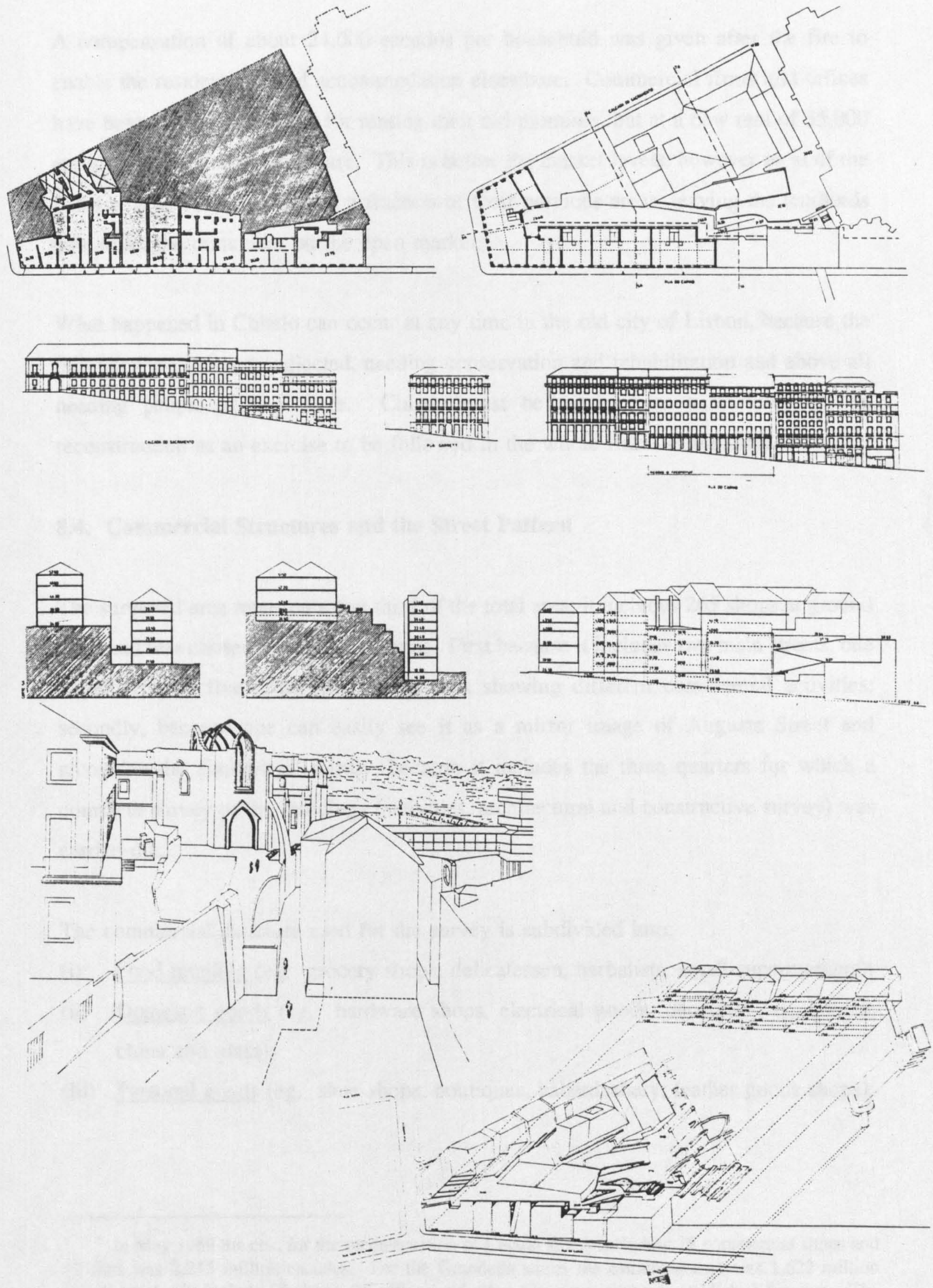


Figure 8.10 The plans for the Chiado reconstruction

A compensation of about 24,000 escudos per household was given after the fire to enable the residents to find accommodation elsewhere. Commercial firms and offices have been given first refusal for renting their old premises, but at a new rent of 35,000 escudos (£140) per square metre. This is below the market levels, however most of the firms will be only able to rent a fraction of their previous areas, leaving the landlords able to let the remainder on the open market.[5]

What happened in Chiado can occur at any time in the old city of Lisbon, because the buildings are old and neglected, needing conservation and rehabilitation and above all needing people to live there. Chiado must be regarded as a warning and its reconstruction as an exercise to be followed in the whole Baixa Pombalina.

8.4. Commercial Structures and the Street Pattern

The surveyed area represents one-third of the total area; it includes 265 shops at ground level and was chosen for several reasons. First because it includes two main streets, one secondary and five cross streets, and thus showing different commercial activities; secondly, because one can easily see it as a mirror image of Augusta Street and recognize the similarity; thirdly, because it includes the three quarters for which a complete survey of the buildings (activities, architectural and constructive survey) was carried out.

The commercial structure used for the survey is subdivided into:

(i) Food retailing (eg. grocery shops, delicatessen, herbalists, small supermarkets);

(ii) Domestic goods (eg. hardware shops, electrical goods, decorating equipment, china and glass);

(iii) Personal goods (eg. shoe shops, boutiques, haberdashery, leather goods shops);

[5] In May 1989 the cost for the reconstruction of Chiado stores including 18 commercial shops and 82 flats was 2,215 million escudos. For the Grandella stores the estimated cost was 1,622 million escudos and will include 69 shops, 26 offices and other five areas without established function. The José Alexandre building, including 36 shops, 32 offices and 32 flats will cost 546 thousand escudos. The rehabilitation of 18 shops destroyed by the fire is budgeted for more than 7 million escudos, of which 362 400 are for the reconstruction of public spaces.

(iv) Specialized goods (eg. jewellers, photographic equipment, antiques, newsagents and tobacconists, gift shops);

(v) Personalized services (eg. shoe repairs, barber shops);

(vi) Food and catering services (eg. restaurants, snack-bars, cafes);

(vii) Accommodation services (eg. Hotels);

(viii) Medical and paramedical services (eg. chemists);

(ix) Banking and other services (eg. banks, post-office, insurance services).

The following table 8.2 shows the commercial activities at the ground level in 1988 and 1992. The first point which emerges from the survey is that apart from personal and specialized use goods, which together account for 59% of total commercial activity, few other activities are well provided for. Food retailing for example, accounts for only 1%. However, food and catering services accounts 14%.

Table 8.2 Commercial structure in 1988 and 1992

	1988	1992
Food retailing	6	3
Domestic goods	31	22
Personal goods	93	99
Specialized goods	59	57
Personalized services	4	5
Food/catering services	38	38
Accommodation services	2	2
Medical/paramedical serv.	5	5
Banking/other services	17	20
Closed	10	14
Total	265	265

It is clear that in four years the categories of the commercial activities in Baixa Pombalina have changed. There is an increase in personal goods; banking and insurance services along with a number of closed shops and a decrease in domestic goods and food retailing. This change indicates that the area tends to specialize in those sectors

which support Baixa as a city centre. The traditional shops of domestic goods are decreasing in number because many supermarkets have been opened. The sectors which could support residential use are few (e.g. personalized services and food retailing) and tend to disappear together with the population decrease. Banks and insurance companies have been progressively buying property in Baixa, but because the property is very subdivided and has different owners, these new owners are not able to buy in one block the amount of space they need for their activities, therefore they will have to wait until they buy two or three floors, a whole building or even a quarter. This results in a large number of closed floors and shops.

It has been mentioned throughout this dissertation that in Baixa there is a direct relationship between the commercial structure and the street pattern. The gridiron plan presents a street hierarchy which consists of: (i) main streets, making the connection with the two main '*loci*', Rossio/Figueira and Comércio Squares; (ii) secondary streets, parallel to the main ones but placed in between them; (iii) cross streets, between the former two. Main streets, (Augusta, Ouro and Prata) are respectively 13.70m, 13.50m, 11m wide and offer for sale the most expensive goods. Augusta and the crossing streets (S.Justa, S.Nicolau, Vitória) are now pedestrianised and for that reason they have reinforced either their dominating role as the principal urban space in Baixa or have just upgraded their value. Ouro (or Gold Street) may be ranked second because of the type of trade (jewellers and banks) it connects Rossio with Comércio Square. Prata Street is also very important but is clearly in third place among these main streets. Jewellers and banks can be found but as its name suggests (Silver Street) it is not as important as Ouro Street. It also connects two squares, Comércio with Figueira. However the latter is secondary when compared with Rossio. Secondary streets are 8m wide and contain the shops of lower rents that consequently have less expensive goods. They are Sapateiros, Correiros, Douradores and Fanqueiros.

The intention here is to determine this distribution in the study area. Tables 8.3 and 8.4 represent the commercial structure by street (shown in the columns) and by activity (shown in the rows) in 1988 and 1992 respectively. Figure 8.11 and 8.12 also give this distribution in plan.

Augusta, Correiros and Prata streets are the selected streets for this analysis. The reason for this choice is related to the activities found in the transverse streets which tend to contain the same kind of trade and are most of the time an extension in the type of shop-front from the main street. Therefore when there is a shop in the transverse street, this is integrated into the main street. Despite the increasing number of shops in these streets resulting from pedestrianization, they still are in a smaller number because their facade area is also less.

For each activity three types of information are shown. The number of shops for that activity in the street; immediately below, the proportion of those shops to the total number of shops that exist for that activity and then the percentage which the same shops occupy in the street as a whole. Thus the second row (% of type) expresses a percentage of the total number of shops in the relevant activity in all the three streets and the third row (% of street) express the number as a percentage of total shops in the relevant street.

Personal goods represent 51% of all ground shop activity in Augusta street and 48% of its type. Specialized goods represent 35% of all shop activity in Prata street and 58% of its type. Food and catering services are mainly concentrated in Correeiros street showing 29%, however this represents 58% of all ground shop activity in this street. This street also shows a high percentage of closed shops and warehousing, 12% for all the ground floor activity and 64% of its type.

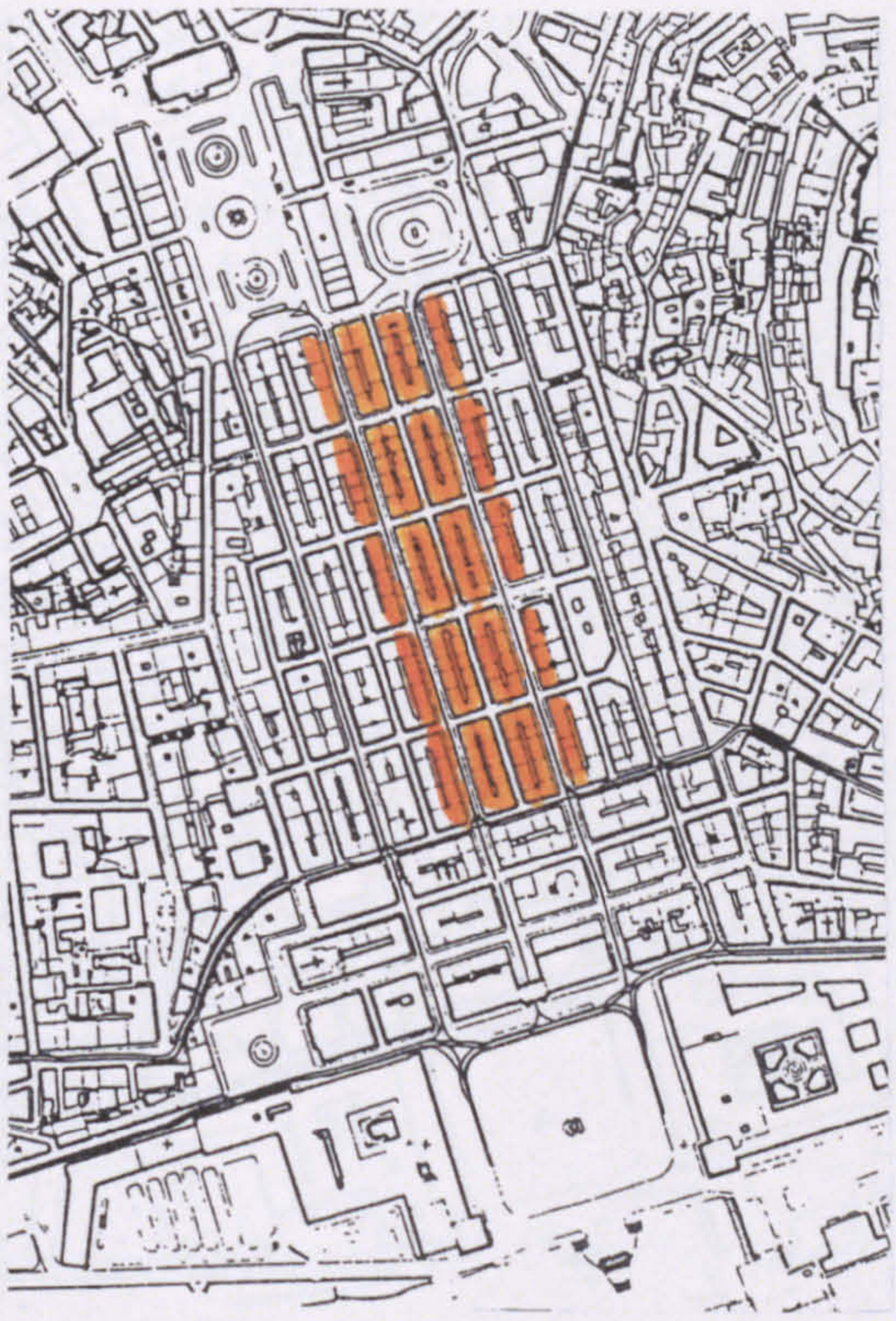
From 1988 to 1992 some differences occur in the distribution of commercial activity by street and by activity. There is a decrease of personal goods in Prata and Augusta street and an increase in Correeiros.

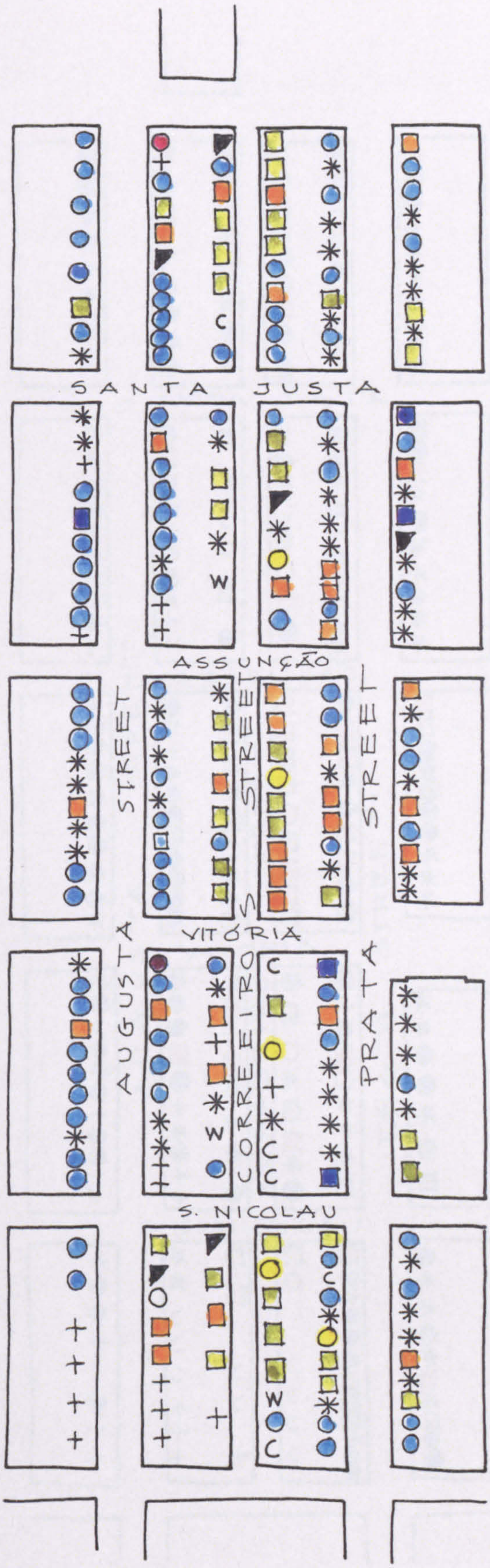
Table 8.3 Distribution of commercial activities by street - 1988

	Augusta	Correeiros	Prata	TOTAL
Food retailing	2	3	1	6
% of type	*33%*	*50%*	*17%*	
% of street	*2%*	*4%*	*1%*	*2%*
Domestic goods	7	11	13	31
% of type	*23%*	*35%*	*42%*	
% of street	*7%*	*15%*	*14%*	*12%*
Personal goods	50	14	29	93
% of type	*54%*	*15%*	*31%*	
% of street	*53%*	*19%*	*31%*	*35%*
Specialized goods	15	7	37	59
% of type	*25%*	*12%*	*63%*	
% of street	*16%*	*9%*	*39%*	*22%*
Personalized services		4		4
% of type	*0%*	*100%*	*0%*	
% of street	*0%*	*5%*	*0%*	*2%*
Food/catering services	4	24	10	38
% of type	*11%*	*63%*	*26%*	
% of street	*4%*	*32%*	*11%*	*14%*
Accommodation services	2			2
% of type	*100%*	*0%*	*0%*	
% of street	*2%*	*0%*	*0%*	*1%*
Med./paramed. services	1		4	5
% of type	*20%*	*0%*	*80%*	
% of street	*1%*	*0%*	*4%*	*2%*
Banking and others	14	3		17
% of type	*82%*	*18%*	*0%*	
% of street	*15%*	*4%*	*0%*	*6%*
Closed or warehousing		9	1	10
% of type	*0%*	*90%*	*10%*	
% of street	*0%*	*12%*	*1%*	*4%*
TOTAL	95	75	95	265

Table 8.4 Distribution of commercial activities by street - 1992

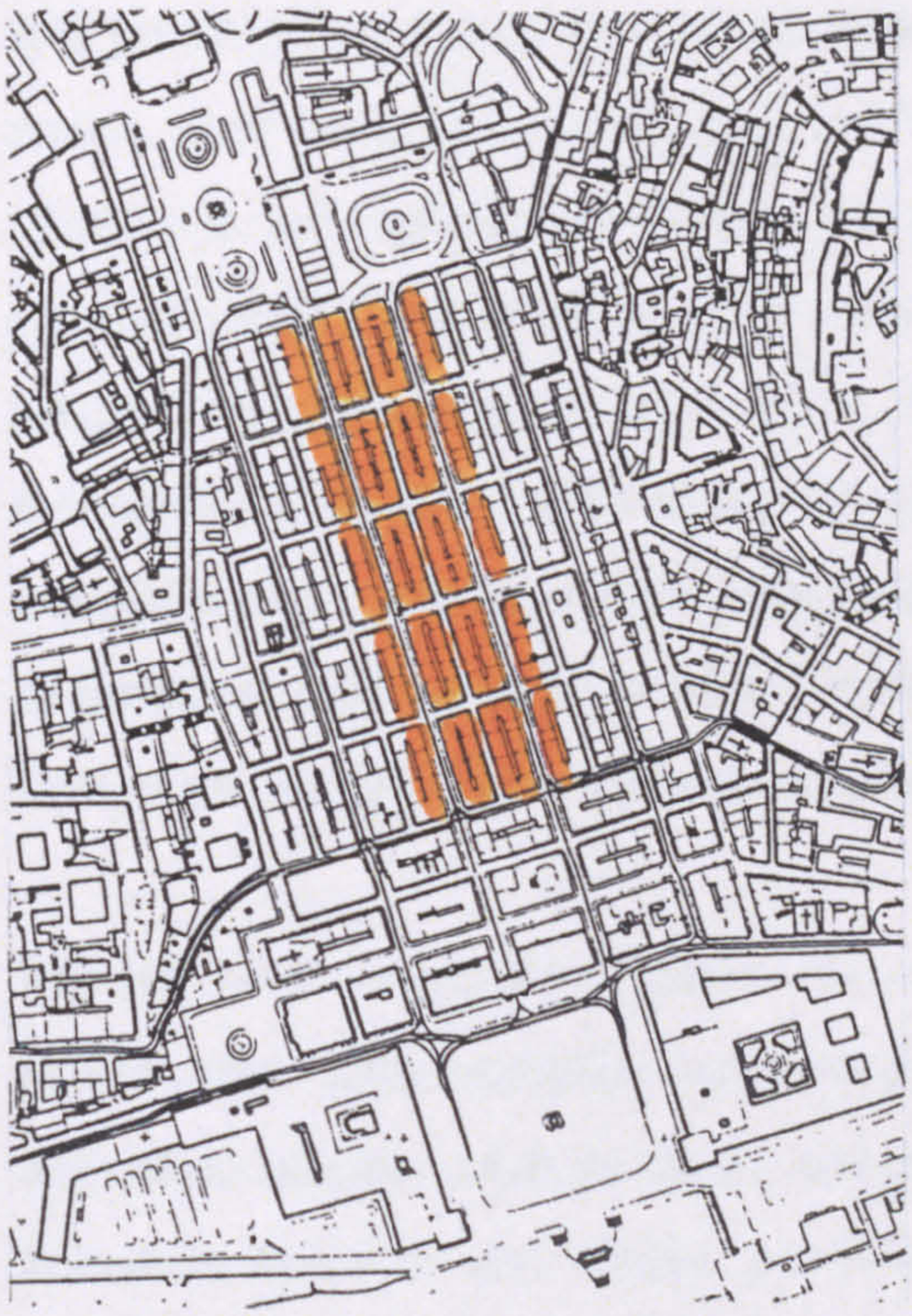
	Augusta	Correeiros	Prata	TOTAL
Food retailing	1	1	1	3
% of type	*33%*	*33%*	*33%*	
% of street	*1%*	*1%*	*1%*	*1%*
Domestic goods	2	10	10	22
% of type	*9%*	*45%*	*45%*	
% of street	*2%*	*13%*	*11%*	*8%*
Personal goods	48	18	33	99
% of type	*48%*	*18%*	*33%*	
% of street	*51%*	*24%*	*35%*	*37%*
Specialized goods	16	8	33	57
% of type	*28%*	*14%*	*58%*	
% of street	*17%*	*11%*	*35%*	*22%*
Personalized services		5		5
% of type	*0%*	*100%*	*0%*	
% of street	*0%*	*7%*	*0%*	*2%*
Food/catering services	3	22	13	38
% of type	*8%*	*58%*	*34%*	
% of street	*3%*	*29%*	*14%*	*14%*
Accommodation services	2			2
% of type	*100%*	*0%*	*0%*	
% of street	*2%*	*0%*	*0%*	*1%*
Med./paramed. services	1		4	5
% of type	*20%*	*0%*	*80%*	
% of street	*1%*	*0%*	*4%*	*2%*
Banking and others	17	2	1	20
% of type	*85%*	*10%*	*5%*	
% of street	*18%*	*3%*	*1%*	*8%*
Closed or warehousing	5	9		14
% of type	*36%*	*64%*	*0%*	
% of street	*5%*	*12%*	*0%*	*5%*
TOTAL	95	75	95	265

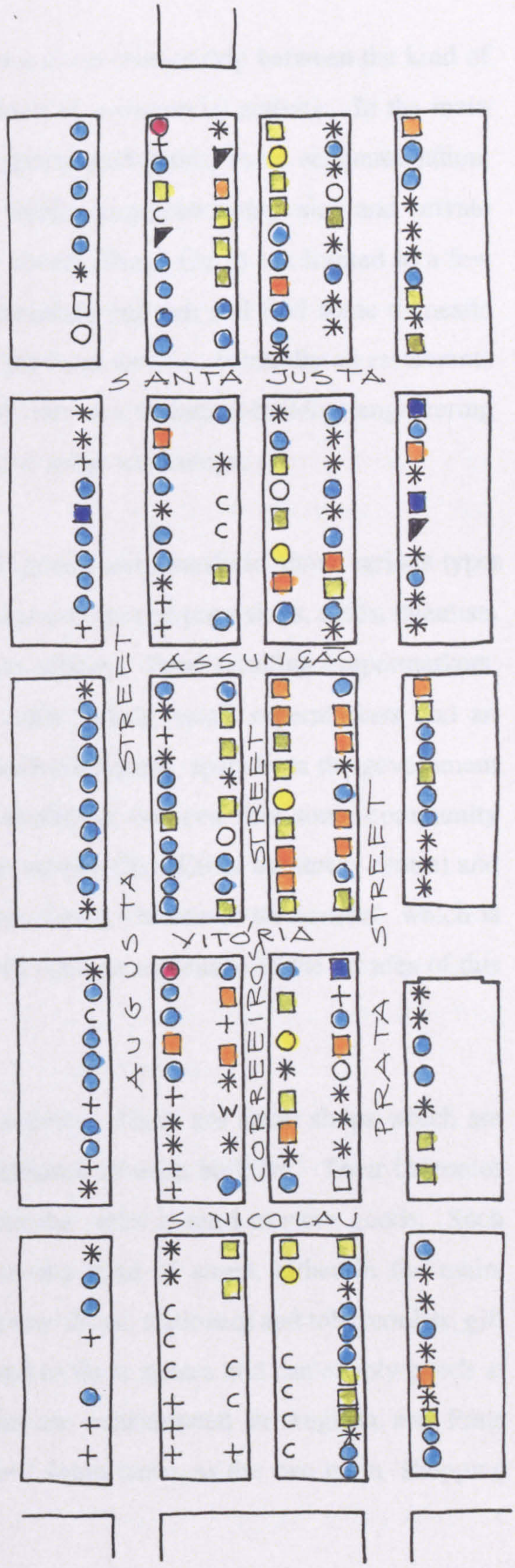




- Food retailing
- Domestic goods
- Personal goods
- Specialized goods
- Personalized services
- Food/catering services
- Accommodation services
- Medical/paramedical services
- Banking/other services
- C Closed

Figure 8.11 Distribution of commercial activity in 1988





- Food retailing
- Domestic goods
- Personal goods
- Specialized goods
- Personalized services
- Food/catering services
- Accommodation services
- Medical/paramedical services
- Banking/other services
- Closed

Figure 8.12 Distribution of commercial activity in 1992

It is possible to conclude that in Baixa there is a close relationship between the kind of streets, their importance in the plan and the kind of commercial activity. In the main streets one can find shops with personal and specialized goods, some accommodation, chemists, cafés and other services such as banks, insurance companies and private offices. Food retailing is also found in these streets (Prata, Ouro) but limited to a few delicatessens, butchers and bakers. In the secondary one can still find some domestic use goods and specialized use goods, most of the food services, (virtually all restaurants in Baixa are in these streets), some community services, technical-building-engineering equipment, most of the small supermarkets and some workshops.

The two '*loci*' or the three squares, Rossio, Figueira and Comércio show various types of activities. In Rossio there are some personal and special provisions, cafés, chemists and other services such as banks and private offices. Food retailing (supermarkets, bakeries) domestic and special provisions, cafés, hotels, small supermarkets and an infants' school are located in Figueira. In Comércio Square, apart from the government departments which occupy the majority of buildings, one can find some community services such as a central post office, a health service (Red Cross treatment centre) and a library. Worth mentioning is a café in Prata Street, 'Martinho da Arcada', which is going through a process of renovation and will open an esplanade in the arcades of this square.

It is important to note another commercial activity. There are small shops which are frequently found in the open space by the entrance of each building. Their balconies are open to that entrance and the space under the stairs is used to store goods. Such shops pay lower rents and can be found in any kind of street, either in the main, secondary or transverse streets. Jewellers, flower shops, stationers and tobacconists, gift shops and shoe repairers are very well adapted to these spaces and can supply goods at lower prices. Personal and special supplies are concentrated in Augusta and Prata Streets and are related directly to these streets' importance, as the two main 'shopping streets'.

8.5 The shopping centres and hypermarkets

Shopping has a powerful influence on the character of urban redevelopment. New commercial formulae began to emerge in the early 1970's, including shopping centres and large supermarkets. Shopping and eating habits change. Many more people now go shopping by car, making weekly expeditions (probably on the weekend) with a few supplementary trips in between. Due to demand, the supermarkets and shopping centres are open in the evenings. The high degree of investment concentrated in the retail sector has produced an increase in the size and number of new shopping centres. Today we are living in the age of the supermarket. Nothing in the retail business has succeeded so well, and nothing in the near future seems capable of replacing it. Large supermarkets and superstores, with a wide range of goods on offer have led to increasingly large quantities of goods being handled by a comparatively small number of outlets.

It seems unlikely that central business areas will lose their importance as shopping centres. However, shops in marginal locations are finding it increasingly difficult to survive. This suggests that careful consideration should be given to the social and economic problems represented by the proprietors of such shops having to abandon their way of life. In the centre the replacement of old shops by new ones is leading to a closure of businesses unable to pay the higher rents involved.[6]

The first shopping centres (Apolo 70, Imaviz and Alvalade) in Lisbon were situated near underground stations in important residential and employment areas. The large supermarkets were placed in areas badly served, such as Olivais and Alcântara. Amoreiras Shopping, opened in 1985, is located close to Marquês de Pombal, next to the Cascais-Sintra exit. It is very popular because it integrates recreational as well as commercial activities. It is visited monthly by 1.500.000 people. Through the following Table 8.5, one is able to compare the commercial activities in Baixa and Amoreiras and realise how similar they are. However, Amoreiras presents higher values for food,

[6] An examination of the confectionery, tobacco and newsagents' trades suggested that a major cause of falling numbers was a combination of lack of enterprise on the part of small shopkeepers and change in shopping habits brought about by property redevelopment.

recreation, sports and culture.

Table 8.5 Commercial activity in Baixa and Amoreiras

	Baixa	Amoreiras
	%	%
Food	1.1	2.9
Personal Equipment	34.1	32.8
House/Professional equip.	15.9	15.6
Recreation, sport, cultural	9.6	17.8
Hygiene and health	5.5	2.9
Transportation material/fuel	0.3	0.3
Warehouses, supermarkets	0.6	0.6
Restaurants	17.0	17.2
Commercial services	11.2	7.7
Empty shops	4.7	2.2
Total	100.0	100.0

Source: Pereira,M.,1990.

During the 1980's shopping centres spread throughout the city.[7] Today there is continual pressure for more development, measured by new shopping centre and supermarket projects. In 1987 the first hypermarket, Continente, was opened in Lisbon's peripheral area. Later, between 1987-1989, three others were opened in the metropolitan region with a total of 23 850 m^2 of shopping area. It was predicted that by 1992 nine more hypermarkets would open and several other big complexes like Amoreiras would be sited throughout the city.

[7] Shopping: Fonte Nova (1985) - 84 shops; Stromp (1983) - 30 ..; Lumiar (1985) - 70 ..; Mouras (1987) - 91 ..; Gemini (1985) - 60 ..; Olaias (1984) - 80 shops; S.J.Deus (1985) - 85 ..; Ibersil (1986) - 72 ..; Brasil (1988) - 31 ..

The development of hypermarkets has caused controversy between their promoters and their critics. The former values the increased choice offered to the consumer, while the latter deplores the possible decreasing quality of life the in towns affected. It is argued that controls should exist on this kind of development if one wants to preserve the commercial streets and the independent traders as well. The latter are usually closer to their customers, offer more flexible opening hours and offer the 'personal touch'. Often, too, they can offer specialised goods and services which would be uneconomical for large stores to offer. Briefly then, the controversy can be divided into two major - and opposing - viewpoints:

(i) The green belt or rural areas should be preserved. Quite apart from the buildings themselves, the very large expanses of car parking required are alleged to be destructive of amenities.

(ii) Diversion of trade to out-of-downtown regional shopping centres would imperil the urban renewal programme of sizeable industrial centres and might 'kill' small trade.

However,

(i) Where such sites are suitably placed in relation to centres of population and the road system serving them, development for shopping would improve the amenities offered, not destroy them.

(ii) These shopping centres and supermarkets are designed specifically for shoppers with cars who do not wish to shop in town centres.

8.6. Retail and Office Market

The development of retail trade has been blocked by the protective landlord and tenant legislation, which separates traders from market forces and obstructs the entry of new retailers. The existence of a premium required to acquire a retail lease for life is not attractive because there are uncertainties in the commitment of a substantial capital sum in return for rights which might disappear under new legislation. Most of the shops in Augusta Street are held under old leases at very low rents and the premium required on assignment can be more than five times the annual profitable rent.

The office market has been dominated by the owner-occupier, although the rented sector is now emerging. Due to a short supply of small suites, both price and rental of office space are rising very fast. (Building costs for commercial property currently stands at Esc. 80,000 per square metre). It should also be noted that the cost of residential construction, already in excess of Esc 100,000 per square metre, is rising fast.

The physical constraints of the old buildings in Baixa Pombalina led some companies to move to other areas where they found better and more attractive office buildings. Avenida da Liberdade was the city's premier office location; however there has been a movement towards the north, to Avenida da República, Praça de Espanha where the Bank of Portugal headquarters is to be constructed, and where the Caixa Geral de Depósitos is under construction with an area of 225,000 square metres, etc.

At present, it is estimated that as much as 80% of occupants of small office spaces in Lisbon's central area, including lawyers and other professionals, occupy residential premises which they use illegally for office purposes.

New office construction has different requirements such as air conditioning, sophisticated computerised systems, security services, provision of parking space, etc. In the Amoreiras development (with its 225,00 square metres of office retail space) two of the office blocks have been let, while the third has been sold by the floor divided into smaller units. Small units of up to 100 sq.m. are as high as Esc. 50,000 per square metre. The average office rent in the city is Esc 40,000 per square metre per annum. The average sale price for a small suite is in the region of Esc 350,000 per square metre, while prices in the Amoreiras for small suites of up to 100 square metres have now exceeded Esc 400,000. The letting price can be calculated on the basis of a yield of between 11 and 12%, which provides a convenient rule-of-thumb that the monthly rental will be 1% of the purchase price.

8.7. Conclusion

Baixa Pombalina commercial and administrative structures should be looked at from two major points of view related with the occupants of the site: the view of the resident population and; the view of the commercial and administrative use occupants. Looking at Baixa from the perspective of the residents, the area can be considered as deficient in services, social equipment and commerce. Facilities for elderly people are also lacking. This situation is the result of the continuous change in land use. Shopping for daily needs is not available to the households within the area. It is even difficult to find an open restaurant or a cafe in the evening. The existing schools are located in the Pombaline buildings and reveal a lack of basic requirements for that activity. Safety and security are important problems in the area. These can only be solved by the reintroduction of housing. Recreation areas are confined to the three squares, but they are presently not used for that purpose.

The other view relates to Baixa as a commercial and administrative area with an important role to play in the historic centre and the whole city. Commercial activity and offices are the two major uses in the area and are respectively 34% and 33% of the activities. The commercial structures live with the present functioning of the area. Personal goods, specialized goods, domestic goods and catering services are strongly implanted in the area and support the working population, transients the area and visitors. Although the commercial activity has been changing, losing the streets specificity, this demonstrates the necessity for change in commercial activity in order to meet present day necessities and fashion. Shops such as haberdashery, herbalists, shoe repairs, barber shops tend to disappear because habits have changed, others such as small supermarkets and grocery shops will have to compete with big supermarkets and shopping centres which are able to offer better prices. Additionally the office space which was previously very divided both in the type of activity and ownership tends now to be of a single type and owner.

There is in fact a necessity to determine what will be the future uses for Baixa Pombalina in order to formulate a policy for the area. The difficulty in formulating a policy for Baixa is a direct result of the involvement of competition in the private sector.

There is insufficient knowledge and information to enable planners to assess likely future investment and expenditure patterns with sufficient accuracy to ensure that the old city centre will not suffer seriously if new out-of-centre developments are encouraged. But on the other hand encouragement of investment and expenditure in the old centre can be disastrous for conservation policies. Many buildings which contribute to the social value of centres are being lost in the name of economic reality and through a lack of appreciation of the necessary qualities which make a city worth living in. The Pombaline buildings have for long time suffered change, mainly in their upper floors and interior spaces to accomodate new uses; however today these alterations are now radical and major, thus leaving only the exterior facade untouched. Planners need both a better understanding of economic change in centres and more determined attitudes to favour conservation. It is not only necessary to promote commercial activities. It is also important to obtain a proper coexistence between the different types of activities with the space in which they take place.

It is necessary to establish an urban policy for commercial activities in conjunction with other urban policies. This presupposes a deep understanding of existing commercial activities, their amplitude, composition, distribution and insertion in the country. Only then will it be possible to evaluate the development potentialities in urban spaces and establish the different measures for each of them. In order to create a solid basis for a future intervention, the city council has to establish a policy that:

1. Understands commercial activity from a wide perspective, relating it to cultural and recreational activities.
2. Secures its integration in the urban tissue.
3. Supports the restructuring of commercial space in conformity with policies towards the periphery.
4. Establishes a system of basic commercial facilities able to support the population's daily necessities.
5. Establishes areas with commercial identities.
6. Promotes the streets' commercial activity.
7. Creates the necessary access to the commercial areas.
8. Redefines and improves municipal markets.

Baixa Pombalina, due to its historic character, has to be treated as a special case with the establishment of rigorous measures. Its affirmation as a major commercial centre has to come with an improvement in the quality of the urban space, by means of the introduction of cultural and recreational activities and by the introduction of a new image and a specific market able to promote and differentiate it from the other commercial spaces in the city. This change is already starting in the Chiado area and could be extended to the whole of Baixa because, according to the tendencies in the city, this area as a commercial centre is more an optional place to shop rather than a necessity. It should not be difficult to encourage the development of more specialised shopping functions in Baixa, particularly with the growth of residential development in the centre.

There are a large number of planning issues in addition to those concerned with the distribution of population and commerce. A central issue relates to urban concentration, and changes in the nature of commerce (and industry) and the growth of traffic in the city centre. This will be discussed in the following chapter.

Chapter 9

Traffic and Movement

9.1. Introduction

This chapter on traffic and movement is part of the cognitive analysis and constitutes, a necessary stage for the rehabilitation of Baixa Pombalina. A significant feature of the debate on traffic and movement is that, until recently, it has tended to give priority to economics and efficiency issues. However among city planners and the public in general a new belief is emerging that the motor car should serve the city, and not vice versa.

Considerations regarding public and private transport, pedestrianization and parking spaces are the initial focus for the study of Lisbon's city centre: Baixa Pombalina.(Section 9.2) Like any other city centre, it is a dynamic area continuously being modified either in its form or its function by internal and external pressures. (Section 9.3) Here traffic and transportation are studied as part of the whole, as every change within the transport and circulation systems figuratively and literally reverberates throughout the whole city. Specifically, this will entail a brief discussion on transportation and planning in a context of continuous evolution in demand, technology, people's preferences and objectives. This section also includes considerations of important aspects of traffic controlling policies (Section 9.4.1) and points out recent policies on pedestrianization in Baixa.

In section 9.5 concern is given to the riverside and to the lack of attention this area has been through. Possible ways to face and minimize traffic problems in Baixa are presented in the conclusions.

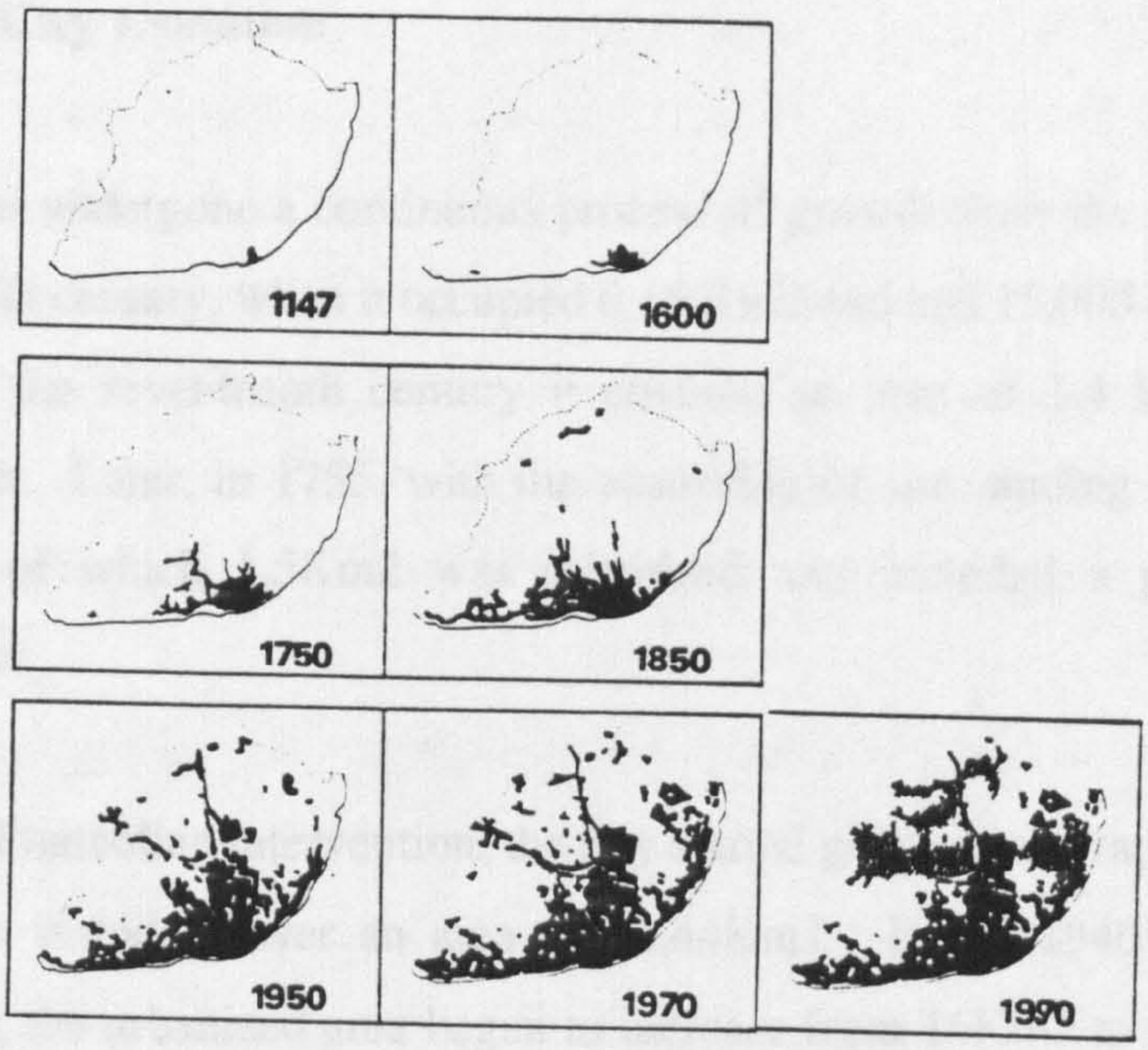


Figure 9.1 The city evolution. View of a crossing street, the past and the present situation.

9.2 The City Evolution

Lisbon has undergone a continuous process of growth since the Arab reconquest of the mid-twelfth century, when it occupied 0,15 Km2 and had 15.000 inhabitants. (see Figure 9.1) By the seventeenth century it covered an area of 1,4 Km2 and had 165.000 inhabitants. Later, in 1755, with the absorbing of surrounding city zones, it occupied 6,7Km2, of which 1,5Km2 was urbanized and included a population of 150.000 inhabitants.

After the Pombaline intervention, the city started growing at a rapid rate almost reaching the size it is today, over an area of 82,44Km2. In the 1940's due to a population explosion, the urbanized area began to increase from 16Km2 to reach 58Km2 by 1985. The expansion did not always follow the same pattern. It started by running along the Tejo River, first towards Belém in the west and later towards the east, but this time with different functions, basically industrial ones. The northern expansion began at the end of the last century, with the opening of Liberdade Avenue. In the meantime the work of creating embankments on the riverside was started, by creating a new avenue, the 24 Julho Avenue.

The opening of large axes in the north of the city (Liberdade Avenue, Fontes Pereira de Melo, Républica and Almirante Reis Avenues) gave Lisbon a new dimension. Lisbon's radial centre is reinforced by the natural topography and the Tejo River. This tendency confirms Lisbon's radial and concentric structure, developed in a territory within an angle of 145 degrees, with a lateralized urban centre: the Baixa Pombalina.

Around the same time, two big railway stations were built, Rossio and Santa Apolónia. By the beginning of the twentieth century, Lisbon had 300.000 inhabitants, and was presented with its first public transport system, the tram. From 1882 another type of public transport had been used in Lisbon: the elevator, which provided an adequate response to the city's hilly topography. Even to the present day several of these elevators are still being used, including, those at Glória, Lavra, Bica and Santa Justa. The Santa Justa elevator makes a vertical connection between Baixa and Carmo square.

Lisbon and its environs were initially formed by small autonomous aggregation of villages. Apart from Sintra, Oeiras and Cascais, these had a rural character. However, with the coming of the railway to Cascais, Sintra, Vila Franca de Xira and Barreiro, these areas became the large suburban developments of the 1950's. Consequently the decentralization of commercial, industrial and residential areas occurred, concurrently with the expansion of suburbs and the decline of the central city. Baixa started losing its residential character when it began to develop as a large commercial centre.

It is also generally accepted that environmental problems in Lisbon are a reflection of the separation of working places and dwellings. Because of this difficulty, there is no doubt that the desire to own a car is both widespread and intense. However, when people are able to run their own car the city centre, the urban environment in general becomes an undesirable place in which to live. The streets are congested and polluted; less space is available to the pedestrian as more area is required for roads and parking. The street is no longer a playground or a meeting point for the community; existing housing is disturbed or sometimes even destroyed from intense traffic; people suffer from noise, fumes, smog, dirt and possible danger.

Today Lisbon has: a deficient and badly maintained radial road and railway system; a very limited underground line which although inaugurated thirty years ago, has just one bifurcated line; and no rail connection with the other bank of the river. Eighty per cent of Lisbon's streets are either stone paved or simply covered with a thin layer of asphalt over the stone base.

The following numbers show the evolution of traffic in Lisbon during recent years. In twenty years, the number of motorized vehicles increased threefold, and the number of vehicles driving in the city increased four times. Because only 35% of the families in the area have a car, effectively 65% of the population are dependent on public transport. These figures for public transport use are the highest in europe and reflect the city's dependence upon it.

At present, the underground lines have the same pattern as the present main streets in Lisbon, in that they are mainly radial, and it is a fact of urban planning that where the

lines of communication are radial, traffic is most dense in the centre. The provision, therefore, of an orbital underground-surface line, linking the outer communities has two possible advantages: the stimulation of activity and growth in these outer areas; and also a certain amount of reduction in the use of private vehicles which at present are necessary for such an orbital journey.

The railway system crosses the city through very densely built and populated areas, and almost touches the underground system. However, there is no connection between the two although it could easily be accomplished. There is also the possibility of linking the system of suburban railways with the existing subway in the centre. For example the line coming from Beato through Olivais-Chelas, Areeiro,[1] República Avenue up to Rego and Espanha Square, could be used as an internal line with stopping points at the underground stations. Additionally, the connection between Espanha Square and Alcântara is not particularly well used. This could be possible with a very low investment if one considers that the infrastructure is already there. All that would be necessary is a project of recuperation and modernization.

The connection between the three main railway stations and the rest of the public transport system is a major problem. The Rossio Station is not even connected with the underground although that could have been done very easily when the underground was under construction. The underground system was recently expanded but even so, its area of influence is still restricted (see Figure 9.2) thus leaving large city areas dependent on buses or cars. The motorcar is still the most attractive means of transportation so that other means of movement will have to be well thought-out if they are to be seriously competitive.

The ferry stations are not connected to the railway stations. In Cais do Sodré they are not far apart but the distance between them is unpleasant and dangerous as people have to pass and cross through traffic. In Sul-Sueste Station people have to cross a heavy traffic road to reach Baixa Pombalina.

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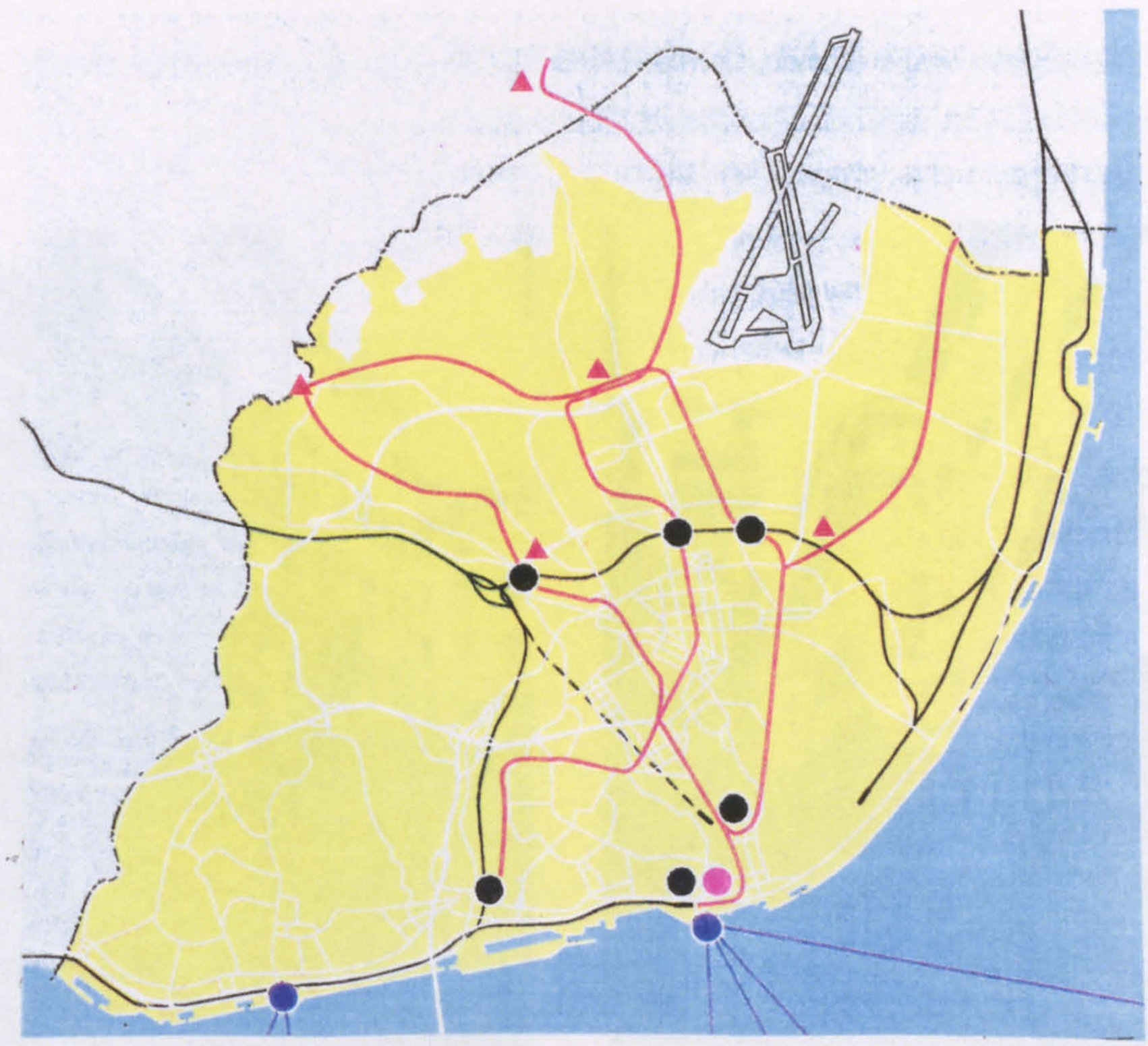
[1] The creation of a new railway station would connect easily this system with the underground.

Proposals for the construction of a railway bridge between Montijo-Beato and the creation of a ring railway on the south bank including the existing 25 Abril Bridge, would give further dynamic to L.M.R. Also the connections between the Estoril and Sintra railway lines have an unrealized potential. Nevertheless the government has never recognised an obligation to ensure a first class public transport system, nor does it recognise the fact that the material losses directly caused by bad transport are vastly more expensive than even the most liberal subsidies. This is happening in Lisbon, together with a lack of dialogue and cooperation between the different transportation offices. The departments dealing with the port, the underground, the buses and so on, are used to working in isolation.

The construction of two new ring roads, one internal and another external, connected through several radial roads has been promoted recently. (see Figure 9.2) The "CRIL" connects Moscavide with Miraflores; the 'CREL', having an almost parallel route to the CRIL, is placed at a distance from the centre. Since it links the AE-North (motorway to the north) with the future AE-Costa do Estoril, it can be considered as a regional road. This new route system will not prevent traffic from entering the city, but it will permit better alternatives to those currently available. At the same time circulation will improve with the remodelling of the main inner city roundabouts and the construction of new avenues which will then form part of the new road system. The city council believes that this route system will reduce the traffic in Marquês de Pombal axis by 9%. However, it is necessary that CRIL (Lisbon's Interior Regional Circular) be organized in such a form so as to connect the city system and the continuous urban nucleus. At the same time the underground line is being extended towards the north and inside the central area connecting Rossio with Cais do Sodré.

Parking is one of the major problems of today's city centres. The increase in the volume of traffic, together with lack of parking spaces are Lisbon main problems. The city centre's evolution towards being a commercial and administrative zone was not paralleled by the construction of parking spaces. Traffic circulation problems are enormous, and are intensified by the large amount of illegal parking, which is calculated to be around 30% during the day. In the last four years the number of vehicles in Lisbon doubled, while the number of parking spaces increased by just over 50%.



Interfaces: ● Railway-Ferry; ● Railway-underground; ● Ferry-underground; ▲ Buses-underground

—— Main roads; ring roads, CRIL, CREL; — Internal roads; T Public transports interface

Figure 9.2 The projected roads, underground, ferry, buses and railway interfaces.

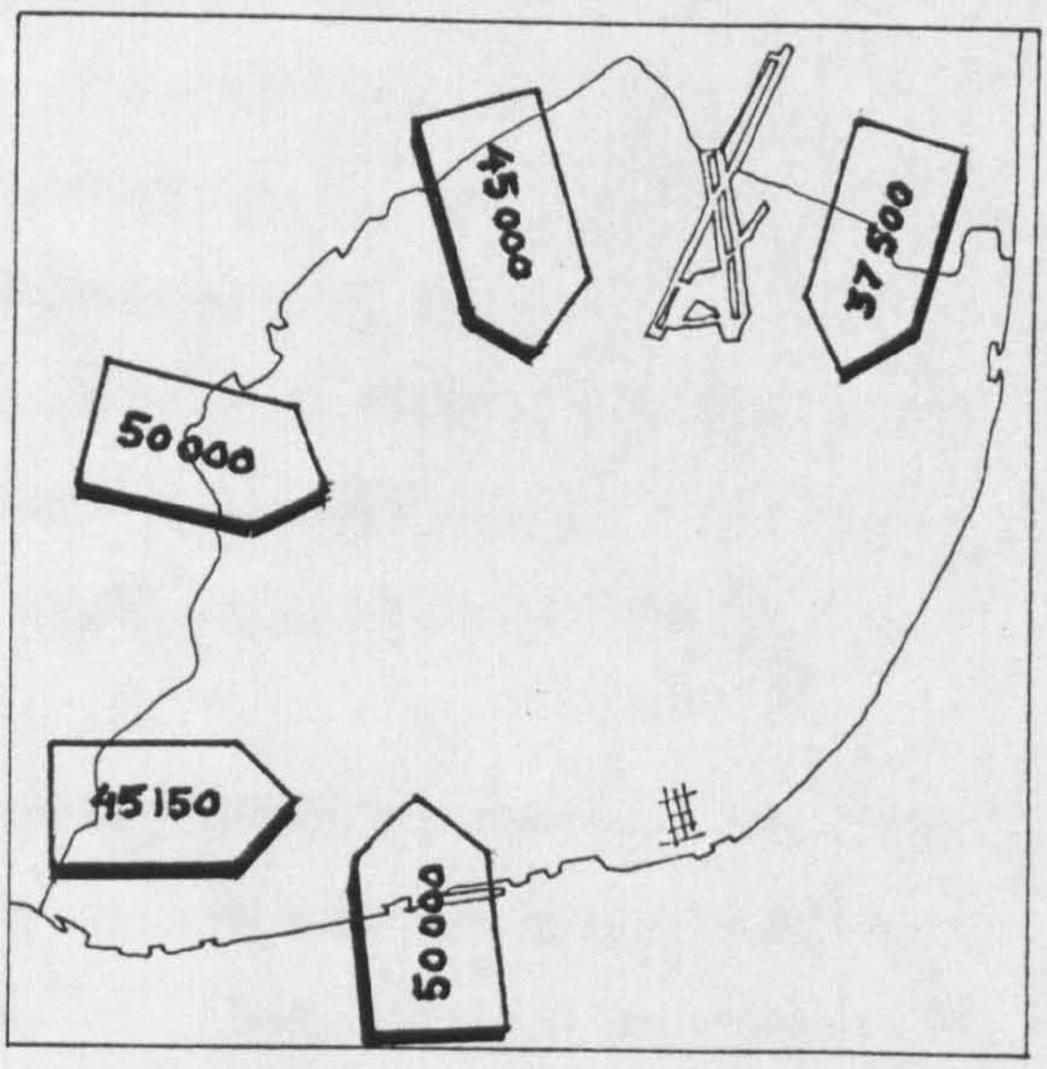


Figure 9.3 The pendulum movements

The city does not have sufficient parking spaces, neither in its central area nor in its residential area or on the periphery. While at the same time some car parks that charge are almost empty. Lisbon has two covered public parking spaces (Restauradores and Alameda Afonso Henriques). In the city centre the fee-charged parking space has a rate of utilization lower than 10% (and it would be difficult to argue that this is due to the high prices). On the other hand the city council considers the construction of parking spaces economically impracticable. However more parking space is required. The existing parking system must be revised following a detailed investigation. At present, and integrated with the policy of recent years, large parking spaces are projected for the end of the underground and at fast tram stations. This policy also involves integrated planning, the transformation of the radiocentric structure to a reticulate one; and fee-charging parking.

9.3. The Lisbon Metropolitan Region

In the L.M.R. the first expansion occurred during the 1930's and the 1940's. This expansion not only occurred along the radial axis, (Estoril - Cascais, Benfica - Amadora - Queluz - Sintra and V.Franca) but also occurred through the opening of new urban areas towards the north, which were then dependent for access on the private car, (a system of land transportation having a superior power of attraction). This affords more choice in the location of residential areas such as Loures. When in 1966 the '25 de Abril Bridge' was completed, the south bank followed a similar expansion towards Almada, Cacilhas and Costa da Caparica.

The Lisbon region and its centre is characterized by:

(i) A very high level of land coverage.

(ii) Administrative and commercial functions of a regional nature are strongly concentrated in the centre.

(iii) Tertiary activities, which are mainly concentrated in the centre, decrease towards the periphery.

(iv) The peripheral zones' have an enormous dependence on the centre, thereby giving rise at different hours of the day to peaks and troughs in the flow of traffic between the periphery and the capital.

Information on the L.M.R.'s demographic growth and change in density were previously given in Chapter 8; however it seems important to mention that such pendulum movements are supported by different means of transportation. In Lisbon's region there are 2.8 million dislocations, being 67% by public transport and 33% in private transport. Inside the city there are 1.3 million dislocations per day, 52% in private transport. Among the several transportation systems, the motor vehicle is the one preferred. Apart from the 400 thousand cars registered in the city, there are another 250 thousand daily movements. (see Figure 9.3)

Obviously, the above figures being from 1981, are out of date. However, in order to give an idea of the problem which occurs every day between L.M.R. and the capital, reference is made to the problems encountered on the two river banks, and for that the following statistics are given: in 1981 the census referred to, 52 thousand dislocations between the two banks of the river, for purposes of working or studying. From the last available data (C.P. and Transtejo, 1987) the dislocations in both directions for the two rush hours in the morning was estimated at 67 thousand, which represents an increase of 28.5% in seven years. On the other hand the rate of flow in the other direction (that is to the south bank) was 14.5 thousand dislocations, from which 65% were in private transport.

The increase in the interdependence between the two banks reveals the growth of the districts to the south together with the establishment of new economic and administrative activities in the Setubal Peninsula, that is precisely those with easier connections with Lisbon. Those districts present 33% of the demographic growth registered in L.M.R.. However if one discounts from this total growth the estimated 86 thousand new inhabitants of Lisbon, one realises that the south bank, especially, the Almada, Seixal and Barreiro districts absorb more or less 42% of the demographic growth, showing that their capacity for attracting new inhabitants is very similar to the north bank districts. It is also important to note that 55% of the active resident population in Almada district work in the same district where they live and that the employment dependence from the south districts towards the capital is less than 22%. (Almada Master Plan, 1988). That is the case of Sintra, Cascais and Loures districts in which respectively, only 44%, 57% and 52% of their active population works in Lisbon.

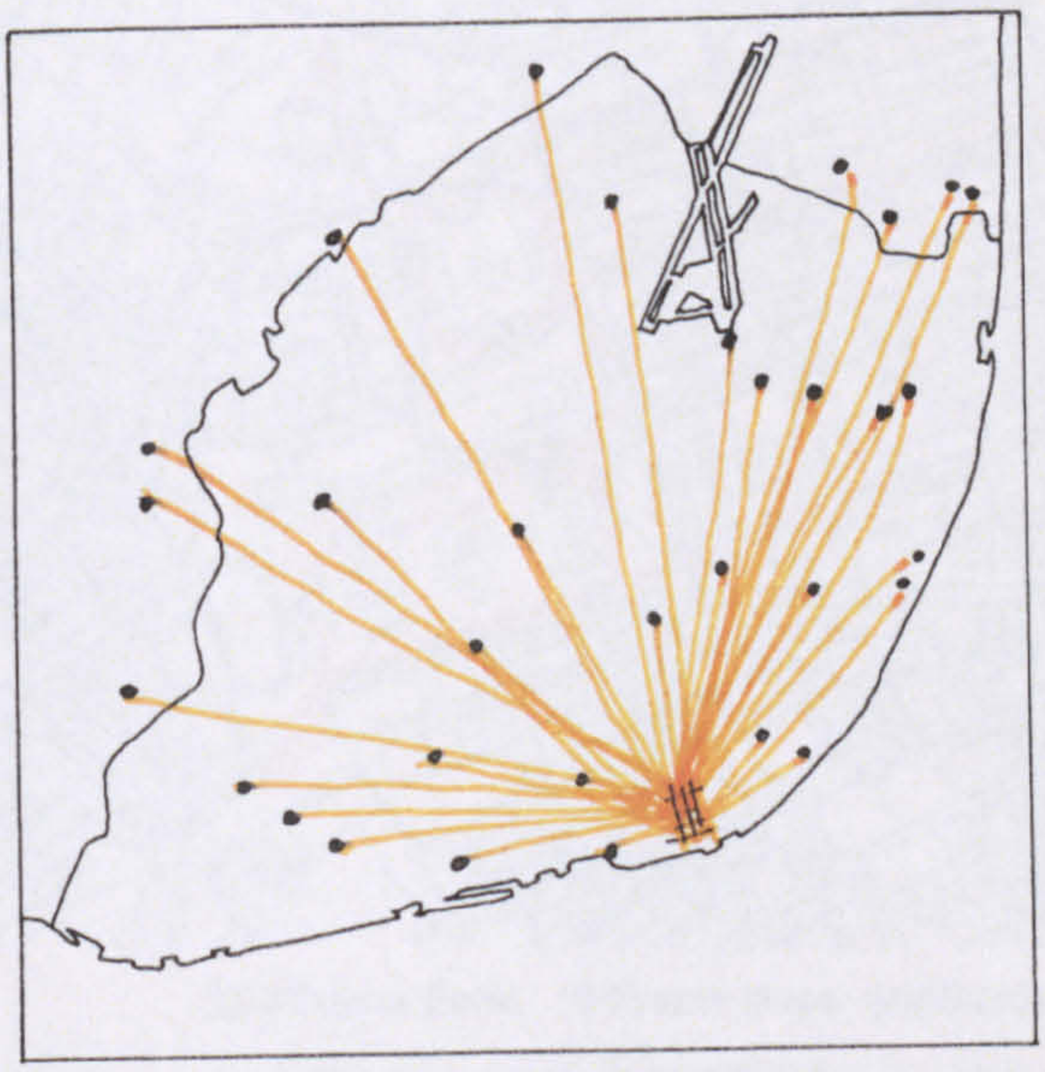
9.4. Transport and Traffic in Baixa Pombalina

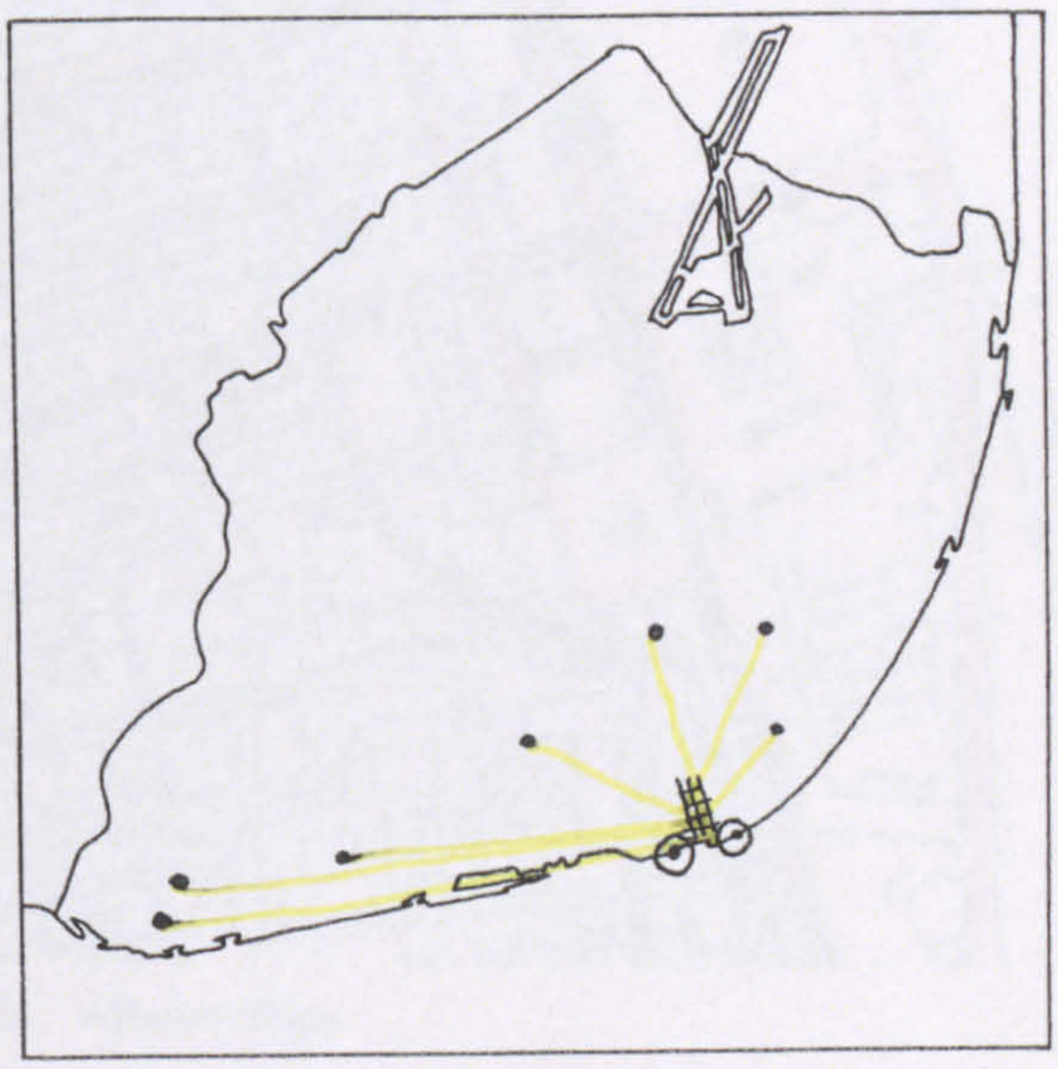
Since the beginning of the twentieth century the evolution of the transport system has helped to banish the traditional image of the Lisbon rebuilt in 1755. This evolution started in Rossio and Comércio Squares, with the demolition of pavements in order to lay down tram rails.

The Lisbon area had a large population explosion at the beginning of the 1960's, which accentuated the tertiarization of the centre. In the absence of peripheral and transverse connections, the city's radial character was reinforced, with the obvious increase of traffic difficulties in the city centre and along its radial spokes. The pendulum movements towards the centre revealed its importance very clearly. Every day there is an influx of 200,000 people into the city centre during the morning rush hour whereas the respective exodus is less than 25,000.

These movements are supported by the public transport system which during those hours carry 35% of travellers in the Lisbon area. All public transport converges in the Baixa Pombalina area. Trams, buses, underground and ferries all have terminals there, but none are connected with any of the others. The result is a massive daily movement of people through Baixa from one terminal to another. Even when the underground was built, the connection between it and the railway terminal of Rossio was forgotten. The two terminals are only 100 metres apart, but people must come out into the street to connect one terminus from the other. (see Figure 9.4)

The traffic in Baixa runs in a one way system, except at the edge of the river where it is two-way. In the secondary streets traffic is restricted to local residents and the shopping deliveries. Trams and bus terminals are mainly concentrated at the two ends of Baixa, in Rossio and Figueira Square in the north side and Comércio in the south, as seen in Figure 9.5.



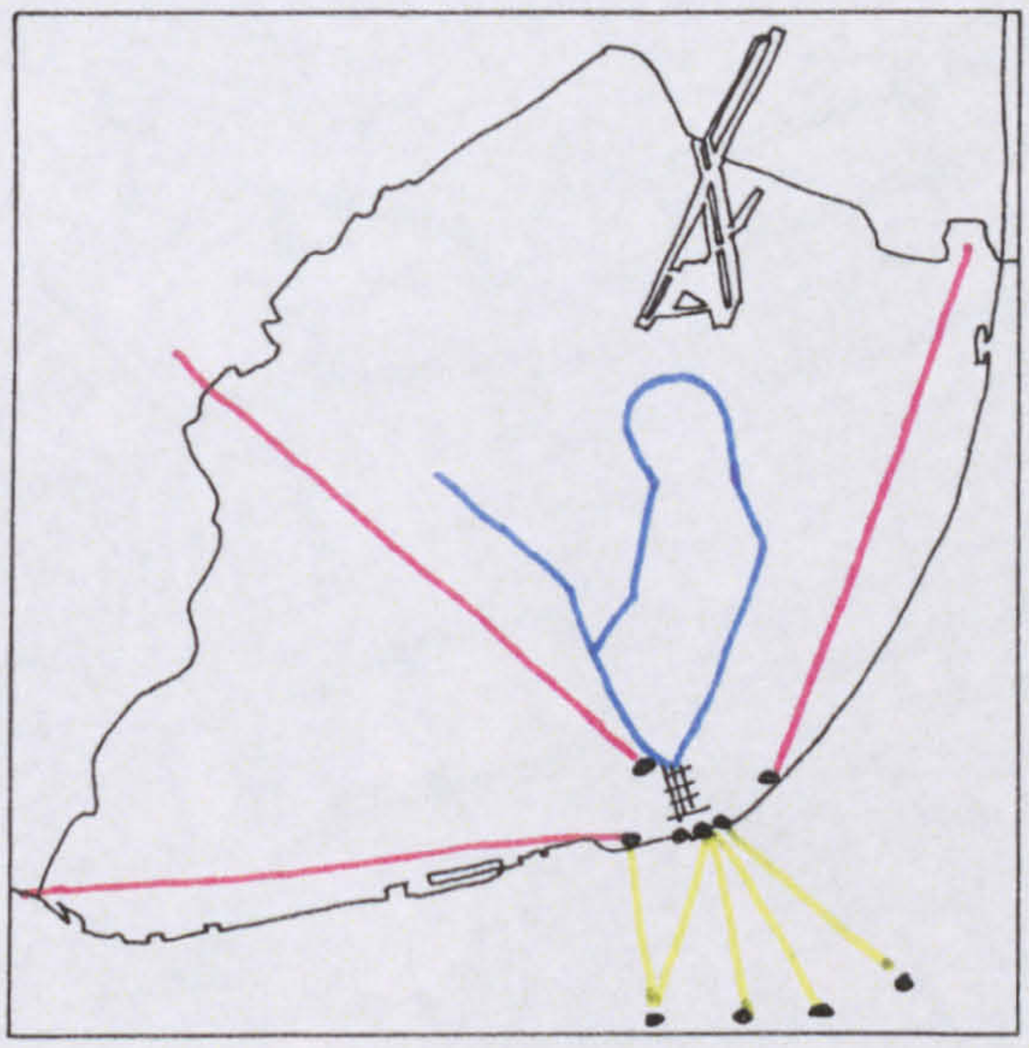


Buses crossing Baixa Pombalina

• Terminals (destination)

Trams terminals (destination)

⊙ Trams headquarters



Underground line; Ferry line; railway line.

Figure 9.4 Trams, railway and buses terminals and lines.

Figure 9.5 Baixa tram and bus systems; road system

Figure 9.6 Daily movement of buses and cars in Baixa

At the beginning of the nineteen sixties, a system of traffic lights at fifty-three points was introduced in Baixa Pombalina. Unfortunately, this system was only able to solve local problems, as its design had not encompassed a wide enough view of the problem and had not taken into account the matters of parking and pedestrian movement. This situation gave rise to a study begun in 1982, in which the needs of the pedestrian, the public transport system and the flow of traffic were considered together. Some of the numbers referred to here are drawn from this study of 1982. In Baixa one can distinguish two types of traffic: local traffic generated by the activities located in Baixa; and transient traffic created by activities located outside Baixa but using this area as a cross way.

With regard to public transport (but excluding the underground), from a total of 1.500.000 passengers per day, 54% use lines crossing the city centre. This number can be subdivided into 36,5% of passengers crossing the centre but moving to other areas, with 17,5% having the city centre, the Baixa Pombalina, as a destination.

For a movement of 262.845 passengers per day in Baixa one has:

47% in Comércio Square
25% in Rossio Square
16,5% in Figueira Square
7,8% in Fluvial Station
3,7% in Conceição Street

Along the river side there is at present an average of 35.000 vehicles per day. This represents that in Infante D.Henrique Avenue by the river there are more vehicles in 15 minutes, than in Conceição Street in 24 hours. (see Figure 9.6)

At night the city centre is left with 10.500 residents. The 75.000 daytime workers are absent so only 40% of the permitted parking space actually in use at night. The Conservation Project for the historic centre of Lisbon, prepared by the city council in 1982, includes an analysis and articulation of the components of the different systems of Baixa Pombalina. It has some glaring drawbacks, particularly in giving priority to

the fast movement of motor traffic rather than to pedestrians.

9.4.1. Traffic Control

At the end of 1969, the Lisbon city council decided to create a central administration for traffic control, and the 'Transyt' programme was adopted. This system took five years to install, encompassing 260 traffic flows controlled by computer. Baixa was the first area to have this system, but soon it was established in other zones of Lisbon. The enormous increase in traffic soon led the city council to consider changing to another system, which was eventually carried out in 1984.

Several European countries have examined different types of traffic control, so a comparative study was carried out and the 'Gertrùde' System was chosen.[2] This was originally a French system currently used in Bordeaux, Rheims and in some areas of Paris. It works with multiple information provided by the several sensors able to measure traffic flows and circulation velocity.

Since 1986 Gertrùde has controlled the traffic system and the traffic-flow from Praça do Comércio up to Picoas. This system is subdivided in two sectors, the Baixa-Marquês de Pombal (with 150 sensors) and the Avenidas Novas (with 300 sensors).[3] It was able to double the average traffic velocity from 7,8 to 15,2 Km/h. The Gertrùde System, has a dynamic characteristic, which denotes its importance as a deblocking system. It works through a central computer which decodes the received signals and is accurately able to estimate the difficulties which at any given time are affecting the traffic flow. It acts immediately on traffic lights in order to give more fluidity to the traffic, automatically choosing the most appropriate programme for any situation.[4]

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[2] 'Gertrùde', Electronic Control and Regulation of Traffic against Traffic Jams.

[3] The latter was due to begin operating in the summer of 1990.

[4] However, because this system is based on direct measurement through the sensors it can very easily be affected by unexpected actions: for example, whenever a car stops on the second lane close to the sensor, the main computer reads that as a traffic jam, and consequently distorts the traffic flow in the whole system. That is the reason why stopping is not allowed even for taxis.

The report by the working group charged with evaluating the implementation of the new system points to three advantages:

1. The area reserved for traffic circulation was reduced by 38%, yet traffic flow increased.
2. Public transport became more regular and fluid.
3. Pollution decreased by 30%.

For the last four years the city council's policy has been to double the number of vehicles keeping the same average peak velocity. The city council has made sure that total immobilization of traffic has not occurred in Lisbon since the Gertrùde system was put in practice.[5] Nevertheless it seems unlikely that the existing streets will be able to cope with all the expected essential vehicles. New roads may be required and restricted use of the existing streets at certain periods will have to be accepted.

9.4.2. Pedestrianization

Although pedestrianization started in the wrong way in Baixa with the experience of Carmo Street it is now enlarged all over the area in a successful way. This street in the Chiado area became exclusively a pedestrian street against the wishes of a greater part of the population. It was repaved and completely filled with urban furniture which did not work as it obstructed pedestrian movement. Later as a result of the fire in the Chiado area, the urban furniture was removed as it was also an obstacle for fire engine access. This is an example of the removal of traffic from a pedestrian street, carried out without previous technical research or global planning. Hopefully lessons could be learned from Carmo Street for future pedestrianization in Baixa and other places.

[5] Magalhães Pacheco, the town councillor responsible for city traffic since 1985 says that the problem of traffic immobilization can be detected once a month in Rome, three or four times per year in Paris and six times per year in Madrid. These cities all have lower traffic densities than Lisbon. (The traffic density referred to is the linear density, which means the number of vehicles per/km of road). In this respect Lisbon is in a more disadvantaged position if one considers the superficial-density. This performance results from a road system intervention concentrated on unblocking of "blind junctions".

The approved plan to rebuild the Chiado area foresees the reopening of a way connecting Crucifixo and Nova do Almada streets, and an access tunnel with a mechanical platform between the new underground station (in the corner of Garrett and Ivens streets) and Crucifixo and Carmo streets. Siza's plan creates a new pedestrian route which will connect Garrett Street and the Church of Carmo at the top of the hill, thus creating a new shopping mall. Another measure to be taken is the reopening of Carmo Street to motor traffic and consequent removal of the existing street furniture.

Nothing has been published on the wider, strategic aspects of pedestrian improvements and no central government or local authority has ever formulated a pedestrian policy based on a scientific study. This type of study has never been done in England, and certainly never in Portugal where this kind of action started only very recently.[6]

The central area is now all pedestrian as seen in Figure 9.7. However some of the more controversial points can now be examined. In order to improve the pedestrian system the study proposes closing Augusta Street to traffic. This change has already been implemented. The street has been pleasantly paved and is intended to connect the two big squares, Comércio and Rossio. The problem starts here however, because these two big squares are still, and will continue to be in the near future, spaces essentially for traffic.

The three squares in Baixa (Rossio, Comércio and Figueira) are perhaps the most beautiful in Lisbon, so it seems reasonable that they should be kept as open spaces for people's pleasure and enjoyment and not transformed into fast traffic areas. Some cross streets such as St. Justa, Assunção, Victoria, São Nicolau and Carmo are also closed to traffic, but the poor design of the street furniture and its anarchical arrangement turn those streets into places to hurry past, rather than attractive areas in which to linger. Despite these negative aspects, the new space created there was able to promote the commercial activity in these streets.

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[6] Thompson, J.M., 1974.

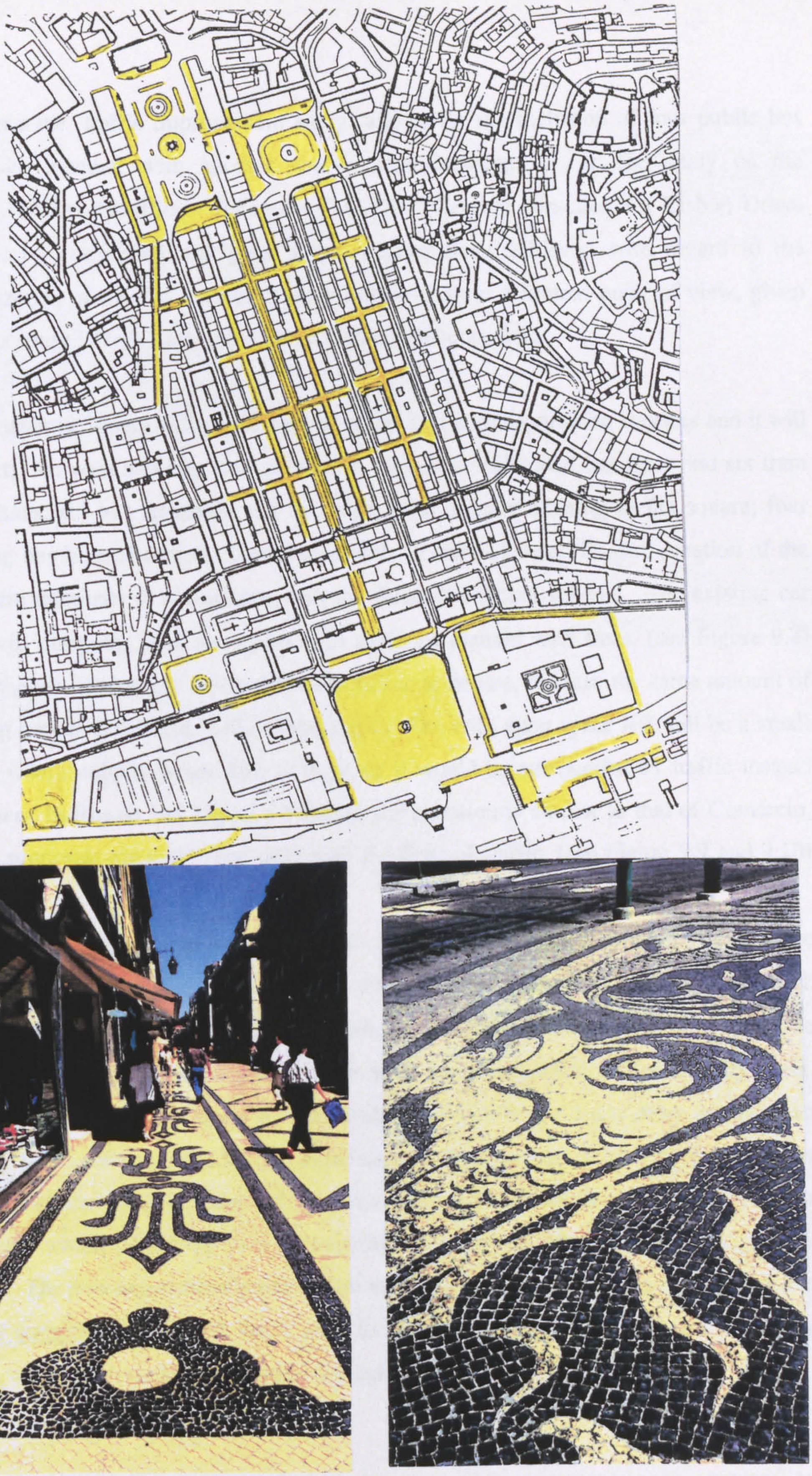


Figure 9.7 Pedestrian areas in Baixa; Pavement patterns

In Rossio the 'traffic improvement study' allows for the inclusion of four public bus terminals, together with another twelve lines crossing it. In the study on the reorganization of traffic in Baixa the D.G.T.U. (General Direction for Lisbon Urban Transports) considered that great improvements were achieved with regard to the revitalization of the city centre. This is only true from a limited point of view, given that the study is only concerned about public transportation.

The Comércio Square will be the central space for the transportation services and it will support: the west and east tram terminals; sixteen co-ordinated bus lines and six tram cross lines; six bus terminals and two tram lines already existing in the square; four existing bus lines (Rossio); co-ordinated with 12 lines crossing Rossio; creation of the C. Sodré terminals in accordance with the Baixa functional scheme. The existing car park will disappear, and the square will again be planted with trees. (see Figure 9.8) Nevertheless, the square will continue to suffer as before, because the same amount of rushing people and traffic will be crossing it. The only open space left will be a small island where nobody would like to tarry, as it would be surrounded by traffic instead of water. In Rossio and Figueira Squares, the situation is similar to that of Comércio, as the proposals are concerned only with the flow of traffic. (see Figure 9.9 and 9.10)

In Portugal pedestrianization is still conceived of as a process of traffic removal, as there is still the idea that a scheme is good when a large amount of traffic is removed. Sometimes, just by identifying or quantifying environmental characteristics, it is possible to alleviate traffic problems and achieve more pleasant conditions for the city users. The design project for a pedestrian street should consider and study more aspects than simply the furniture and features added to the street scape. It is very important to understand the former image of the area, historical associations and the sense of memory, which contribute to a community's reaction in relation to the design as a whole. The new design should pay attention to the functional aspects, to orientation and visual attractiveness. And above all a local authority must believe that a pedestrian street needs continuous and serious management, like a park or a theatre.

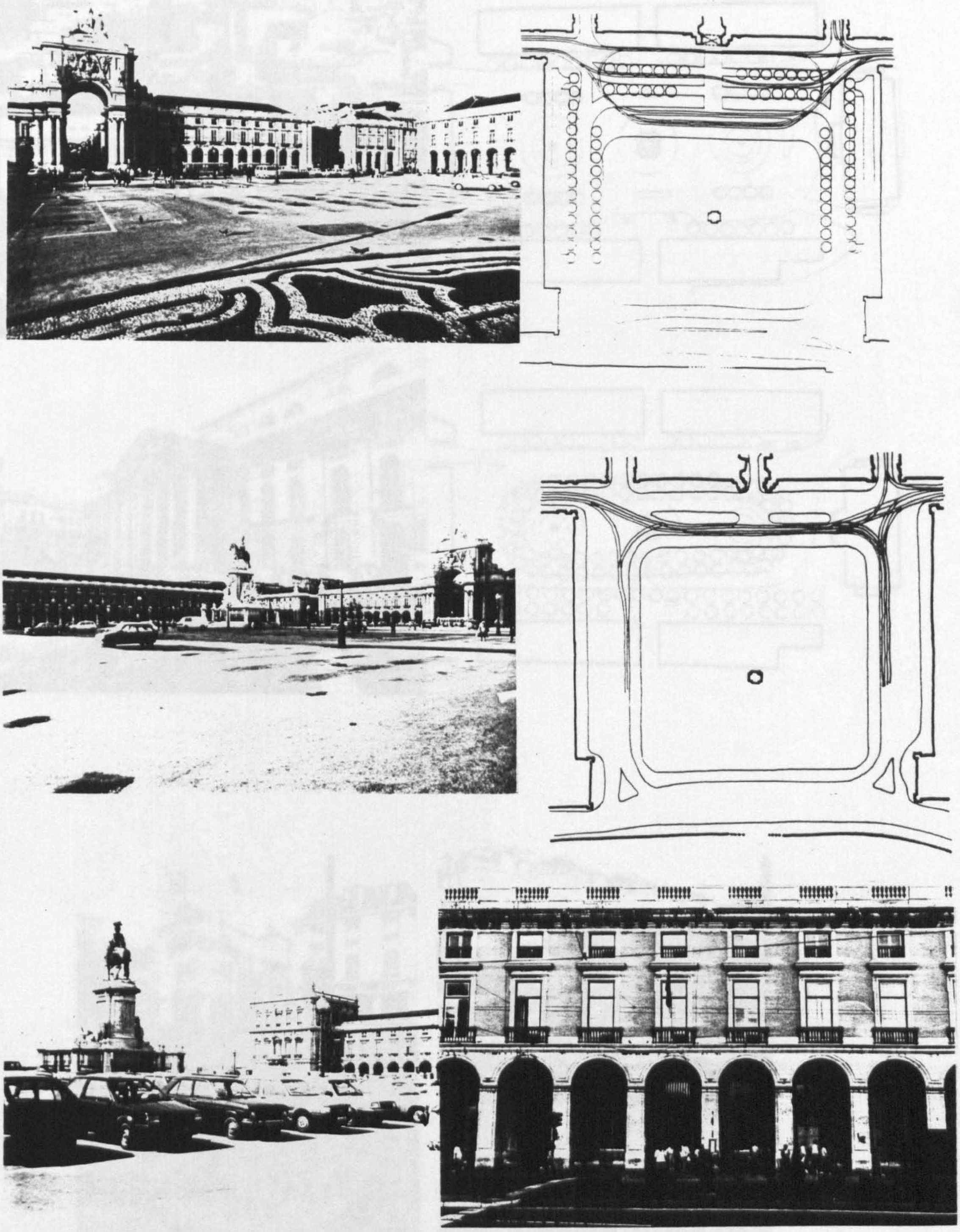


Figure 9.8 Comércio Square

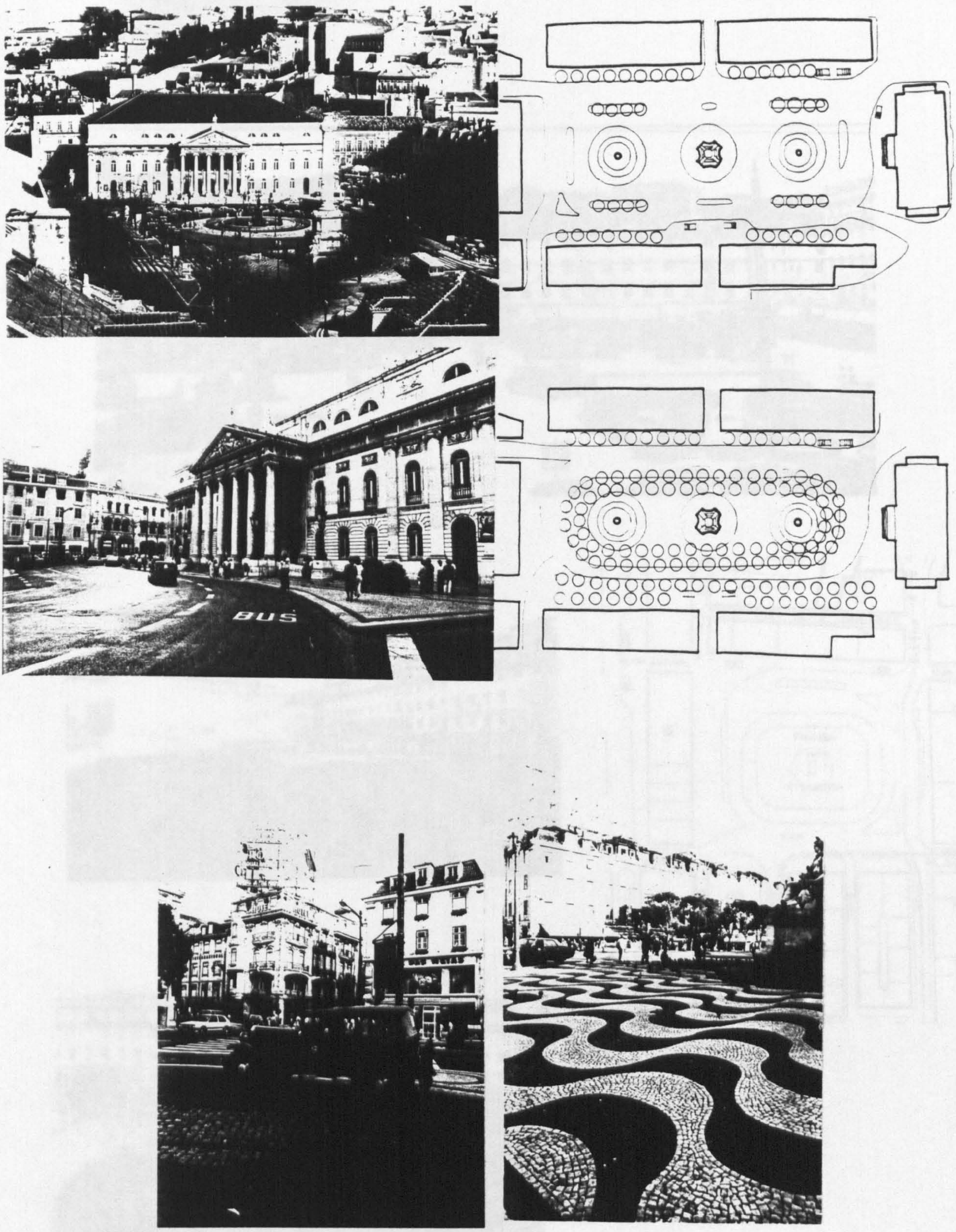
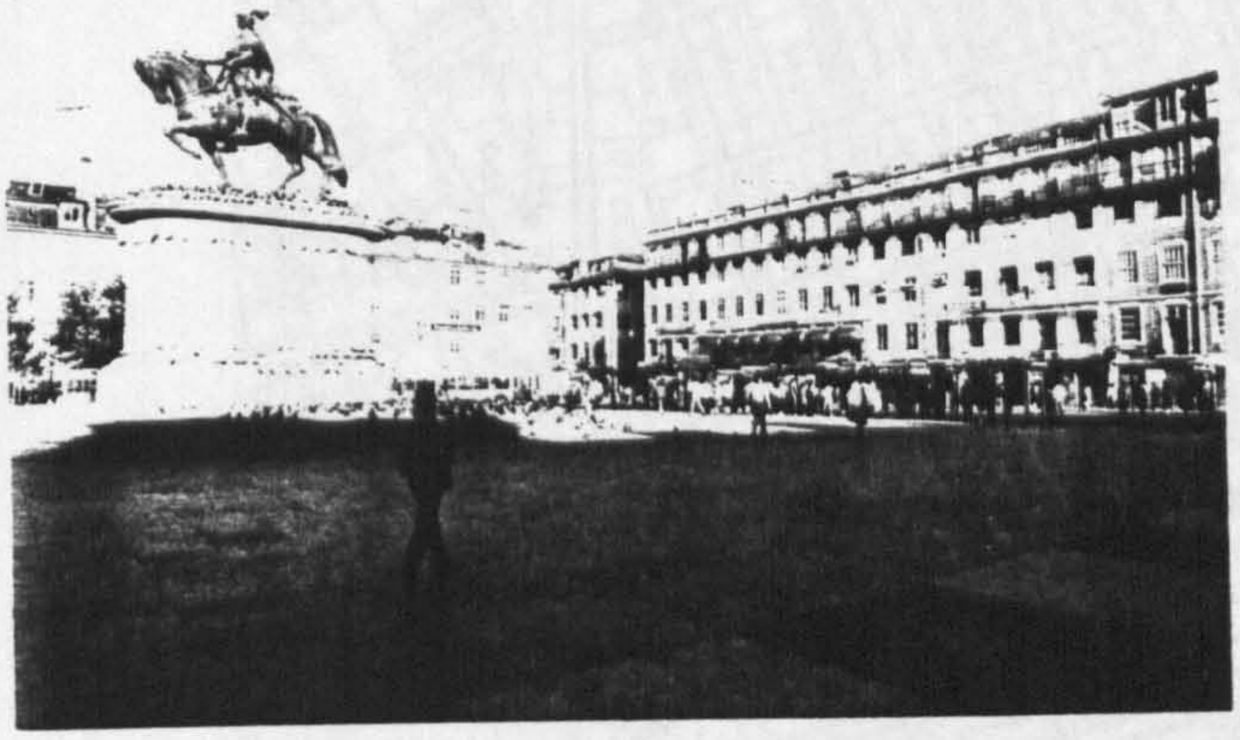
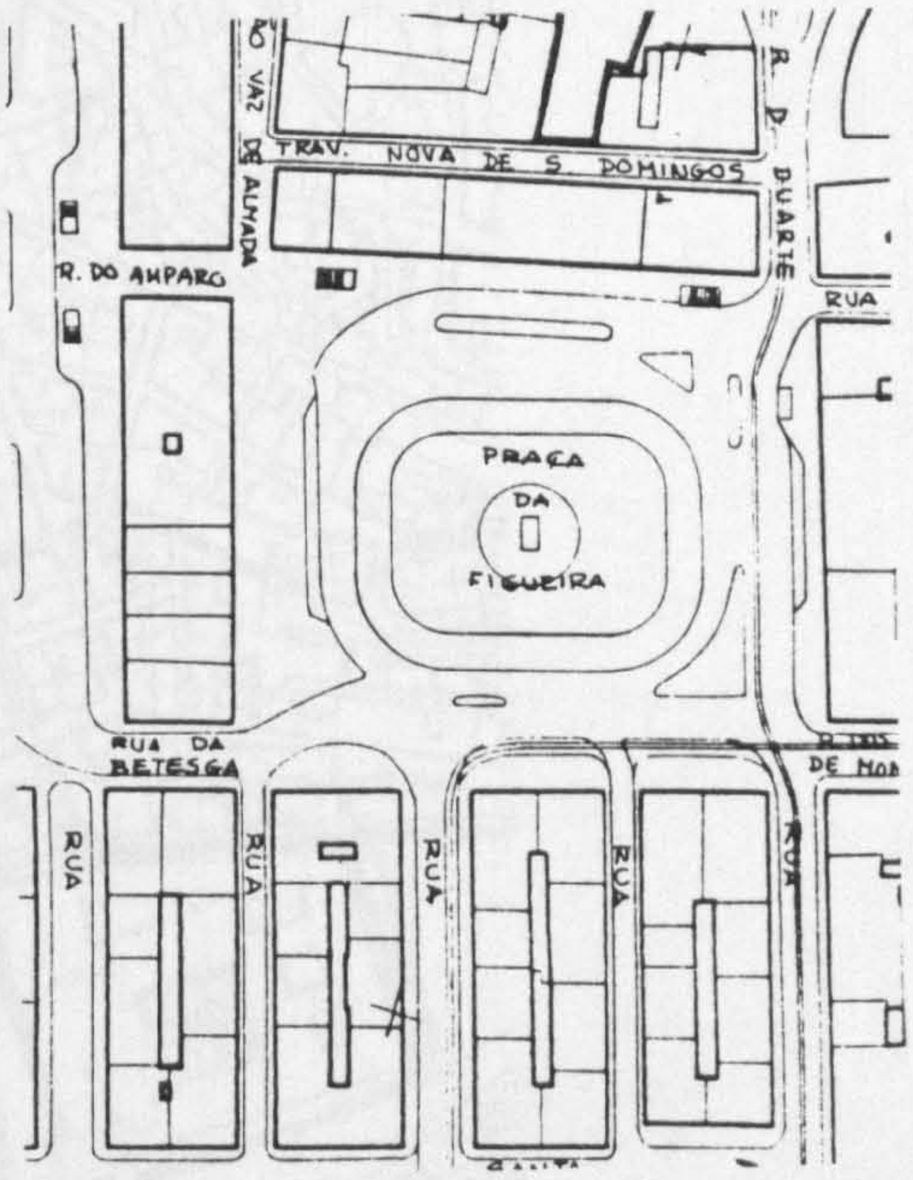


Figure 9.9 Rossio Square





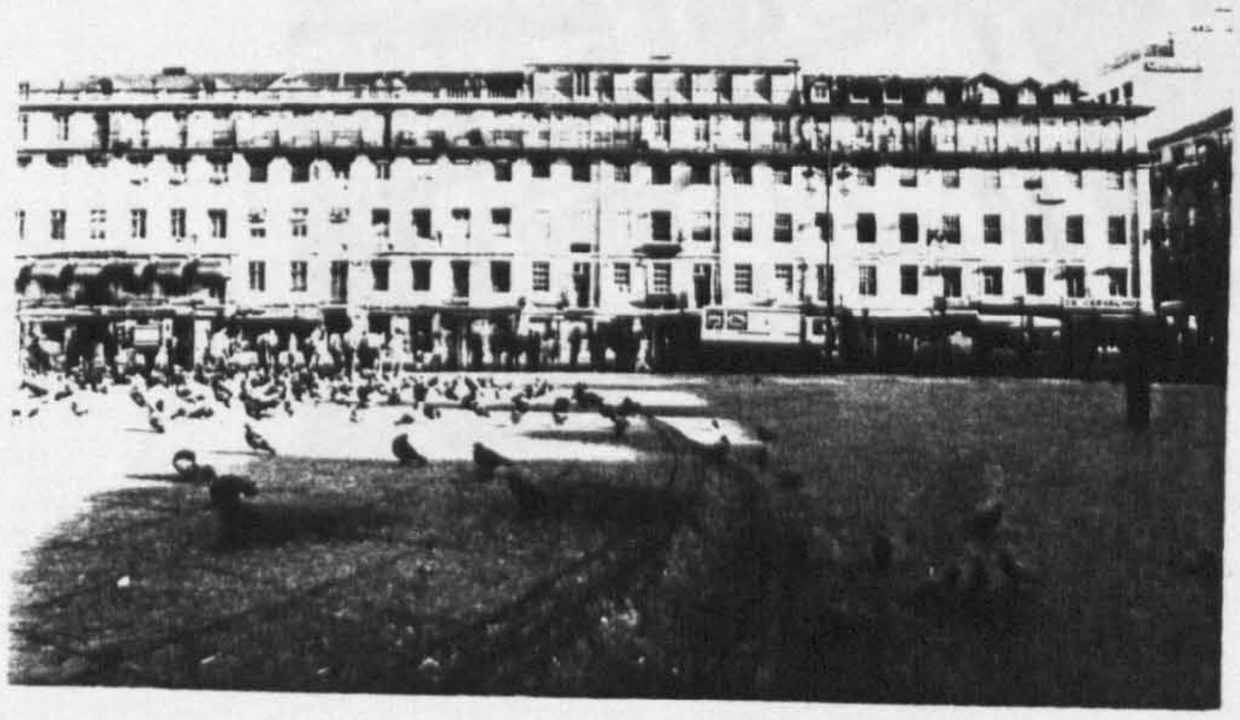


Figure 9.10 Figueira Square

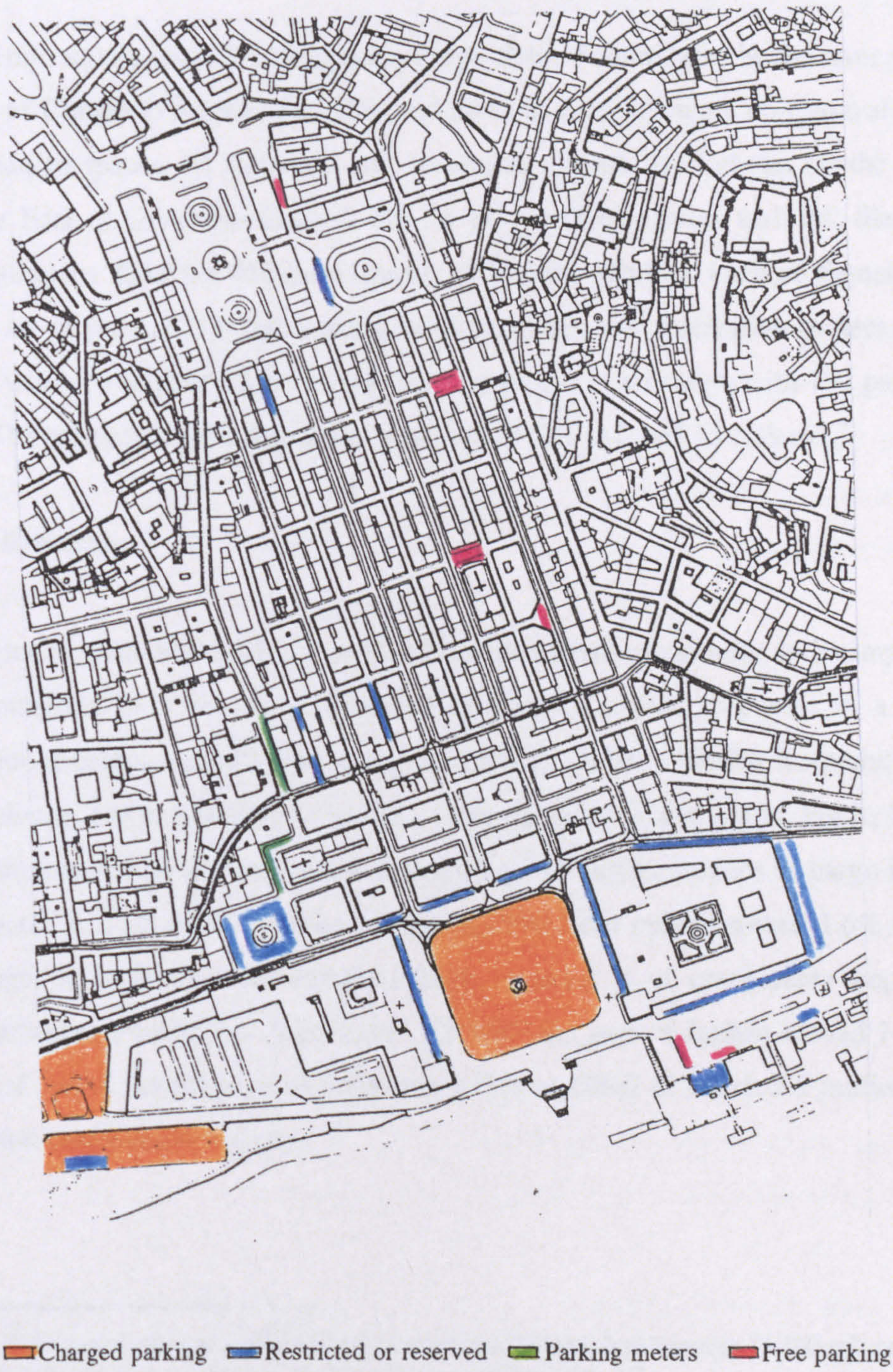


Figure 9.11 Parking space in Baixa

Parking spaces in Baixa can be subdivided in four categories: (i) paid parking; (ii) restricted or reserved parking space; (iii) parking meters; (iv) free parking space. Figure 9.11 shows this distribution in the area. There are 1900 parking spaces in Baixa. It is also estimated that a further 1500 vehicles are parked illegally on a daily basis, mainly along the streets and pavements.

Comércio square has 500 paid spaces, Corpo Santo Square (also by the river side, to the West of Comércio Square) has 160 paid parking spaces, Duque do Cadaval Largo has 32 charged spaces, 14 restricted and 18 illegal, Campo das Cebolas (at the river side, to the East of Comércio Square) has 36 paid parking spaces and 200 illegal, at the Restauradoes there are 450 paid spaces, in Martim Moniz (North of Figueira Square) there are at present 200 free spaces, however, when this renovation project is finished there will be a total of 1249 covered parking places in this area, with 754 public places and 515 restricted, with respective areas of 17 151 m2 and 13 088 m2.[7]

9.5. Riverside

In order to write about Lisbon's river front one firstly must refer to its importance as a commercial port for the Portuguese economy. Lisbon is placed in a secondary position if compared with other european capitals. It has a similar hierarchical position to Cologne, Birmingham or Marseille. Only the latter is also a port, but its importance is demonstrated by the movement through it of 83 million tonnes of cargo in 1985, as compared to 11.5 million tonnes in Lisbon. The latter only absorbed 1.6% of the total tonnage of fourteen main european ports, making it of comparable importance to Copenhagen, Piraeus and Barcelona.[8] In 1989 the port of Lisbon moved 14.4 million tone of cargo, (an increase of 5.8% in relation to 1988) of which 9.8 million tonnes is external commercial activity.

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[7] The intervention area is 42 820 m2; the roads 8 280 m2; building area 13 560 m2; pedestrian area 20 980 m2; covered paved area 76 391 m2; occupation index 1,7.

[8] Information from recent research carried out by the French Ministry of Land Ordination; in: Silva, F.N., 'Estrategia Europeia Modelo de Desenvolvimento e Sistema de Transportes para a Area Metropolitana de Lisboa', Urbe/Cadernos 1, 1990, p.23-28.

This situation is related mostly to a limited area of influence rather than to the lack of basic structures or deficient natural conditions, as the Tejo estuary is able to support double its present movement and allow the entrance of larger ships. With the present integration of Portugal in the E.E.C., as well as Lisbon's exceptional geographical conditions and access to world routes, its port is able to achieve far greater importance than at present. However to overcome competition and attain its objectives, Lisbon's port has to go through a development stage which should include not just the port activity in itself, but also consider the promotion of the city and its Metropolitan Region with cultural attributes.

Until the beginning of the nineteenth century the relationship between the sea and the city was restricted to production activities - fishing, commercial and military. During the last century the port's expansion was considerably due to industrial activities. At present the physical and social relationship between the city and the sea is limited to some docks and nautical activities. This situation occurred in Lisbon as well as in many other port cities. However, some of them felt the need to adapt and relate the city directly to the port and water front.

The A.P.L. (Administração do Porto de Lisboa is responsible for: the Tejo River, Infante D.Henrique Avenue, Comércio Square and Ribeira das Naus Avenue) has a plan for the port's promotion and has very recently supported a competition (1988), administered by the Portuguese Architects Association, for the revitalization of the river banks. Unfortunately none of the projects aim to achieve the necessary balance along the river front. The rich areas, such as Belém-Junqueira, Cascais, Algés, will be reinforced with tourism, cultural and recreational activities, while the poor neighbourhoods will not change considerably. The water airport dock at Olivais is included in several studies as a rehabilitation area, through tourism and recreative activity. This will not, however, involve great change for this area of the city.

Belém among other areas is considered to be exceptionally well equipped with a rich architectural heritage including Jerónimos Monastry, Ajuda Palace, Belém Tower, the New Technical University, etc., so the project for the new Cultural Centre in this area is merely an additional attraction. Improvements on Lisbon's river front should be

carried out not only on the west side of the city (residential and touristic) but also in its industrial eastern area. Because the railway line is a physical barrier between the city and the river, the industrial activities and the port administration left nineteen km of river front neglected for many years. However there is no reason why this policy should continue, if the desire for its promotion becomes paramount.

The Tejo River could be used for transport or as a facility for pleasure and recreation for the city. It is necessary to research the economic and social aspects in the city-port, and to ensure that there is a collaboration between the different technical departments and the port. In Lisbon it would be relatively simple to improve the ferry service. At present the ferries are used as a means of crossing the river (Lisbon to Almada, Trafaria, Barreiro, Cacilhas and Montijo), but they could also be used to connect areas of Lisbon itself, (e.g. between Praça do Comércio and Olivais-Moscavide) where a dockland already exists, also between Cais do Sodré and Belém. The ferry as a means of transport could be used by a great number of people living along the river front to reach the city centre. It is both quick, pleasant and economical.

The area between C. Sodré and P. Comércio, despite being heavily crossed by pedestrians, has not been laid out and is partly used as a car park. The importance of this rehabilitation would be relevant not only for Baixa Pombalina but for the whole city. Traffic reorganization is also necessary in Av. Infante D. Henrique where heavy traffic presently runs day and night (though illegal) and disorderly parking occurs on deteriorated pavement. If heavy traffic restrictions were applied between Alcântara and Cabo Ruivo, that would mean diverting traffic arriving from the south to the existing dual carriageway instead of using the Infante D. Henrique. Therefore it would be possible to remove heavy traffic between C. Sodré and Campo das Cebolas, allowing this area to develop its potential for leisure activities.

Campo das Cebolas was rehabilitated for the XVI European Exhibition. However at present it is a car park. The re-use of this area for pedestrians and its link with the ferry station is also important. Street traders should also be removed from this area and they should be given new places in other areas.

9.6. Conclusion

Baixa Pombalina manifests the general city problem of congestion of both roads and parking spaces. It shows that the increasing use of individual motor transport for people and goods has encouraged the suburbanisation, and even the deurbanisation of housing, jobs and services and the decline of the central city. Baixa Pombalina problems are a reflection of the split between working places and dwellings. It is also the reflection of a considerable piecemeal growth of public transport facilities, and the policies for their support. The lack of integration both in the physical sense of passenger interchange between different modes, and administratively in the coordinating the planning and operation of services, feebled the financial position of the operation and reduced from the facilities for the costumer.

From this there is no doubt that the desire to own a car is both widespread and intense and when people are able to run their own car the city centre and the urban environment in general become an undesirable place to live in. The streets are congested and polluted; less space is available to the pedestrian as more area is required for roads and parking; the street is no longer a playground or a meeting point for the community; existing housing is disturbed by the intense traffic and sometimes even destroyed; people suffer from noise, fumes, smog, dirt and danger.

However, when housing is introduced in a central area, both the average length of the journey to work and car travel tend to be reduced as a larger proportion of households work within the area and many travel to work on foot.

The idea of inducing the private car owner to use public transport is widespread and efforts in this direction are considerable. And it is a fact that for many people the possession of a car represents a major advance to a better way of life, and the impact on the environment may be counted of little cost compared with the increased freedom of movement and range of activities that a car provides. In most European countries to use a car, even allowing for the fixed costs, is still cheaper, more comfortable and quicker for travel to the city centre (despite the traffic jams) than public transport.

However, the possession of a car within the centre of an urban area does not represent a major advance to a better way of life. In many cases, the possession of a car contributes to a worsening the quality of life through a deteriorating environment. Most people agree with this view, supporting the argument that a downtown for buses is better than a downtown for cars, because the latter can never allow good conditions for pedestrians and residents. Furthermore, car owners working in the city centre will prefer collective transport if it is faster and more confortable than the car.

There is a contradiction between the needs of public and private transportation: 1- Public Transport is used most efficiently at moderately high densities and requires a policy of concentration of central functions; 2- Private Transport is used most efficiently at moderately low densities and requires a policy of dispersal of central functions.

Public transport cannot be made as attractive as would be desirable. This is a direct consequence of the many stops necessary for getting on and off, not permitting high journey speeds. Transfer and long distances to and from stops also increase journey times. On average, users of public transport facilities require 1.5 to three times the journey times needed by car users. However one aspect to consider which is a major influencing factor in the decision between public or private transport is relative door-to-door journey times. If reserved bus lanes, priority at traffic lights, etc. are provided for buses, buses can in many cases make as good time as cars. Also if the buses are given direct access to the destination without the need to spend time finding a parking space, they would be preferred to the private car.

The city centre can be a desirable place to work in but also to live and spend leisure time in. Public transport must cease to be treated as a second class service, and must be improved, so that people actively wish to use it. The aim is to extend permanently the no charge rule to all the citizens. This measure is part of global plan to rehabilitate the city by; - trying to diminish progresively the automobile circulation; 2- excludind the economic, banks and bureaucratique activities from the centre because they attract traffic; 3- using one way system of circulation and strict parking regulations.

The new conceptual approach to urban transportation planning emphasises the human values and socio-economic goals of urban development. There is general agreement that regional, town and transportation planning must be integrated in order to coordinate data from town development, land use, national planning and development. Therefore a multi-disciplinary study is always required, involving the economic, political and social aspects, and more recently the environment stage.

It is expected that movement between the two banks of the river will be improved. However, this will not occur through the present enlargement of the 25 Abril Bridge from four to five lanes. It would seem that for the river crossing, the best solution would be to use urban transport such as the underground, which will have the primordial function of extending the accessibility to the political and economic decision-making centre, as well as ensuring the urban connections with the suburban, regional, national and international railway axes. The idea of building a new bridge over the Tejo River towards its source seems essential, as it could be the key for the success of a national and international transportation system, in which a fast-railway system and the new international airport are fundamental.

For Lisbon and its M.R. some proposals can be put forward:

(i) Link between land-use policies and transportation policies;
(ii) Establishment of a city and region be coordinating authority in order to improve public transport integration and efficiency;
(iii) Implementation of public transport lanes to assure traffic flows;
(iv) Better choice and quality in public transport and as consequence discouragement of private transport to the city centre;
(v) Underground extension and modernisation of railway and intercity bus lines and their coordination with city lines;
(vi) Completion of the new circular road system which represents alternative choices for the crossing of Baixa Pombalina.

It is desirable to regain the river's historic identity by restoring the image of the city reflected on the water. The whole river front needs a strong intervention which should

move back and forth as necessary between conservation and transformation, especially for the area which goes from Cais do Sodré to Santa Apolónia stations. A proposal for this area should seek to implement a:

(i) provision of meeting and resting places.

(ii) retention of the harbour to provide visual interest and provide a platform for meetings and events.

(iii) re-definition of access routes with special arterials to provide a visually obvious way into the river front and adjacent streets.

(iv) playing spaces which could be small or large, nearer or farther from the dwellings, according to the age groups which use them.

According to requirements of each group, one should have a demarcation between what is public and private space and assess the variety of spaces needed. The three main squares need a strong intervention in order to give them back to the pedestrian and to the residents.

The following chapter constitutes the final contribution to *Part III* of the dissertation. Attention will be given to legal and financial aspects of Baixa Pombalina, aiming to understand the context in which these issues influence a conservation proposal for Baixa.

Chapter 10

Portuguese Legal, Administrative and Financing Aspects of Conservation

10.1. Introduction

The final chapter of *Part III* of this dissertation attempts to give a simplified outline of the existing Portuguese law relating to historic buildings and historic areas. It assesses its effectiveness as a safeguard for the historic heritage and discusses the changes and failures that might improve such a policy. In section 10.2, protection, listing and grading are analyzed in the context of architectural conservation. Section 10.3 is concerned with the legal and administrative aspects of urban conservation and with Baixa legal protection. This is then followed by the financing aspects of conservation, from within Portugal or from an international organisation, (Section 10.4) and by a discussion on the obstacles in the Portuguese process of conservation. (Section 10.5)

10.2. Legislation and Administration in Architectural Conservation

In Portugal, public interest in conservation dates from the nineteenth century, although the earliest law for the preservation of antiquities was actually decreed in 1721. King João V established the protection of inherited monuments, '*the memories*' authorising the '*city councils and villages of the kingdom*' to provide for their care and conservation, and mandating at the same time several sanctions. This law was later revised in 1802 with responsibility for such care given to the National Library.[1] Various key moments of public interest in conservation can be identified. In 1839 the Government established that the 'demolition of any building should be transmitted to the Fine Arts Academy' in order to allow it to prepare a survey and preserve the objects.

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[1] Jokilehto, J., 'An History of Architectural Conservation', unpublished DPhil thesis, I.o.A.A.S., University of York, volume I, Sept. 1986, p. 398.

In 1836 Mouzinho de Albuquerque commanded the Academy of Science to prepare a list of existing convents with a view to their classification as National Monuments. In 1864 the Architects and Archaeologists Association was created and in 1880 it was charged to programme a Classification of National Monuments; however, that was never done.

The National Monuments Commission was formed in 1890 with the specific aim of making an inventory and to administrate legislation over the properties. That is the time when ideas about conservation and restoration began to appear in Portugal. Later, in 1898, the Superior Commission for the National Monuments was created, becoming responsible for the approval and execution of conservation projects.[2] In 1928 the General Directorate of National Monuments and Building was established.[3]

The 26 July 1912 Law, art 2, n.9 allowed for governmental expropriation of Historic Monuments or National Antiquities whose owners were not taking care of their conservation. In 1932, another law, determined the Country's List of Archaeological and Artistic Heritage, differentiating between National Monuments and Immoveables of Public Interest.[4] Both could have special protection areas, but the former always had a legal protection of 50m around its perimeter where any construction would require a permit, which the State could have a preference in the selling of public or private land or buildings. This classification could also incorporate '*architectural groups*' in the sense of '*groups of monuments*' rather than of urban areas or places to be globally protected. More recent legislation (law n.613/1976) enlarged this concept, attributing to the Secretary of State for the Environment the power to decide and establish a precise classification of sites, urban or natural groups. Previously listed works were also included and subject to this legislation.

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[2] This was the year for the works in Leiria Castle, Coimbra and Lisbon Cathedrals.

[3] Many works of conservation were done under this Direction, specially in medieval constructions, always with the idea of reestablishing the first style. Batalha Monastery was restored and consolidated; Carmo Monastery in Lisbon was left as a ruin. This was also the era of the first archaeological digs at the Roman Ruins in Conimbriga.

[4] Decreto Lei nº20985, 7 de Março.

In 1985 another law, moved in accordance with common European ideas, was passed by the Portuguese state.[5] The 'IPPAR' The Portuguese Institute for the Architectural Heritage (formerly The Portuguese Institute for the Cultural Heritage, IPPC) is the organization charged with these matters; however Madeira and the Azores Islands, as well as the Municipal Assemblies, can list or remove from the list the immoveables if they possess cultural, regional or municipal values whenever they do not claim or deserve the classification as a National Monument. This law establishes as a principle the compulsory integration of the protection, conservation and revitalisation of cultural heritage values in town and country planning at local, regional and national levels. It also establishes the procedure of surveying, registration and listing.

The listing of an immoveable object will necessarily determine its plan for safeguarding, (Art.19 and 20). Every 'Regulating Land Plan' (specially the planning ones) should treat in a special way the listed buildings, and when necessary propose measures for their treatment (art. 21). This happens very rarely; a special protection area (ZEP) is established, which can exceed the previous limit of 50 metres starting from its exterior limits (art.22) if it is proposed by a professional (in any conservation work).[6]

Remodelling works in these special areas can only be approved with previous agreement from the IPPAR. The owners of buildings located in these areas have the right to ask the state for its purchasing. The law 13/85 includes funding at central, regional and local administration levels for actions of promotion and defence; the development of a taxation system to benefit conservation; and the possibility of public protest against any injurious act towards the heritage.

In Portugal protection under law includes:

(i) 'National Monuments', immoveable property that because of their important artistic, historical or archaeological value represent a national interest from the point of

[5] Lei nº13/85, 6 de Julho.

[6] The Dec.Law 285/88 establishes that an architect should be responsible for any work in these "special protection areas" (ZEP) on listed buildings including those in the 50m of the surrounding area, (art.23 - dec.law 13/85).

view of their protection and conservation.[7]

(ii) 'Property of Public Interest', other immoveable property which does not deserve to be classed as a national monument but nevertheless represents considerable public interest in artistic, historical or tourist terms.[8]

(iii) 'Local value', immoveable property recognised to be of public interest by the competent local authority but not by the central government.[9]

(iv) 'Protected Sites and Objects', natural or man-made sites or objects that deserve protection because of their cultural, scientific, technical, ecological or other value.[10].

The Supreme Council of Fine Arts submits its opinion about the above properties or sites to the Ministry of Education and Ministry of Culture which has a consultative body, 'The Portuguese Institute of Cultural Property' to which all demands and proposals related to listed buildings or protected areas must be submitted. At the local level there are the 'Municipal Commissions of Art and Archaeology' which also give advisory opinions to local planning authorities on properties which fall within their local jurisdiction. However, although an increasingly elaborate planning legislation was developed by the Salazar-Caetano governments between 1928-74, (when the new democratic regime was established in Portugal), in practice planning and most public services were highly centralised in the Lisbon Ministries. Most Local Authorities had only minimal technical planning services. Therefore plan implementation and even plan-making remained very limited.

The ownership of a 'public monument' belonging to the State is not transferable. Property (land and building) belonging to the State, public entities or individuals, and having a distance of less than 50 meters from an immovable property classified as a national monument, cannot be transferred without the permission of the Ministry. Equally, in order to obtain a construction permit in this area or a permit to modify

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[7] Decreto nº20985, artigo nº24.

[8] Decreto nº20985, artigo nº30.

[9] Lei nº2032, Secção I.

[10] Decreto Lei nº613/76, Artigo nº2.

existing construction, the same permission is necessary.

The Portuguese government has power to purchase all construction which make proper conservation of a 'National Monument' difficult, or which may underestimate or damage its characteristic features. However this power is only mentioned to achieve protection of a 'National Monument'[11]. Another law provides special powers of expropriation for the Lisbon and Oporto slums.[12] Under this law, if agreement can not be reached with the owners, they can be compelled to sell to the government at prices fixed by the court.

10.3. Legislation and Administration in Urban Conservation

During the eighties, plans for the conservation of historic centres started to feature in the thinking of urban planners along with the autonomy of local power. Safeguarding Plans were sometimes established, showing the structure of 'Detailed Integrated Plans' or 'Sectorial Study Plans' all integrated in the 'Urban General Plans' (PGU). Several regulative measures (sometimes integrating the safeguarding plans, sometimes not) related to building construction, demolition or alteration were produced for many cities and important historic areas during that period. The rehabilitation actions usually coincide with the 'detailed plan' which are integrated in the urban general plan, (or sectorial) and those in the 'Municipal Master Plans'.[13]

The 'Urban General Plans' (PGU) should indicate and establish boundaries of areas of *'historic or artistic interest'* in urban or natural areas which ought to be safeguarded, rehabilitated, renovated or be part of a detailed plan in the future. The 'Municipal Master Plan' (PGU)[14] includes 'Areas of Protection to the Historic, Cultural and Artistic Heritage', which should be specified in order to support and guide subsequent specific studies. There was another change in 1990 when it was specified that Town

[11] Decreto Lei nº 20985, Artigo nº24, 7 de Março, 1932.

[12] Decreto Lei, nº273-C/75.

[13] Decreto Lei nº69/90, 2 de Março, restructured the legislation concerning land occupation plans controlled by the city councils.

[14] Decreto Lei nº 208/82.

and Country Planning Plans should integrate the Master Plans, Urban Plans and Detailed Plans[15]. This legislation also considers that the 'Plans for valorization and safeguarding' should have a specific regulation for the protection of listed groups or isolated buildings, however this has not yet been implemented.

The work of the various societies in Portugal has no similarity to the situations in Britain. However, there is a Centro Nacional de Cultura (National Centre for Culture), the Grupo Amigos de Lisboa (Friends of Lisbon), the Associação de Proprietários e Casas Antigas (Association of Historic House Owners). These are the best known, but their work is very limited and only at the level of promoting guided visits and lectures for their own members. Such groups should be encouraged by the Government to move from their passive attitude towards the protection of the architectural heritage to an active role. They should maintain a relationship with Local Authorities and the local press, and be able to involve their members in active participation by devolution of power and functions.[16] They should also be able to stimulate the public through seminars, debates and professional discussions, and to attract younger people.

10.3.1. Forms of tenure

Most Portuguese property is held in outright ownership, either by freehold or by way of a condominium holding. Rented property, whether retail, office, industrial or residential, is subject to security of tenure which prevents any increase in rents, other than by partial indexing to the rate of inflation. The annual rate of increase is normally equivalent to approximately 80% of the actual inflation rate. A lease is generally open ended, that is, granted effectively for an indefinite period with no right of termination on the part of the landlord unless the tenant is in clear default. Even if the landlord requires the premises for his own occupation, this is not sufficient grounds for possession.

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[15] Decreto Lei nº69/90, 2 de Março.

[16] UNESCO, Protection and Cultural Animation of Monuments, Sites and Historic Towns in Europe, vol. 12, German Commission for Unesco, 1980, p.351-360.

Maintenance, repair and local taxes are the responsibility of the landlord and most of the indexing is on a base rent fixed from thirty years ago. Today there is some relief for the landlord because the rate of index is higher for tenancies prior to 1984; however the difference is only a few percent. There is now a possibility that leases may be renewed every five years.

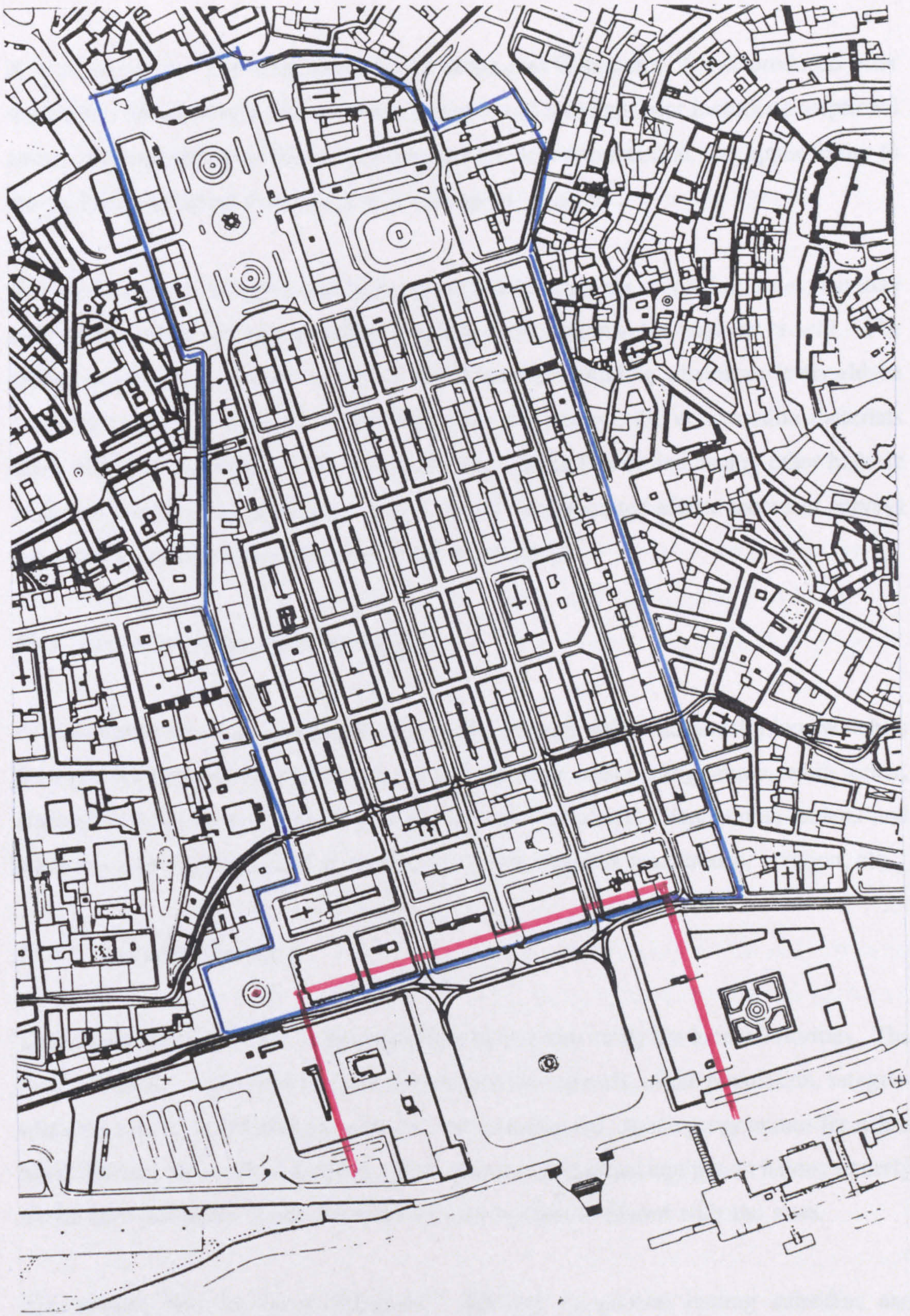
Residential tenants are not permitted to assign their tenancies, but commercial tenants may do so, provided it is to another in a similar trade. Many rents are as low as Esc. 1,500 a week, therefore very high premiums are demanded and subsequently paid.

The situation has been roundly criticised on both sides, and the Ministry of Finance has announced a government review of the whole rental system. However, it does not seem to have been given high priority, otherwise some signs of change would already have been seen. Additionally, the development of property is constrained by long-standing inheritance regulations, whereby a deceased person's estate, including property, is split between a multitude of beneficiaries.

10.3.2. Baixa Pombalina's legal protection

Baixa Pombalina is classified as '*Property of Public Interest*' and includes two '*National Monuments*', Comércio Square and a decorative column in Município Square. Figure 10.1 shows the limits of this protection area and its area of influence. It also identifies other important architectural elements which although without any protection are of value to the area and to the city. In 'Lisbon's Heritage Charter' other important buildings and spaces such as Figueira and Rossio squares are already integrated.

Baixa is at present surrounded by several safeguarding plans; Mouraria, Castelo, Alfama, Bairro Alto and by the Chiado reconstruction (area of priority intervention), however only last year the City Council directed its attention to this central area. Lisbon's faculty of Architecture was commended on an architectural survey of uses for Baixa.



National Monuments; Property of Public Interest.

Figure 10.1 Baixa Pombalina protection area

A revision of the 'Fire Regulation for Housing and Commerce'[17] was produced after the Chiado fire; however this was not adapted to old buildings, nor includes exceptional cases. This regulation is effectively directed for new construction. Its applicability to the buildings of Baixa Pombalina will change its character.

It is true that the Pombaline buildings do not accord with the new safety rules, but they also do not attain the new standard building construction rules, and never will. The timber construction system is part of the Pombaline building, therefore it should be preserved whenever possible. The stair-cases are narrow, the construction materials show very low standards of fire resistance, etc. Baixa Pombalina as any other historic area, needs a specific regulations (which should be elaborated after a technical survey) produced by technicians and conservation consultants.

10.4. Financing Urban Conservation

Urban conservation has been financed mostly through public administration, which is far from having the necessary capacity to undertake such a programme, while other, alternative ways have not been studied, such as community foundations, tenants and landlords participation, local economic enterprise, tourism foundations, taxation, etc..

10.4.1. Internal Financing

Urban rehabilitation can be supported either by the state or by the local authorities. The local authorities' attributions are undertaken for the interests, of the population, safeguarding the quality of life and protection of the environment. In the programmes for urban rehabilitation, the areas concerning infra-structures and urban equipment belong entirely to the local authority, while the housing construction is shared with the state.

The present law for Local Finances,[18] although in general cutting subsidies and governmental contribution to local authorities, provides for the recovery of degraded

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[17] Dec. Lei nº64/90, de 21 Fevereiro.

[18] Lei nº1/87, 6 de Janeiro.

areas or urban renovation, whenever those operations exceed the local authorities' capacities. From 1992 onwards this support will be provided only to those local authorities where actions of rehabilitation are integrated in the Local Master Plans. It is estimated that the state budget for rehabilitation programmes will not exceed 30% of the total cost.

There are several financing actions integrated in the PIDDAC, which consists in supporting the work developed by the G.T.L. and the 'Urban Rehabilitation Programme' established in 1985. In the first part of this programme technical and financial help has been given to the local authorities, either by consultancy or by paying for technical assistance. Also based in these local offices, a programme has been put in practice called PRAUD, which will be explained later. Both PIDDAC and PRAUD support investment projects especially for the renovation of historic areas and monument protection areas. Apart from these programmes systems of credit have been promoted such as the PRID and more recently the RECRIA.

In 1976 the F.F.H. (now no longer in existence) was allowed to promote a special programme of grants and loans to finance restoration, conservation and improvements to the heritage, whether public or private, urban or rural.[19] It was named 'PRID' (Programme for Rehabilitation of Decayed Buildings) and its aim was that private owners or local authorities could receive financial and technical advice and assistance from the State under this legislation and could also apply for a low interest bank loan and credit facilities.

'PRID', was started in December 1983, but the results by 1986 were not satisfying as only 48.9% of the total budget was used. Neither landlords nor tenants availed themselves of the available credit (1 500 000 contos) which was almost only used by the local authorities. Therefore the built heritage continued to deteriorate. The contracts for technical assistance would provide for the creation of 'GTL's' (Technical Local Offices) with technicians able to produce and follow the projects on the building site, supervise and execute the works, finance the administration and support the social

[19] Decreto Lei nº704/76, 30 de Setembro.

welfare of the inhabitants.

The 'DGPU', (Urban Planning General Directorate) was supposed to support each GTL, which should work under the supervision of the City Council. In 1986 the DGPU was closed down and replaced by the 'DGOT' (Country Ordination General Directorate) which accumulates the later functions with the 'ERUO' (Regional Equipment and Urban Ordination).

The Government later deblocked the housing rents[20] which allowed an annual rents review and led to the revision of schemes for the recovery of deteriorating rented buildings. Through this law a new system was initiated which is the 'RECRIA', (Special Comparticipation Regime for the Recuperation of Rented Property)[21]; this aims to promote conservation and rehabilitation works, supported by the State or the Municipalities. This system is open to any landlord or tenant whose rent followed the review predicted in the Law n.46/85, article 46, (rents law). Its comparticipation regime can achieve 65% of the total costs of construction works.

'PRAUD' (Programme for the Recuperation of Urban Degraded Areas) is a programme which will aid the Municipalities in the preparation of studies for the rehabilitation and renovation of urban areas. It was created by the Secretary of State for the Country Ordination and Local Administration[22] which is administrated by the General Direction for the Land Ordination (DGOT) in collaboration with the Regional Coordination Commissions.

This programme consists of a fund which will not exceed 20% of the predicted expense. The establishment of GTLs (working in close relation with the Municipalities) is also foreseen, and can reach 75% of the amount spent on their employees' salaries. It involves about thirty municipalities and the estimated investment is around eight million

[20] Decreto Lei nº 68/86, 27 de Março, following Lei nº46/85, 20 de Setembro.

[21] In 1988 the state gave five hundred thousand escudos, (three million ECUs) to this system.

[22] Despacho 1/88, 6 Janeiro.

contos, split into 23% for infrastructures, 47% for housing, 23% for community services and 7% for the preparatory work. As the grants in aid were not enough, (maximum 20%) the local authorities use the banks' credit. C.G.D. and the FRCE-Fonds de Reétablissement du Conseil de L'Europe to Portugal are two of the main ways of financing.

However the buildings in Lisbon and Oporto continue to deteriorate, especially in the winter months. It seems impossible to find a long term solution to this problem unless the renting sector becomes financially stronger. Most of the buildings in Lisbon's city centre are rented, and in many cases the rents have not been increased since the forties. Therefore the owners do not provide the essential maintenance. Also, whenever a building collapses or suffers a fire, the landlord's responsibilities towards the tenant ends. Therefore, many landlords allow the buildings to deteriorate in order to recover the land, either to rebuild or to rent at very high rents.

Despite the recent reforms in this system, in many cases, as the initial rents were very low, the increased taxation will not change the situation. Conversely, the small increase can represent a problem for many tenants because they are already faced with economic difficulties. The solution for this problem should be based on a system which could help those with lower incomes in order to reach a real rent increase without creating unfair situations for the tenants.

It would be helpful to establish agreements to guarantee that the landlords would not simply wait for the local authorities' financial help. Public and private financing ought to find a better way of working together. Both the Portuguese Government and the City Council have budget problems. Lisbon must first solve primary problems, such as the provision of low rent housing and basic social services.

Some City Councils including Lisbon and Oporto have their own ways of financing, that were implemented respectively for the Bairro Alto, Alfama, Mouraria, Belém, and Ribeira Barredo. Such financial help is predicted in the City Councils' annual budget.

Two decrees from 1983[23] establish the possibility of grants to buy, rehabilitate or sell inhabited housing. The city council would have favourable credit conditions. However this law is not practicable because of the present restrictive policies, and as the ceiling grants are very low, the money tends to be used for new building promotion.

A Programme for Cultural Heritage Conservation, promoted by the Institute of Employment and Professional Formation, allows the financing of programmes for the establishment of small businesses which would support the rehabilitation and conservation of the architectural heritage, employing craftsmen including stonemasons, plasterers, etc.

The 'Mecenato Law' establishes that any donation from a business to a cultural project can be deducted from the former's taxes. This means that historic centres are areas where this law can be largely applied.

10.4.2. External Financing

Specialized International Institutions are aware of the necessity of improving conditions of life as well as historical, cultural and environmental preservation. The Council of Europe refers to its short term plan (1987/91) for urban policies, architectural heritage, the natural environment and resources, promoting urban development, the conservation and integration of architectural heritage and the promotion of financial help. Technical cooperation and assistance is another aspect promoted by the European Council,[24] together with the involvement of international foundations.

The EEC have also been financing Integrated Programmes for the Urban Spaces Renovation. Its Regional Development Policy is shaped through several instruments, some at financial level. Among those the FEDER[25] is the most important; however

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[23] Decreto Lei 220/83 and Decreto Lei 459/83, 30 Dezembro.

[24] The city of Guimarães has already received this kind of help.

[25] EEC Regulations, 1787/84, 19 June 1984. FEDER has been used in Ireland and U.K. for the financing of infra-structure projects related with touristic promotion.

there are other items in the community budget which complement contributed donations. 'Integrated Programmes' and 'Integrated Investments' are referred to the FEDER, which can finance infra-structure projects and programmes including architectural heritage preservation, but only if the promotion of touristic activities is its main objective. The European Council Fonds de Reétablissement have similar characteristics to a 'Fomento' bank or to Social Solidarity Institutions, helping through subsidies or through the concession of loans at very low rates. Urban Rehabilitation is one of the elected programmes.

UNESCO Fund can help the rehabilitation and conservation of sites on the World Heritage List through grants which come from its state members (such as Portugal) as well as from donations.

The E.E.C. could co-finance national and local expenses, including the infra-structures, and basic equipment. In Portugal the EEC awarded, until 1991 through the FEDER 70% of the public expenses in projects. The European Social Fund and the European Bank Investment could also contribute, if one takes into account the need for professional skills in preservation techniques and the financing of infra-structures which will generate future profit.

The immediate programme for the rehabilitation of Alfama and Mouraria districts would cost 650 thousand contos, (3,85 million Ecus) but another 200 thousand (1,2 million Ecus) would be necessary for infra-structures. The Community can help, towards these expenses in the first year, with 3,5 million Ecus (for payments). These amounts do not cover other actions which at the moment are being projected in Bairro Alto and Avenidas Novas.

It is important to consider the possibilities of promoting and helping private redevelopment through special finance concessions, and tax incentives and the creation of credit systems through the Development of Municipal Societies or Cooperatives,

Regies.[26] Other possibilities include the implementation of trusts and the development of Municipal Societies with the participation of builders, landlords, and residents by the issuing of shares. The Community co-financing programme should constitute the starting point of an integrated operation for Lisbon and its region including the infra-structures, basic equipment pollution and environmental problems.

10.5. Obstacles in the Portuguese Process of Conservation

Considering prior Portuguese conservation in practice one must say that the administrative direction has been concerned with immediate physical intervention rather than wider actions related to socio-economic and functional conservation.

A private owner has no incentives to promote conservation because rents are very low and the duration of contracts are too long, while at the same time the RECRIA programme of financial help is not changing that impasse. As a result of multiple ownerships of sites, protected tenants and the need to provide rehousing there is little incentive to make any intervention. Thus the built heritage continues to deteriorate.

It is critically important first to clarify and define what is meant by 'historic centre', 'urban rehabilitation', 'safeguarding and promotion (valorization) plans' and the establishment of their rules.

The Portuguese legislation establishes plans for the safeguarding and promotion of historic centres as a crucial element in town and country planning. It is necessarily a connected regulation with other plans. It is not enough to promote safeguarding plans. Furthermore, it is important to establish those plans strategic measures, both for the short or long-term future, in order to obtain high levels of environmental quality. It is necessary to clarify the Environmental Law.[27] It is important that this law and the

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[26] Decreto Lei nº 31/84, 21 January.

[27] Decreto Lei nº11/87, 4/7. The Ratification of the Convention for the Protection of the Architectural Heritage of Europe was approved by Portuguese Government on 23/1/91.

Portuguese Cultural Heritage law[28] should be integrated in practice. When considering heritage there is a need for safeguarding and listing to ensure compatibility, protection and valorization of agricultural and forest areas, of natural and built heritage, with the establishment of areas for housing, industry and services.

Along with the lack of any attractive credit system or legal protection, there is little financial help, reduction in taxes, extended periods of payment, a very small amount of grants and the very rare tax incentives for the promotion of private conservation. In many cases housing rehabilitation becomes more expensive than expected due to: difficulties in finding temporary dwellings for the residents who must relocate while works are proceeding; because the building construction industry is not giving the necessary answer to the technologies used in conservation; because there are still only a few specialized technicians and craftsmen.

The grants established by the government budget to the PIDDAC towards the conservation of urban historic sites are unrealistic if compared with the real necessities. The following are the values predicted by the budget: for 1991 - (1 827 400 contos); 1992 - (4 292 696 contos); 1993 - (3 953 300 contos).[29]

From these values one is able to assume that the Portuguese Government is not paying sufficient attention to its heritage. Only a clear and strong financial effort would help programmes of conservation.

Lastly, the first step for the process of conservation must be the inventory. Portugal needs to initiate a statutory inventory of Cultural Property which could be organized either geographically (by regions, districts, towns and quarters, following the existing Portuguese Administrative Organisation of the Territory) or by type or groups of buildings. When finished, it should be available to national, regional and local authorities, the public and any society interested in the protection of the heritage.

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[28] Decreto Lei nº13/85, 7/6.

[29] Instituto Português do Património Cultural.

Part IV

Developing and Evaluating a Conservation Proposal

Chapter 11

Assessing Values to be Preserved

11.1. Introduction

The overall aim of *Part IV* is to develop and evaluate a conservation proposal to be implemented in the study area. A key feature of this research is the integration of replicable evaluative procedures into the development stage. This is in contrast to the traditional method of adding the evaluation on at the end. Although our focus is naturally on Baixa, the methods proposed also aim to be sufficiently general to be applicable to other urban interventions.

The present chapter carries out what is referred to as an *architectural quality evaluation.* This procedure consists of identifying the intrinsic *values* which the survey area exhibits and classifying them in such a way that permits an informed choice as to which methods of conservation should be applied. Essentially, we make explicit which values should be preserved and depending on how particular buildings fare in relation to these, we determine the necessary technical treatment that allows the values to be sustained. The architectural quality evaluation is aimed at aiding decision making on whether to preserve or to replace. It is the first step in identifying the intrinsic value of a potential conservation area, given its location and surroundings, the type and condition of its buildings and the constraints under which its future development will occur.

Nowadays, heritage conservation is understood in its widest sense as containing all the signs that document the activities and achievements of human beings over time.[1] Cultural heritage embraces diverse objects which are related to a variety of settings. These are in turn associated with different values depending on their context and will

[1] Feilden, B., Jokilehto, J., Extracts from the Draft, 'Guidelines for the Management of World Cultural Heritage Sites', Commissioned by the World Heritage Committee, Unesco, May 1991, p.8.

necessarily require different responses (or treatment) by the conservationist. Therefore, before a detailed intervention is proposed, the concepts of value and treatment associated with heritage conservation must be identified and assessed.

The chapter is organized as follows. We begin, in Section 11.2, with a discussion of the more important values that city centres and their buildings exhibit, given that there is a need to assess them in the process of urban conservation. Based on the international literature, two major groups of values are identified: cultural values (eg. historic and artistic) and use values (eg. economic and functional). This is then followed by an analysis of how those values are reflected in the specific context of Baixa Pombalina (Section 11.3). Section 11.4 presents the techniques used for the treatment of cultural heritage. In Section 11.5 we present a basic evaluative method for establishing the physical and architectural quality of buildings that might be preserved and suggest which kind of actions should be taken to extend their life. The possible measures identified, and defined, are conservation, preservation, consolidation, restoration, rehabilitation and reconstruction. The method uses a building evaluation sheet in order to aid elaboration of the proposal. The procedure provides systematic information to decision makers regarding the architectural, historical, aesthetic, cultural and use values of the studied buildings. Two basic areas are addressed in this assessment: (i) historic/aesthetic features; and (ii) the potential future use of the buildings in relation to present technical problems. In Section 11.6 we apply the method to the Baixa Pombalina, namely the quarters in Zone C. This provides information on building quality and possible treatment and determines which of them should have priority intervention. Finally, Section 11.7 concludes the analysis.

11.2. Establishing Values

It is a fact of life that cultural evaluations are implicitly made at various levels. For example, in choosing to invest in the conservation of a particular area, a City Council is implicitly valuing that area above others. It is just as well, therefore, to make evaluations more explicit in order to strengthen conservation initiatives, both from the quality and financial points of view. A solid basis must be found, a philosophy of conservation which provides logical answers to the question of '*why conserve*'?

The evaluation of cultural built heritage can have different objectives: one is the elaboration of an inventory or list with the purpose of protecting and listing buildings; another is the establishment of the *value in use of buildings* which enables their classification with a view to future use. The approach to assessment must also differ in archaeological, architectural and urban conservation. The archaeological approach is objective and is concerned with the intrinsic value of buildings or townscape as pieces of 'historic evidence'. It implies that our obligation is to preserve historic evidence of all kinds in order that future generations are better equipped to do so, can use it to interpret and expand our knowledge of history. The architectural and urban approach is concerned with the preservation of their values as a visual amenity, because buildings and sites reflect identity and inspiration for future generations. It allows for change and encourages improvements, largely for our own immediate benefit, with a view to providing continuity that will be appreciated by future generations.

The process of recording value involves making judgments. This is different from the simple recording of an element because it must be able to capture the quality of relationships (for example, how a building or group of buildings will relate to the environment and to its present and future usability). There is a judgment of quality introduced, a subjective element, which must be recognized and accounted for. Therefore, it is important to ensure that the basis of the recording of relationships is clearly debated and defined. Before evaluating the buildings in Baixa Pombalina, two questions in particular should be asked: *how* are they being evaluated and *by whom* is the valuation made?

The evaluation of our past is necessarily guided by our own criteria and judgements. These are always influenced by current trends and will in future either be approved or condemned by our successors. As Linstrum argues '*Each generation in any country rediscovers the past, and the values it places on any historic heritage may be different from those of previous generations*'.[2] Consequently any action towards the preservation of historic heritage should be preceded by an analysis of *what* exactly one wishes to preserve, *why* it should be preserved and *how* is it going to be preserved. Such an

[2] Linstrum, D., 'Concerning Buildings: Nationalism, Local Pride and Conservation', lecture delivered at the University of Queensland, June 1979, p.5.

evaluation should examine the significance of the buildings as part of that heritage.

For both movable and immovable cultural property, the objects chosen for treatment and the degree of intervention are based upon the values that can be assigned to cultural property. These values help to identify the surveyed area or building intrinsic values, in a way that they inform on priorities to be taken as well as the treatment to be applied.

Two main headings are proposed to aid this assessment: cultural values and present day use values.[3] Cultural values that are associated with heritage sites and their relationship with present day observers are naturally subjective. They depend on the sensitivity to the past of the present society. These values influence the interest in the object and in its setting, the interpretation of the intrinsic cultural resource, as well as the policy of treatment. The significance of an object and the consequent treatment should be defined on the basis of these values in relation to historic features and archaeological potential. Cultural values generally have the following components: (i) *cultural identity* which is based on recognition and includes age, tradition, continuity, religious, symbolic and political aspects, and so on; (ii) *artistic/technical* value, based on scientific historic evaluation of the aesthetic and architectural design, the technical-structural and functional significance of the object; and (iii) *rarity value* which is based on the relation of the site to construction of the same type, style, builder, period, and/or region: that is, the representative uniqueness of the object.

A particularly important aspect of cultural value is *historic value*. 'Conservation for reasons of history' seems to be the most obvious reason for wishing to retain any object in a particular form. Historic value has been defined as conservation and action towards all the signs that could re-establish the time-space structure.

Authenticity which relates with the historic value is a fundamental aspect for the conservation of the heritage. It means 'original' or 'genuine', and depends on the definition of the historic object and should generally refered to historical stratigraphy as

[3] Feilden, B., 'An Introduction to Conservation, of Cultural Property', Unesco, April 1979, p.22. op cit., Feilden, B., Jokilehto, J., 1991.

the 'various originals' within the object.[4] According to this the destruction of historical evidences will reduce the authenticity of the object. Four types of authenticity can be considered: (i) authenticity in design; (ii) in materials; (iii) in workmanship, and; (iv) in setting.[5]

These values which can be part or totally identified in a building will consequently be related with different impacts which in turn influence the future role of the building. Within cultural identity, the emotional values have been shown to be the most influential. They have an impact on the safeguarding, conservation and restoration of a building. If on the contrary these are not identified and taken in consideration, there is a risk of destruction. The second group of values, the artistic/technical will influence the classification and listing of buildings. Rarity value, which is related with the previous ones will influence the level of protection in the classification.

Use values are related to the present-day society and its socio-political infrastructures. They are substantially associated with economic aspects. They raise the problem of the new use, alteration and relationship with social changes in the area.

With regard to use value one has to mention the building's 'working role', and the need to maintain or develop that role for the benefit of society, and the activities which they support.[6] Although different opinions on this theme have emerged, it is possible to identify five further established values for conservation: (i) *economic value* which is associated with the best allocation of resources to fit a wide range of needs; (ii) *functional value* which is related to the economic value and to the capacity of a certain use (original or not) to continue compatible with the building or area; (iii) *educational value* related with didactic value of the object or site and the awareness of concrete evidence in culture and history; (iv) *social value* which relates to traditional social

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[4] Feilden, B., Jokilehto, J., Extracts from the Draft, 'Guidelines for the Management of World Cultural Heritage Sites', Commissioned by the World Heritage Committee, UNESCO, May 1991, p.6.

[5] ibid. p.6.

[6] One has also to consider in building use both the physical function and their symbolic or political function. However, our only concern here is with their physical function. On symbolic and political function see: Lynch, K., What Time is this Place, Massachusetts, MIT Press, 1972.

activities; the present-day functions compatibility with the historic structures, and; (v) *political value* which relates to the significance of the site in relation to history and present day ambitions.

Regarding the cultural heritage, economics can be understood as a value generated by the heritage taken as a resource or by the conservation process.[7] Economic value of a building is an extremely complex area which will require detailed analysis further on. Old buildings play an important role in the social and economic life of a town because they can offer variety of accommodation in terms of costs and therefore, in terms of users.

When a building is conserved there is a resource benefit to society. By implication, when it is neglected the consequence will be a socio-economic loss. This argument has been strongly supported by Carlo Forte and Fusco Girard.[8] Forte suggests that the economic value of the conservation object is to be found by the sum its direct value in the market with its social surplus value through the monetary valuation of the externalities, (ie. the external effects beyond the owner). For him direct value is seen in the market; indirect value (social surplus value) is related with the money value that the attributes of the externality possess. There are four major components of economic value associated with the fact that old buildings and towns are useful economic resources in the form of income: (i) from tourism and leisure-spending; (ii) from commerce; (iii) from use, and; (iv) from amenities.

Each of these elements can be misused and can lead to undesirable intervention, sometimes destruction. Often individual profit oversteps the collective cost-benefit approach.

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[7] op cit., Feilden, B., Jokilehto, J., 1991, p.9.

[8] Forte, C., 'Il Problema dei Centro Historici', Restauro, nº7, 1973; 'Valore di scambio e valore di uso dei beni culturali immobiliori', Napoli, 1977.; and Girard, L., Economic theory and the valuation of the cultural heritage, Restauro, nº83, 1986.; The 'Complex Social Value' of the Architectural Heritage, ICOMOS Information, 1986.

When a building has an appropriate use it will favour conservation, on the contrary if the use is not appropriate, changes can occur in an undesirable way and demolition can happen. It is often cheaper and quicker to accommodate a new use in an old building than to build new. This should not be considered as an argument for conservation, because society does not necessarily adopt the cheaper and quicker of two given alternatives but it can help when doubts emerge. When speed and cost are the immediate priority, the argument is a powerful one in favour of the reuse of buildings.[9] Arguments for conservation in this context mainly concern the rehabilitation of housing stock.

Inevitably, however, conflicts between some of the values are bound to arise. The priorities attached to each will also change in agreement with specific circumstances which will determine the predominance of one focus instead of another. There is a constant conflict between historical values and social values. Historical significance changes in accordance to society's tastes and identities. Social values also change but for different reasons, to differing degrees and with considerable variables between them and historical values. Social changes should always be considered because the success of an intervention depends on people's desires and wants. A lack of social coherence and appreciation of values in an area will make conservation problematic. There is a further conflict between historical and aesthetic values as one is often confronted with the decision about which historic stage of a building one should preserve. For example many Romanesque churches in Portugal received in later periods a Baroque decoration which was removed during restoration works in the Fifties and Sixties. The philosophy at that time was to reestablish the prime historical value, without considering the Baroque additions which were often much more important.

Conservation of historic buildings cannot be separated from the conservation of their context. Therefore, it is also important to distinguish between the aesthetics of architecture and of town planning. For the former, attention is projected on specific buildings or integrated groups of buildings, both externally and internally, whereas in

[9] Comparisons of cost, are dangerous if they fail to differentiate, between land costs and 'energy' costs, and in any case one is comparing two very different end products. (Cowle, L., 'Conservation - Motive and Method', MA thesis, Io.A.A.S., York University, 1975)

town planning the subject of urban design is equally concerned with the spaces between buildings. Additionally to this it essential to consider who is involved with the historic buildings and their points of view towards their future life.

What is being valued is a complex intangible quality, which one wishes to transmit to future generations, but which is attached to property, public or private, whose exchange value to the owner could be great or insignificant. The latter consideration is most apparent when renewal is considered as an option for an obsolescent building. In this situation there are two distinct views: the owner/developer is valuing the financial surplus whereas the conservationist is valuing heritage quality. So how are we to achieve the latter?

Different values will be attributed to built heritage depending on the interested parties concerned: the occupier, the owner or society as a whole. Each will have different interests in conservation. Generally, the owner values the property in money terms as an investment looking always to his return. The occupier is interested in the satisfaction of human wants that can be derived from the building, either in terms of production or consumer services. Society changes its valuation from one generation to another, going from rejection through indifference to conservation. As one can not predict how a future generation will value its heritage, the main approach today is to give the choice to the people so that they can make their own judgment on conservation. The government acts on behalf of the people, including those who would have chosen an alternative government or those not qualified to vote. This means that the government should recognise the views of conservationists and of the population in general.

11.3. Values in Baixa Pombalina

When objectively considering the rehabilitation of Baixa Pombalina, one must first understand the historic era in which it was built. The original city was rebuilt under a gridiron plan with blocks of continuous uniform facades that were able to support economic activities both because of the simplicity of the scheme of distribution and because of the dominant typology of the rented houses within a mixed use buildings. Consequently the Baixa Pombalina plan has historic value. Certainly it is possible to

question the authenticity of the Pombaline plan and design.

In Baixa Pombalina there is a relationship between the plan, the colonial cities and the European interventions of that time. We have seen that the Pombaline gridiron plan was influenced by Spanish colonial planning methods in South America. These were efficient, fast and easily executable: precisely what was required to rebuild the city of Lisbon after the earthquake.

The gridiron plan, its hierarchy, its architectural uniformity are all part of the colonial vocabulary, but at the same time they are related with the best architectural tradition of the Age of Enlightenment, (as specified in Chapters 4 and 5). European cities suggested new information, more dynamic legislation, specifically from London's Building Acts, which helped Manuel da Maia to introduce regularization (proportion and symmetry) to Lisbon's urban plan and in architecture, together with the introduction of hygiene in the city. From the French Places Royales came the idea of uniformity in facade design and monumentality, now present in Comércio Square. It is important, however, to note that the whole scheme for the rebuilding of Lisbon was not as imaginative as contemporary city planning and architecture if one contrasts it to other plans elsewhere in Europe.

Despite all the influences already mentioned, the Pombaline intervention can be considered as unique for its time in the Western European context. It is a scheme that is well adapted to the already existing medieval structures and that includes both the physical town planning and the social structure. Its programme shows a composite rigidity, resultant from the unity and integrity between buildings and plan. The typological element in the Pombaline plan is the block or quarter which composes the gridiron plan, and it has no similarities with any other gridiron urban system or type of blocks. (see Chapter 4,5 and 6) The building block is the instrument for the streets and squares; it is the element that defines the urban scale, the use, the architectural order and language (public and private, individual and collective). Therefore, Baixa Pombalina shows authenticity in design and in setting.

Aesthetic value is displayed on the facade level with their extremely rigorous design and good qualities of composition, demonstrating the relation between the pre-fabrication and

the architecture as a complex fact. The blocks' facades have an architectural and historic interest, they have value as visual amenity and identity.

Regarding the technical value, mention should also be made of the process of pre-fabrication and standardization used for the construction of Baixa Pombalina buildings which can be considered as an innovation for that time. Additionally, the interior design of the buildings is very simple and modest, reflecting the necessity to provide a rapid solution to the earthquake in a country with scarce economic resources (see Chapter 5 and 6). It is possible to say that Baixa also shows authenticity in materials and workmanship.

Baixa Pombalina has in fact a cultural value as an eighteenth century scheme for the rebuilding of Lisbon's centre. It symbolizes and marks an economic and social break in the history of the city at the moment when the middle class became isolated. This was accompanied by a separation between production and trade which had been united in the Medieval period, therefore it has a political and symbolic connotation.

Baixa Pombalina as a city centre is effectively connected with its traditional social activities, commercial and administrative which are at the moment the only attraction in the area.

Regarding Baixa Pombalina's use value, it is important to consider its economic value and its functional value. The economic value relates with its position as a city centre and the concentration of uses, commercial and offices. The use value is also connected with its position as a city centre and with the type of buildings which for many years have been able to support changes. Office space which was previously very divided both in the type of activity and ownership has become of a single type and owner. Housing on the contrary has not been adapted to the present day requirements and has been progressively taken over by offices and commercial use.

Baixa Pombalina have in fact shown that it is a desirable place for offices and commercial activities. When the space is previously taken by another use such as housing, these new uses, which have a higher value, are likely to change the previous

one. Baixa has shown a remarkable ability to adapt its physical structure as a result of changing economic activity.

11.4. Establishing Treatments

This section aims to present the techniques accepted internationally for cultural heritage treatment, which will be applied to the buildings once their architectural quality is assessed. Conservation involves making interventions at various scales and levels of intensity which are determined by the physical condition, the causes of deterioration and anticipation of future life after treatment. Decisions concerning the treatment of historic buildings and sites must be based on a balanced judgement of the values contained in the building's and site's resource. Each case must be considered as a whole and individually, taking all the factors into account.

Today the main principle of conservation and restoration is based on the minimum effective intervention. It is considered that any intervention will always involve a loss of 'value' in cultural property, however it can be supported by the fact that it will preserve the essence of the objects for the future. Treatments of cultural heritage sites should: (i) assure reversibility if possible in order not to change evidence and prejudice future interventions; (ii) maintain authenticity by allowing the maximum amount of existing original material to be retained and respecting its architectural potential.[10]

Eight degrees are as follow:

1. Prevention of deterioration (or indirect conservation), entails protecting cultural property by controlling its environment.[11]

2. Preservation is to keep cultural property in its existing state.

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[10] op cit., Feilden, B., Jokilehto, J., 1991, p.3.

[11] Fielden, B., op.cit. page 9, as well as for the following six definitions.

3. Conservation can simply be defined as 'action to prevent decay'.[12] The aim is to prolong the life of a building without detracting from the existing historical and aesthetic qualities of the fabric. It is agreed today in international conservation circles that intervention should be as minimal as possible and in some circumstances reversible.[13]

4. Consolidation (or direct conservation) is the physical addition or application of adhesive or supportive material into the actual fabric of cultural property in order to ensure the continued durability of its structural integrity.

5. Restoration has as its objective the revision of the original concept or legibility of the object. Restoration by anastylosis (the reassembling of existing but dismembered parts) using original material is justified when supported by firm archaeological evidence and when it makes a ruin more comprehensible.

6. Reproduction entails copying an existing artefact, often in order to replace some missing or decayed parts, generally decorative, to maintain its aesthetic harmony.

7. Reconstruction of historic buildings and historic centres using new materials may be required by disasters. As in restoration, reconstruction must be based upon accurate documentation and evidence, never upon conjecture. The moving of entire buildings to new sites is another form of reconstruction, justified only by overriding national interest.

8. Rehabilitation, the best way of preserving buildings (as opposed to objects), is to keep them in use - a practice which may involve what the French call "mise en valeur", or modernisation with or without adaptive alteration.

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[12] Feilden, B.M., Conservation of Historic Buildings, London, 1982, p.3. He describes the Types of Intervention in Historic Buildings in seven ascending degrees, always having in mind that minimum effective intervention is the best.

[13] Most countries are members of organizations such as: ICOMOS (International Council on Monuments and Sites) which is governmental and non-governmental such as, ICCROM (International Centre for Conservation in Rome) or major conservation bodies as UNESCO (United Nations Educational Scientific Cultural Organisation).

Treatments may vary from conservation and maintenance to various degrees of conservation, reinforcement and even transformation regarding new use. The application of each of these treatments will be justified on the basis of critical assessment of values.

11.5. Evaluation of physical and architectural quality

This section presents a method for the assessment of the qualitative attributes of buildings from the conservation point of view. It acts as an aid to two important selection exercises: (i) that of deciding which buildings require intervention, and (ii) that of deciding upon the appropriate treatment to be applied. Based on the discussion beforehand, a number of factors or attributes, representing cultural and use values, are proposed. The evaluation aims to asses how the buildings in Baixa fare in relation to these factors.

The information is collected by means of a building valuation sheet, (*Bvs*) developed specifically for this study. This is based on a well-known *Bvs* proposed by Kalman,[14] and on the 'points system' of the PSEDROC programme, although we have attempted to provide a simplified version which can be filled in by anyone involved with conservation, whether they are planners, architects, surveyors or private citizens. The building evaluation sheet, which is shown as Table 11.1, has three key components: the factors or elements which represent values, the pre-determined weighting which is attributed to each of these, and the rating established by the evaluator with regard to the factors. These are described in detail below.

It is important to recognize that the process is necessarily subjective. The judgements that are made - with regard to choice of factors, the weighting attributed to them and the actual scoring - all depend on the values of the researchers or whoever else happens to carry out the evaluation. Nevertheless, the assessment is highly *explicit*, so that interested parties are informed as to how the final results come about. Indeed, it is likely that in future it will be necessary to update records, even if a consensual

[14] Kalman, H., 'Evaluation of Historic Buildings', Ottawa, 1979. I.o A.A.S., Research Paper 26, 'The points system', York, September 1988. I.o A.A.S., DROC Points System, Operational Manual, A Department of Health Funded Study, July 1990.

evaluation is reached for the present.[15]

Table 11.1. Building Valuation Sheet

Factor	Weight	x	Evaluation	=	Score
1. Artistic	15	x	1 2 3 4 5 6	=	
2. Structural	5	x	1 2 3 4 5 6	=	
3. Age	5	x	1 2 3 4 5 6	=	
4. Historical Social Context	10	x	1 2 3 4 5 6	=	
5. Environment	8	x	1 2 3 4 5 6	=	
6. Symbolic/local importance	7	x	1 2 3 4 5 6	=	
Subtotal	*50*				
7. Suitability	15	x	1 2 3 4 5 6	=	
8. Future Potential	15	x	1 2 3 4 5 6	=	
9. Compatibility	10	x	1 2 3 4 5 6	=	
10. Amenities	5	x	1 2 3 4 5 6	=	
11. Maintenance	5	x	1 2 3 4 5 6	=	
Subtotal	*50*				
Total	100				

11.5.1. Factors

The choice of factors of importance for evaluating architectural quality derives from the discussion beforehand. They are grouped under two headings corresponding to the cultural and future use attributes of buildings. The first of these includes *factual and objective* factors which enable the architectural features of a building and its relation with the environment to be evaluated. There are six selected factors. Artistic, structural

[15] Jamieson, W., 'Recording the Historic Urban Environment: a new challenge', Preservation Planning, APT, Bulletin vol.xxii, n.1/2, 1990, pp. 12-16.

and age attributes are directly related to the aesthetic values which are demonstrated through design qualities, composition principles and construction characteristics. Historical and social context is related to historical values, establishing the connection between the building and the event to which it is related, to its cultural and social links. Another factor of major importance is the relationship between the building and the environment. The building cannot be seen in isolation from its context, therefore emphasis has to be given to its weight as an urban element.

The artistic quality of a building is dependent on it being a notable, rare, unique or early example of a particular architecture, type or convention. The evaluation is best carried out by comparing a particular building to as many others of a similar style as is possible and assessing it in terms of the aims of its designer (as they are understood). Here it is important to note the rarity of the building as well as its intrinsic value. To this can be added the aspect of a building being designed or built by an architect or builder who has an established reputation in the community or country. The Pombaline buildings represent a distinguish example of eighteenth-century architecture. Specifically the facades show good qualities of composition and rigorous conception.

A similar criterion is applied to the structural element. This relates to the technical system of construction. The score will value the notability, the rarity, the uniqueness of a construction. This may be valued only if the assessor is certain of the nature of the structure. The pombaline buildings show a valuable and innovatory system of construction, 'the gaiola', and an ingenious process of pre-fabrication and standardization.

Age expresses if a building is comparatively old in the context of its region. A different scale of building age must be established for each city, region, or province. In the city centre the Pombaline buildings (and its plan) are the second oldest group of buildings, subsequent to the medieval area.

The Historical and Social Context attribute represents the degree a building is associated with, and effectively illustrative of broad patterns of cultural, social, political, military, economic, or industrial history. A helpful measure of this factor is to consider how

useful the structure would be for the teaching of cultural history. The Pombaline buildings represent the rebuilding area after a major earthquake in 1755, and a new way of organising the city.

Environment represents the level of contribution to the continuity or character of the street, neighbourhood, or area. This quality will change as the neighbourhood changes. Intrusive new construction may reduce the environmental value of an older building. Due to the facades' uniformity, and the plan rigidity the Pombaline buildings show a distinct design different from other buildings.

Symbolic and local importance is expressed by the importance of the building as a visual landmark. The building can be considered as a symbol for the city or region as a whole. Often this is not at the same level as its architectural design, which can be very poor, but if the social values are strong these will prevail. Baixa buildings represent the Pombaline intervention in the city, and a change in the economic activity, as well as the major shopping area in the city.

The second group of attributes concerns the *building's use*, its *working role* and its future needs to maintain or develop that role for the benefits of the interested parties. Each building's performance has a *comfort zone* establishing the limits of acceptability for the type or occupancy concerned. The performance concept establishes that the primary goals of buildings are to serve users' needs, as well as the needs of the surrounding community. The limits of acceptability are defined by the individual's and community's physiological, psychological, sociological, and economic needs, requiring an understanding of the term comfort. In order to value a building's performance and its future potential in terms of comfort one ought to compare requirements such as suitability, compatibility and maintenance.

The attribute Suitability is a measure of the degree to which a building and its components parts serve user needs in the present and near future. The buildings in Baixa serve the commercial and offices user needs, due to improvements and rehabilitation, but they do not serve the residents.

Future potential assesses the probability that the service will continue to perform as intended throughout the life of the facility, given appropriate maintenance and use. It includes the sub-factor adaptability which is a measure of the system's ability to accommodate changing functions and occupancies and the continuing effort and resources required during the building's life cycle to maintain suitability, without harm to the architectural elements which contribute to its significance. This means making certain assumptions about the possible adaptive uses that are appropriate to current social patterns and zoning. The buildings in Baixa have proved that, on the whole, they are able to support other uses.

The factor Compatibility expresses the degree to which the building's present use is compatible with the current land use or zoning of the site, street, or neighbourhood. This quality may vary as zoning or adjacent land is changed or as the distribution of activities within the building is changed. Regarding compatibility it is important to note that the present uses in Baixa are compatible with the land use policy supported by the city council, which is to have a commercial and administrative city centre. However, this is not compatible with the residential use which still exists in the area. In our view the present uses are not compatible, either with the buildings or with the city in general.

Amenities expresses the adequacy of the amenities and protection for contemporary use, (these amenities include the exclusive use of a W.C. inside the dwelling, a fixed bath or shower, a wash basin, a kitchen sink, a hot and cold water system servicing a bath, wash basin and sink, fire stair and safety, police protection, and public utilities and availability of parking). Apart from the office space, the residential and even the commercial space do not show adequate amenities.

The attribute Building Maintenance represents the degree to which the buildings are being adequately maintained. (This criterion should be considered only if the structural condition can be assessed accurately). It has been defined as work undertaken in order to keep, restore, or improve every facility, that every part of a building, its services and surrounds to a currently acceptable standard, and to sustain the utility and value of the

facility.[16] It is used here also as a means to assess the future maintenance the building would need with the new proposed use. The maintenance function can be divided into three groups: (i) cleaning and servicing, (ii) rectification and repair and (iii) replacement. Cleaning and servicing should be carried out regularly and may be combined with a system of reporting faults, so that repairs can be carried out soon after faults become apparent, thereby avoiding the need for more expensive repairs or even replacement at a later stage.[17] The cleaning and servicing operation is usually the responsibility of the building occupier. The buildings in Baixa show very different levels of maintenance, either internal and external which relate mainly with the type of use they accommodate.

11.5.2. Weighting and rating

The architectural quality appraisal proposed here draws on the so-called *points system.*[18] This is a simple tool for carrying out a systematic analysis of diverse building designs and service operation factors. It is a development of a particular approach to appraisal favoured by the National Health Service PSEDROC programme - Point System for Evaluating Development Options to Reduce Operating Costs.

This system is intended to provide a simple instrument which can assist planning teams at the earliest stages of a proposal process, as an aide-memoir in the preparation of buildings's classification. The value of the points system lies in its providing a method of ranking different factors.

An important element of the evaluation is the weighting that is attributed to each of the factors. These weightings would either be pre-determined by the City Council and universally applied and only officially amended, or they could be established by each project team. The weighting varies between 5 and 15, according to the importance they have in the assessment. The weighting should always be flexible, therefore the

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[16] Report of the Committee on Building Maintenance, (HMSO), London, 1972.

[17] Miles, D. and Syagga, P. Building Maintenance, a Management Manual, published by Intermediate Technology Publications, A. Wheaton & Co. Ltd, Exeter, 1987, p.17.

[18] I.o A.A.S., Research Paper 26, 'The points system', York, September 1988. I.o A.A.S., DROD Points System, Operational Manual, A Department of Health Funded Study, July, 1990.

numerical scoring should be able to change if necessary, but the verbal grading which is objective should not be changed.

On the first set of attributes importance was given to the historic building, its architecture and history, therefore scores are higher for the artistic and historical context. The second set gives more importance to the practical criterion of usability, therefore, suitability and future potential reach the higher scores. Also here it is possible to change these scores in a different situation when other values tend to be more important. For example, if instead of evaluating the three proposed blocks of this study located in the central gridiron area, the evaluation would occur in Comércio Square, greater weight would be given in the cultural attribute, upon the artistic, the historical social context but above all to the environment. In the second group of attributes higher values would be given to compatibility and maintenance.

In the calculation of the relative values of the eleven factors the interactions have already been taken into account. The assessment has two subtotals which have an equal subtotal of 50 points implying that each group of attributes has similar importance. These two subtotals should be used separately in order to solve the problem of borderlines. In fact it is difficult to determine the minimum total score necessary to warrant preservation. Obviously no scoring system makes an absolute judgement, however by using two subtotals it will be possible to have a much more explicit assessment. In some cases, assessments, specifically in England, resulted in the loss of several structures because their total count was under the value established for preservation.[19]

A building's value is measured by comparing its scores with those for other buildings. Comparisons should be made between buildings of a single style and in the same region.

The factors are scored on a six point scale ranging between 1 and 6. A score of 1 represents the worst situation the planning team can realistically imagine, (this is not

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[19] Several examples of numerical scoring systems are referred to by Falkner, A., Johnson, D.L., Assessment of 20th Century Architecture, Notes for conservationists, Flinders University of South Aystralia, 1980, p.77-81; Falkner, A., Without Our Past?, University of Toronto Press, Ministry of State for Urban Affairs and Publishing Centre, Ottawa, 1977.

necessarily as bad as the worst that can ever happen). A score of 6 represents the best situation that can realistically be imagined, (which is not the same as the 'utopian' situation).

The individual ratings multiplied by the relevant weighting give the score for each particular attribute of a single building. The scores then can then be added together to give an overall sub-total value for each building. This will be between 50 and 300 with higher scores indicating buildings of major significance. Once all the different buildings have been scored it is then possible to compare them and to identify which, relative to the others, are worth considering for intervention. Each of the factors is to be looked at independently, even though there appear to be obvious links and areas of overlap.

11.5.3. Implications for classification and treatment

The overall score for each attribute determined by the selection and weighting of a criteria is then used to place the buildings in a group of significance, A, B, C or D for the cultural, a, b, c and d for the usability. Table 11.2 represents the nominal scale for the results with a view to selecting a future intervention in the buildings. A building's score - and its consequent group - will form the basis for decisions as to its future in the context of the conservation plan. Finally it will be possible to determine those buildings that require priority intervention by comparing its attribute score within and between buildings. If the score in group (i) culture is high and differs from the score in group (ii) usability,, this means that the building needs priority attention. The opposite situation, which is represented by a building with a high score in usability and a low in the cultural group will mean that the building does not need immediate intervention.

This is based on international conventions and recommendations, and standards for historic preservation projects.[20] The results are based on a four point scale, each corresponding to a quartile of the total. This grouping could also be changed and should

[20] UNESCO, Conventions and Recommendations of Unesco concerning the Protection of the Cultural Heritage, United Nations, Genebra, 1983; U.S. Department of the Interior, 'Standards for Historic Preservation Projects', with Guidelines for Applying the Standards, Washington, D.C., 1979.

always be judged by the assessor, because the aim of the evaluation is to determine relative values rather than absolute values.

Table 11.2 A Nominal Scale for the Results with a view to Selecting Interventions

Attributes	Scoring Range*	Meaning/Description	Label
Cultural	225 - 300	- of major importance	A
	120 - 224	- of overall importance	B
	75 - 119	- of value as part of the environment only	C
	9 - 74	- of no importance	D
Usability	225 - 300	- good usage	a
	120 - 224	- reasonable usage	b
	75 - 119	- bad usage	c
	0 - 74	- inaptitude	d

* On building evaluation sheet

The following represents the meaning of the score used for this study, however other points spread can be established for other cases since the objective of an evaluation is to determine relative values rather than absolute values. It will be necessary to consider the borderline cases, for which it is proposed a second evaluation. However it seems that this can be solved by using the subtotals rather than the global total.

Group A buildings of *major importance* are recommended to be preserved and any action should be in the direction of restoration.

Group B buildings of *overall importance*, should also be recommended for preservation, however there will be more freedom in the type of intervention. Thus rehabilitation and adaptation can be applied to buildings in this group.

Group C buildings that are of *value as part of the environment*, should be recommended for preservation as part of the historic context of the area. They allow rehabilitation and

adaptation.

Group D buildings, of *no importance*, need not be considered in a conservation plan. They can be replaced if necessary.

Group a buildings with *good usage*, serve the users' needs at present and in the future if appropriate maintenance is provided. The building's present use is compatible with its features and with the current land use. Amenities are all provided and in good condition. The building is well maintained and any changes in use should be carried out only if they do not destroy its historical and aesthetic components.

Group b buildings with *reasonable usage*, needs maintenance works to serve users needs at present and in the future. The building's present use is not fully compatible with its features and with the current land use, but it will be able to accommodate changes in function with minor upgrading of amenities and repair works.

Group c, buildings with *bad usage*, would need radical conservation work. The present use is not compatible with its features and with the current land use. It will be able to accommodate changes in function but with major rehabilitation works.

Group d, buildings with *inaptitude*, when it could be considered of no importance to be rehabilitated, which means that this will be at the end of the scale of priorities for intervention.

Considering that this evaluation is going to take place in an historic area, it is probable that five to 10% of the buildings will fall in groups Aa, 30% to 40% into groups Bb, 25% to 35% into groups Cc, and 20% to 30% into groups Dd.

The degree of control imposed upon a building will depend mainly upon its architectural value. If a building has high scores in this respect a very high priority should be placed on preserving it. This building may well be able to support itself as a piece of real estate. The legal control upon it can be applied and it could be expected that the private sector will conserve and maintain it with few (if any) incentives.

If the building has low architectural value, on the other hand it will probably not be self-supporting. There will be strong economic pressures to redevelop the property. However, if the building is important as part of the environment, a programme of controls would have to be accompanied by strong incentives and public intervention might have to intervene on behalf of the private conservator.

11.6. Building evaluation in Baixa Pombalina

The following evaluation was carried out in the three blocks in zone C. (See Figure 11.1) This will enable an assessment of which of the three blocks needs priority intervention and what kind of treatment. Table 11.3 shows a summary of the building's evaluation. The two sub-totals for each building presented in columns 2 and 3 respectively. An average score per block is also shown. In the fourth column the group totals are marked with a label A,B,C,D, or a,b,c,d, whether they represent the sub-total of group (i) cultural or historic/aesthetic, or group (ii) future use or usability.

Evaluating a single building is the easiest form but the method can also be used in historic areas. For instance, in this specific work on Baixa Pombalina the evaluation sheet was used for each building individually but it was then necessary to compare values of buildings belonging to the same quarter and of other quarters as well; therefore occasionally the score refers to the quarter's total. The individual building is part of a quarter which in itself is the generator of a model with specific formal rules, and where the units (buildings) are interrelated, so that an individual intervention resultant from an individual evaluation could put at risk the success of the total project.

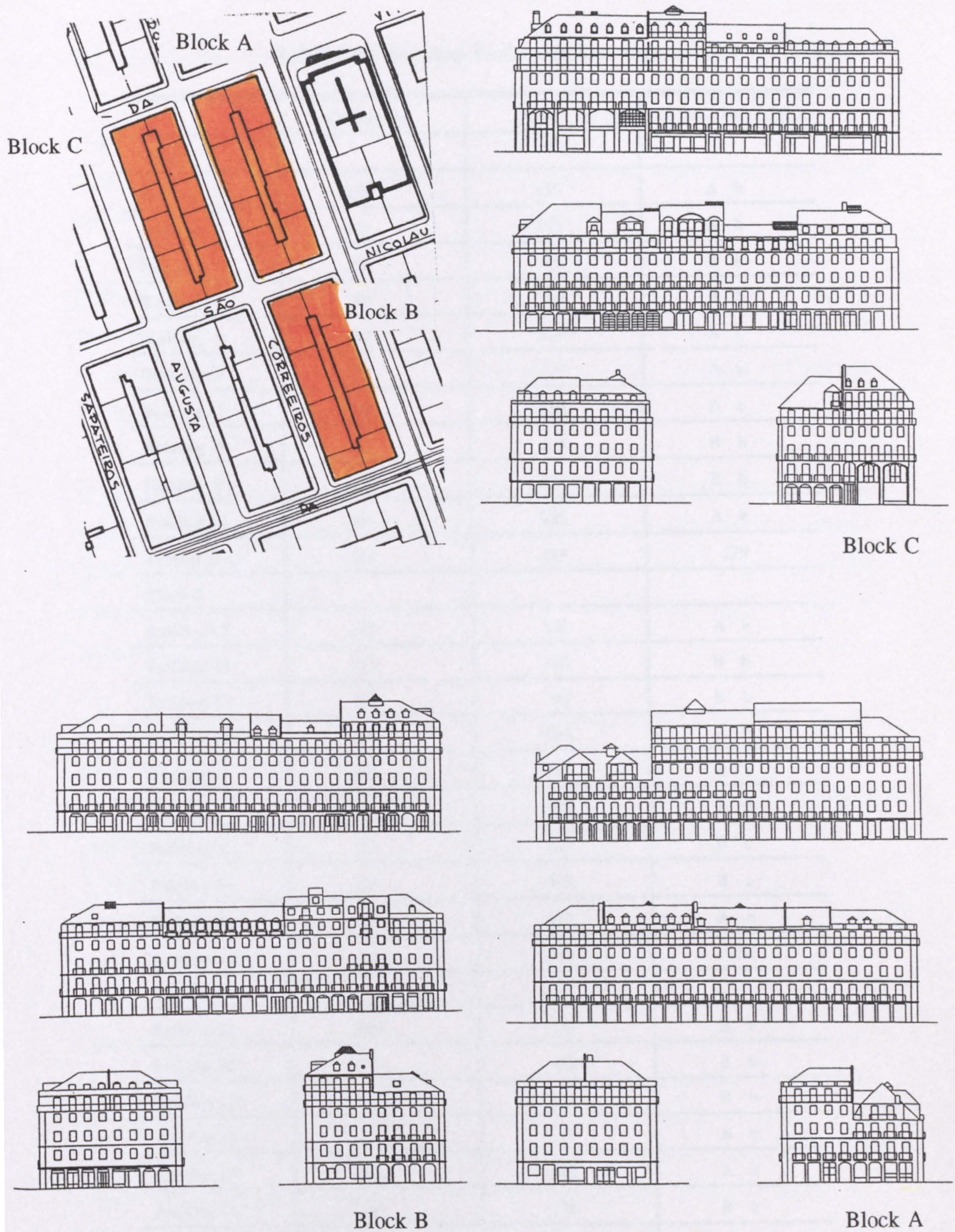


Figure 11.1 The blocks and buildings used in the assessment. Area D

Table 11.3 Building Evaluation Summary

	Cultural (i)	**Future use** (ii)	**Groups Total** (i)(ii)
Block A			
Building 1	235	155	A b
Building 2	205	185	B b
Building 3	165	180	B b
Building 4	180	220	B b
Building 5	230	110	A c
Building 6	271	109	A c
Building 7	285	110	A c
Building 8	205	125	B b
Building 9	205	160	B b
Building 10	261	255	A a
Average score	*224*	*153*	*379*
Block B			
Building 11	285	150	A b
Building 12	213	130	B b
Building 13	203	160	B b
Building 14	195	150	B b
Building 15	225	165	A b
Building 16	230	190	A b
Building 17	220	115	B c
Building 18	220	105	B c
Building 19	228	110	A c
Average score	*224*	*142*	*366*
Block C			
Building 21	200	150	B b
Building 22	170	150	B b
Building 23	145	175	B b
Building 24	180	165	B b
Building 25	229	165	A b
Building 26	205	170	B b
Building 27	180	215	B b
Building 28	236	215	A b
Average score	*174*	*175*	*369*

The results of the evaluation showed that half of the buildings are of overall importance, for which preservation is recommended. Their use is not fully compatible with the building's characteristics and with the current land use. The buildings need rehabilitation and adaptation works and amenities upgrading which they are able to sustain.

Only one building was scored Aa, which represents the highest cultural and use value, meaning that this only needs works of maintenance. Of notice is the non existence of D labels, which represent buildings for which it is possible to propose replacement within the conservation context.

Group Ac shows four cases, three of them being in block A. This represents buildings with high historical and aesthetic value, however showing bad usage and the need for drastic conservation works. These would be the first cases to be considered for intervention. The cases with a total Ab and Bb would be the next in the list of priorities.

Looking at each of the blocks totals it will be possible to recommend priority intervention in block A, because three buildings show the values Ac, one with Ab and five with Bb, whereas in the other two blocks the difference between the two groups of attributes is not so distinct.

11.6. Conclusion

The evaluation of the cultural attributes of buildings is a task riddled with many difficulties. Indeed some might argue that it is a futile exercise given that cultural value is in itself an intangible quality which is difficult to measure. Like beauty ... it is in the eye of the beholder. Furthermore, since the benefits of conservation will be enjoyed by future generations, it might seem somewhat incongruous to select proposals on their behalf based on current evaluations. The values of today may not necessarily be held by future generations. Finally, even if one were to put aside these conceptual arguments, there would still remain the practical problem of establishing what is of value.

Conservation and treatment of cultural heritage depends on the evaluation process. Treatments vary according to the character of the building or site and must be based on a critical judgement. The process of establishing criteria will always reveal attitudes and ideas about those who contrive them. It will reveal gradations and levels of importance as well as the character of how those important ideas are appreciated. The criteria used in this assessment act as a support for inducing full involvement with and understanding of Baixa Pombalina buildings. Due to its explicity it is possible to inform all the interested parties about assessment aims and its final results.

The scoring system of assessment should be considered as the first means of assessment of the built environment. It is suggested that: (i) assessments should be done in small areas and not in the whole nation, as it will be much easier to evaluate the significance of the people and events of the past; (ii) a long and open-ended list of criteria, and a variable point allocation scale should be used in order to eliminate borderline cases; (iii) the opinions of at least two experts, other than the professionals using the scoring system, should be an integral part of assessment and evaluation, and; (iv) surveys and assessments should be periodically updated.

By using the information within the survey and its assessment it was possible to determine the 'quality' of Baixa buildings and recommend a course of action. The city council will be in a position to debate these first recommendations and develop a policy for conservation. The evaluation and final selection of buildings to be preserved have to be supported by publicity. Surveys, research and architectural assessments, scoring systems and final lists, no matter how accurate they are, will not save a single building if the community is not aware of the project and its intentions. Furthermore, for the final decision whether to preserve or to replace it will be necessary a complete and careful analysis of the social and economic costs and benefits of each course of action. In the two following chapters we intend to develop a conservation proposal for Baixa Pombalina and assess its impacts in the community.

Chapter 12

An Approach to Conservation in Baixa Pombalina

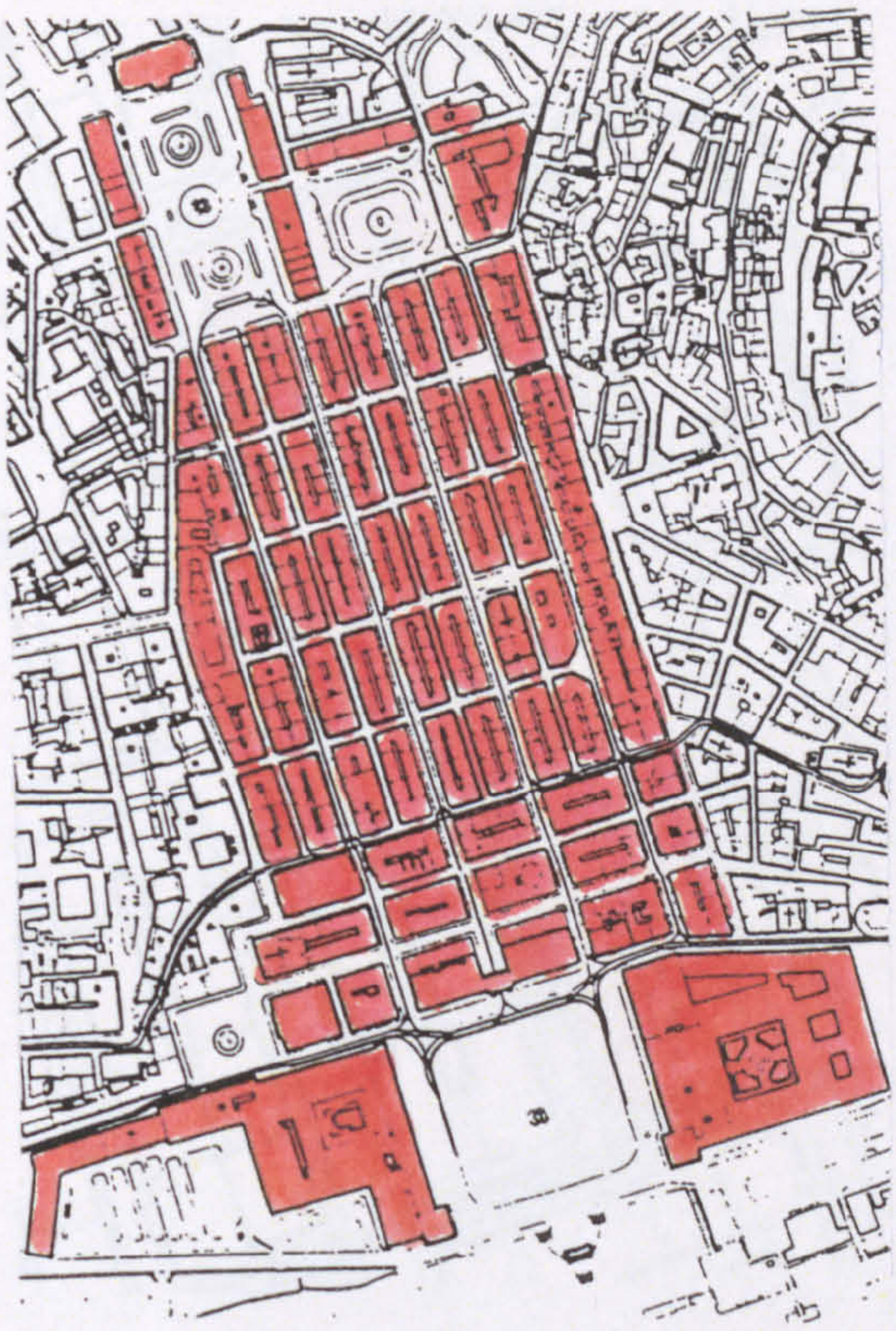
12.1. Introduction

The principal objective of this chapter is to present a detailed conservation proposal for Baixa Pombalina, which is then evaluated in the chapter which follows with reference to the alternative Piecemeal Redevelopment, illustrating the situation as it exists or has evolved in recent years. It represents a particular attitude towards the built heritage, based on the sole objective of maximizing profit and is characterized by the demolition of buildings to free the site for new development. By contrast the option presented in this chapter is Comprehensive Conservation. It represents the confluence of regional planning, town planning and architectural needs, and above all, the international consensus towards heritage conservation. This approach is not limited to preservation but seeks creative continuity by promoting vitality of use of the environment while ensuring that change is observant of the quality of life of both present and future generations.

These two alternatives are not the only options available for the area. Nevertheless, by comparing the consequences of piecemeal redevelopment with that of conservation, the major advantages and disadvantages of each will become clear, given that piecemeal redevelopment is synonymous with the present situation which has been sufficiently explained in the analysis of previous chapters. It is discussed here essentially as a basis for comparison with the alternative of comprehensive conservation (Section 12.2). The conservation proposal is presented in Section 12.3., while the major differences between the two options are presented in Section 12.4.

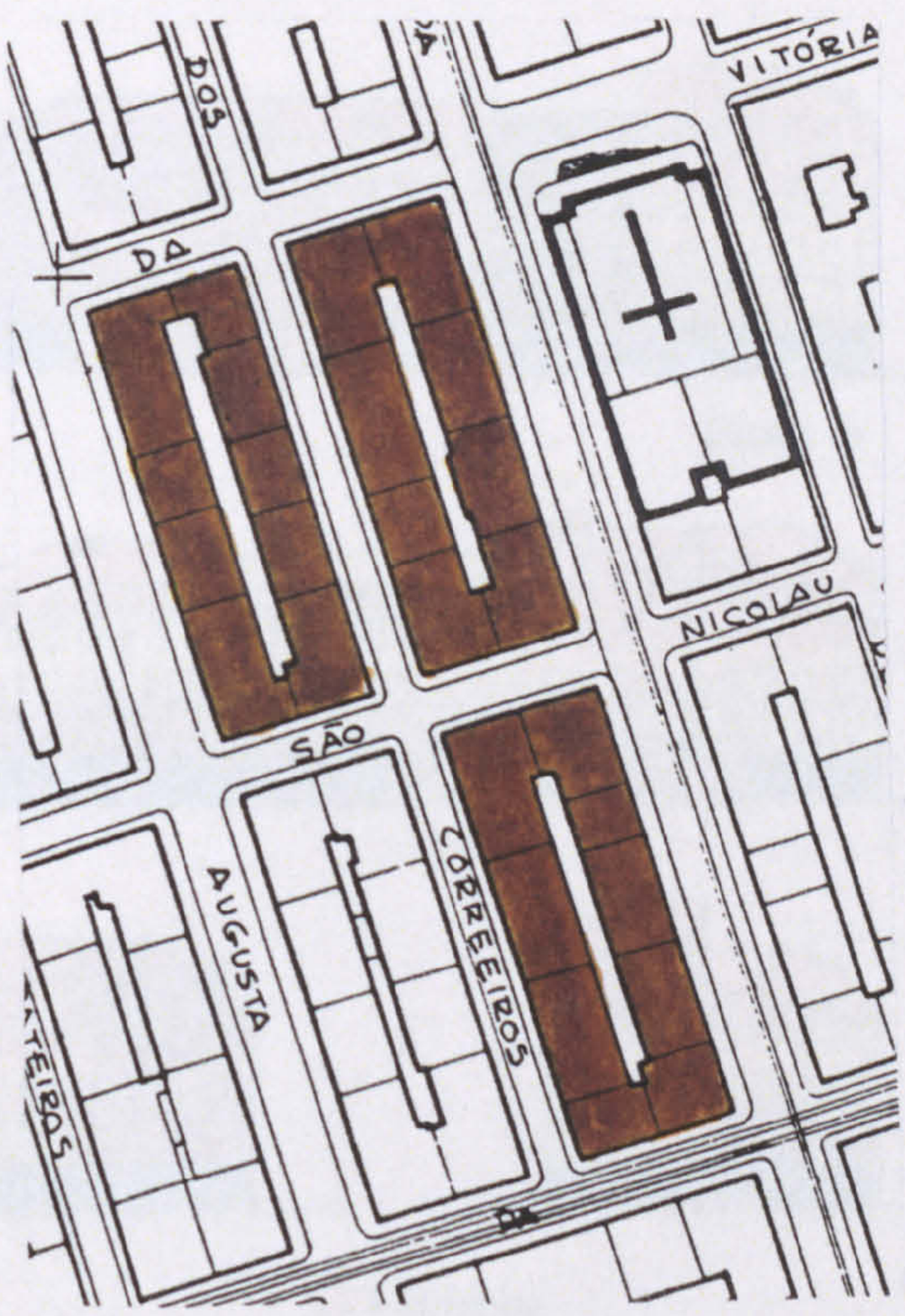
It is useful to begin by recalling that the present study adopts three distinct levels of analysis with regard to the area of interest. The first, denominated the area of intervention, is the Pombaline Plan (Area A); the second level is referred to as the blocks (Area C); while the third is the buildings (See Figure 12.1). A detailed building survey was carried out for a group of three blocks. Given the repetitive nature of the blocks in the area, these three can be regarded as a paradigmatic example from which conclusions might be derived for the Pombaline area as a whole. This is clear when a project for the blocks and buildings is presented and used as a model.

The three chosen blocks are located between two main streets, Augusta and Prata Streets and three which cross them, Vitória, S. Nicolau, and Conceição Streets plus the secondary Correeiros Street. The streets' hierarchy has already been mentioned as a determinant factor for the status and value of the blocks and their facades. This is also applied to the different types of commercial activities, offices and residences found in each of the streets. Figure 12.2 shows the three blocks, the different buildings and the present distribution of uses per floor.



Area A

Area C



Area D

Figure 12.1 The areas of intervention.

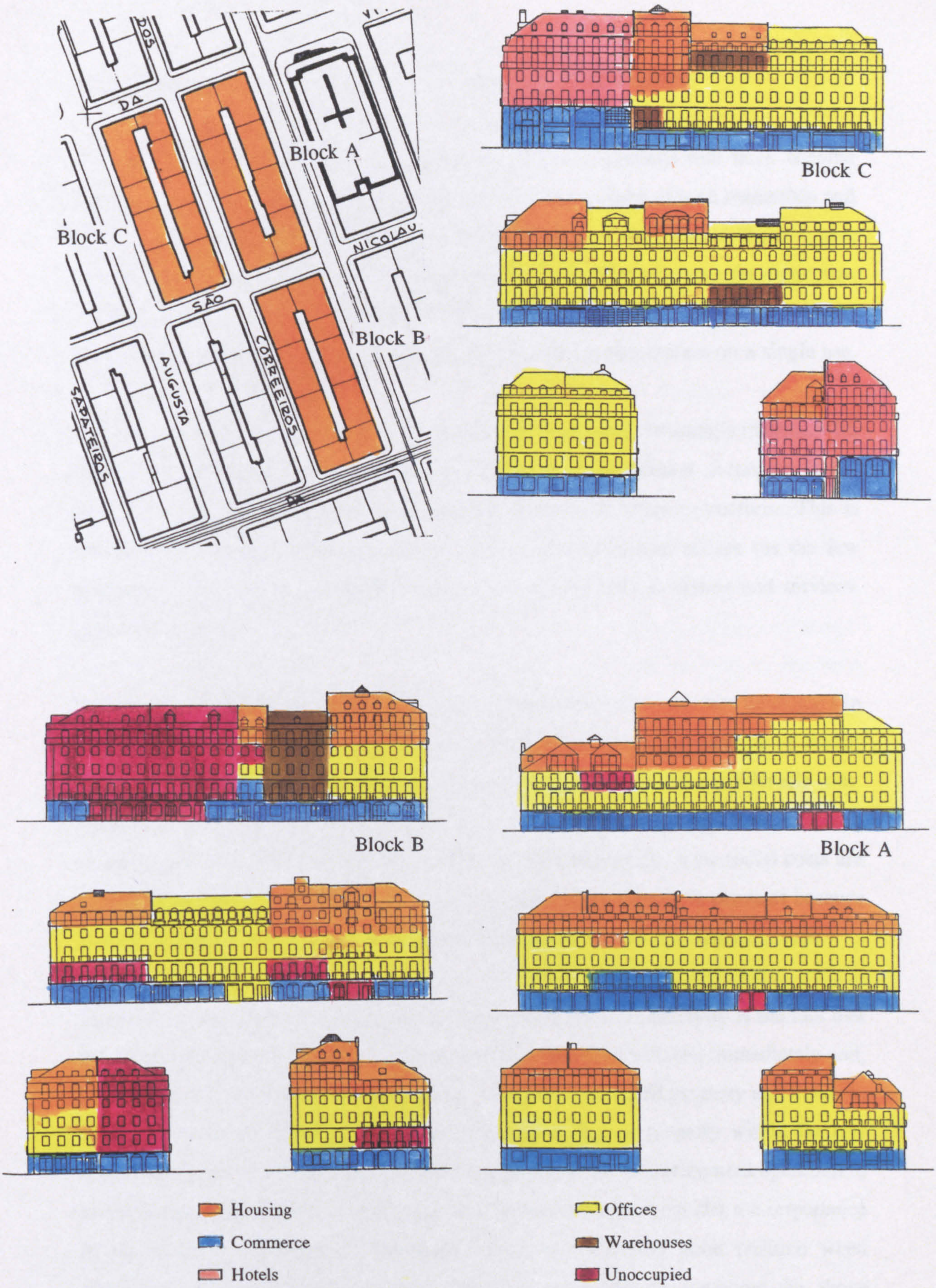


Figure 12.2 The three blocks, the buildings and the present distribution of uses per four.

12.2. Piecemeal Redevelopment *vs* Comprehensive Conservation

Piecemeal redevelopment is a natural attitude towards buildings that have become economically obsolete. It takes place within the existing pattern of land ownership and usually avoids the complex political and legal problems of unbuilt areas. It can appear to maintain continuity in a sense with the past because it often preserves the distinctive character of the city centre by retaining buildings of historical and architectural interest. It does however, tend to change the pattern of uses with concentration on a single use.

In the case of Baixa it consists of the destruction of the existing building's interior, with facade retention in some cases or more often their reconstruction according to the original design, and the replacement by a completely new interior structure. This is followed by a change in usage, basically from commercial and offices (as the few residents at the time of the redevelopment have already left) to offices and services, especially banks.

Piecemeal redevelopment is a gradual process which conforms to present tendencies in Portuguese urban planning. This attitude is characterized by the drawing up of master plans and legislation of zoning which creates single-use areas of considerable size. Those areas of urban specialisation and concentration of activities are based on profit maximization which is often confused with economic efficiency. Few social costs are usually taken into consideration and the risk of partial breakdowns is constant because in these overspecialized areas adaptability to change or to new conditions is rare.

There are, however, some forces against redevelopment. One difficulty is the fact that the existing property is a fixed commodity which cannot be replaced immediately and, therefore, there will be a delay between income returns on an old property and the new. Another obstacle is the pattern of fragmented ownership of property within the city centre and in each building, which makes it difficult for the redevelopment operation to be profitable in small size parcels. Opposed to this, one must consider the importance of the property development companies which are in a very good position when compared with the individual owner; the former are able to overcome the above problems because they usually have diversified investments enabling them to withstand

delays in economic returns. Also, such companies generally have access to large amounts of capital and a better understanding of the property market.

From an evaluation perspective, given the two alternatives, the problem becomes one of anticipating and predicting the changes in the use pattern and activity mix of the area which is likely to arise from each of the options. This of course can change due to any external constraint, such as a natural disaster or changes in planning control.

Redevelopment, therefore, tends to occur when the current financial returns from improvements drop below the potential returns available from redevelopment; returns being calculated on the basis of rental income minus expenses such as building costs, maintenance, rates and so on. Some of the buildings are in the right condition to be redeveloped, owing to their relatively low current use value and high maintenance costs; in others where there is a unified ownership. It should be assumed that some of these redevelopment proposals might be frustrated by planning permission restriction, because they involve change of use. However, permission is generally allowed by the local authorities with few restrictions being applied.

The values presented for both alternatives referred to the total of the three blocks, the ones for which a detailed analysis was carried out. The decision to use the three blocks totals and not just one of them is related to the difference they show at present, in the conservation option and on the development, therefore the group values can represent a wider range of blocks than we could find in Baixa Pombalina. The values for the Piecemeal redevelopment must be predicted. The time-frame used for prediction is twelve years, which is based on the fact that conservation effects being evaluated take at least that period, as confirmed from other experiences.[1]

[1] Other factors which will influence are: (i) The implementation of the Strategic Plan whose end point is due in 2002 and includes major road improvements; (ii) The Expo 98 event which will take place in Lisbon in an industrial area between Beato and Olivais. This will aim at the rehabilitation of this sector of the city which includes many social housing districts. Due to its international impact and its large area of occupancy the Expo 98 will have implications for the whole city; (iii) The Chiado reconstruction, which by its conclusion, together with the new underground line between Rossio and C.Sodré, with an entrance in Chiado will be the major centre of attraction to the area; (iv) Another two city council mandates; (v) Another census inquiry in 2001.

Table 12.1 shows the three blocks total floor space by activity for the piecemeal redevelopment. In this prediction for piecemeal redevelopment it is assumed that housing will remain only in the top floor of some of the buildings, that is on the fifth and sixth floor. The tendency will be for its complete disappearance, however that will take longer than the twelve years established. Warehouse and unoccupied spaces will disappear altogether being the unoccupied space at the ground level reintegrated in the commercial activity, the other in offices, reaching respectively 58.1% and 20.6%. Hotels will remain very similarly as well as the open space.

Table 12.1 Blocks, Total Floor Space by Activity (m2) for Piecemeal Redevelopment

	Block A		**Block B**		**Block C**		**Total Area**	
	Area	%	Area	%	Area	%	Area	%
Housing	1202	11.9	840	9.5	783	7.5	2825	9.6
Offices	6594	65.6	5735	64.8	4723	45.3	17052	58.1
Commerce	2136	21.2	2157	24.3	1765	16.9	6058	20.6
Warehouses	0	0.0	0	0.0	0	0.0	0	0.0
Hotels	0	0.0	0	0.0	3019	29.0	3019	10.3
Unoccupied	0	0.0	0	0.0	0	0.0	0	0.0
Open Space	116	1.15	118	1.3	118	1.13	352	1.2
Total	*10048*	*100*	*8850*	*100*	*10408*	*100*	*29306*	*100*

In Table 12.2 is presented the variation in total floor space by activity in the present situation and in piecemeal redevelopment. There is mainly an increase in office space of 104.5% and a decrease of housing area of 53.1%. A further prediction for housing will be for its complete disappear in future. Warehouses and unoccupied spaces will also disappear and will be subsequently replaced by offices. There will be no variation in the amount of open space.

Table 12.2 Variation in Total Floor Space by Activity
Present situation and Piecemeal Redevelopment (m^2)

	Present Situation	Piecemeal Redevelop.	Absolute Variation	% Variation
Housing	6029	2825	- 3204	- 53.1
Offices	8337	17052	+ 8715	+ 104.5
Commercial	5529	6058	+ 529	+ 9.6
Warehouses	2191	0	- 2191	- 100.0
Hotels	3159	3019	+ 140	- 4.4
Unoccupied	3709	0	- 3709	- 100.0
Open Space	352	352	0	0.0

Also important is the prediction of the commercial activity using its own characteristics as explained in Chapter 8. If piecemeal redevelopment is implemented the type of commercial activity which increases will be the personal and domestic use goods along with food and catering services.

The alternative of Comprehensive Conservation aims for the re-utilization of the existing architectural heritage through restoration and rehabilitation. Emphasis is put on better living conditions and promotion of the establishment of community facilities. Its objective for the historic centre is to moderate the growth of the tertiary sector and the reintegration of housing if possible with the development of housing policies, including a large number of housing alternatives, low cost-units among them. Easing of congestion in the central area by the avoidance of major employment and traffic generators is also stressed. A plan is developed and safeguarding measures are established. Basically, it represents a positive and deliberate attempt to keep what is of value in spite of the inevitable pressures of redevelopment.

12.3. A Proposal for Comprehensive Conservation

The following proposal for Baixa shows a combination of official consideration regarding the appropriate future of the central area and the values and aspirations of the

various groups involved or affected by the plan. The proposal's major objective is to achieve a heterogeneity and integration among people, activities and buildings.

The effect of the mixture of new uses created by a the comprehensive conservation policy approach is anticipated, obviously including the reintegration of residential premises, in the light of current market conditions and in support of the idea of a better urban system in which stability, integration, flexibility and variety are the components. The developer of the Baixa believes that offices are the most profitable space use, together with the large areas of shopping which have already been used in the Chiado reconstruction.

12.3.1. Conservation Area

Delimited conservation areas are important instruments for the local authorities. They are a weapon that can be used to help preserve the character and appearance of their best areas. (The legal aspects of a conservation area are discussed in Appendix 5). However one must recognise that local authorities and central government still aim (and perhaps will always aim) to implement roads, sewers, hospitals, schools and shops, rather than conserve historic buildings. Therefore one has to have special skills to ensure the possibility of conserving buildings, or converting them to new uses, and that whenever a new intervention is needed it should be compatible with the existing surroundings. Conservation areas can be much more effective, in social and economics terms, than the single 'listed building'. Such areas safeguard the preservation of an urban area which by itself sustains the single listed building surroundings, without which it would lose much of its significance. Listed buildings are in effect a rather complex area of planning law, because of the conflicting pressures of conservation and redevelopment.

Following Carlo Cesari's suggestion (while writing against historic area limits and arguing that since the stratification of a town is a continuous and contemporary process which involves every part of the entire urban area as it grows and evolves), it seems that the identification of a cultural border based on architectural evidence is needed, because it will facilitate implementation of a proposal.

There have been several experiments concerning the many systems of classifying areas into flexible zones, depending on the degree of intervention required. Roy Worskett[2] presents a method based on the Civic Amenities Act in the United Kingdom. For him the designation of a compact, contiguous conservation area is a better solution than that of separate areas. His classification would be complemented with several maps establishing different actions and different priorities, for example distinguishing areas of strict preservation with little new development from areas where a large amount of new development would be acceptable. However, when other factors arise such as socio-economic or cultural ideals, this method must be supplemented by further superimposed maps based on other criteria.

Sherban Cantacuzino gives another approach, very direct and simple, by identifying three kinds of areas: [3]

(a) Conservation areas for special protection and for which a few well defined ground rules must be laid down to control alterations and new development.

(b) Areas adjacent to conservation areas in which the height of new development would be controlled to protect the conservation areas and monuments of the city from intrusion.

(c) Areas beyond and far enough away to allow any development which complies with building regulations.

This system needs the identification of various zones with different types of intervention and diverse degrees of control. When the area has been analyzed in all its cultural, historical, socio-economic, and political aspects it is then easy to use.

For Baixa Pombalina one could determine present delimitations from two angles: that which was put forward in the proposed 1755 Plan; and that which was actually built. Many reservations arise with regard to the latter because one can stop at the level of the Pombaline buildings or at the Pombaline plan, and it is known that both extended throughout the city. Lisbon's reconstruction was not restricted to the central area but

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[2] Worskett, R., The Character of Towns, The Architectural Press, London, 1969, p.235-258.

[3] Sherban, C., 'Blueprint for Conservation in the Third World', Mimar, n.24, June 1987, p.19-25, (p.21-22).

also extended to new residential areas and the reconstruction of others.

In the present work the ward borders are used to delimit the area of intervention, even through this area is only a portion of the Historic Centre. These borders form an administrative city division, sometimes too rigid and illogical (for instance, it splits in half the Pombaline quarters), but at the same time one is drawn to this delimitation for reasons of data analysis. Both the Census and Municipal statistics are grouped by wards. This administrative city division is used by the City Council and all Planning Departments. Therefore it would be impractical to choose an alternative delimitation.

It is useful to delimit three areas for the current proposal. *Area 1* is where conservation is to be carried out and for which general principles and rules must be established and implemented. *Area 2* refers to those areas adjacent to the conservation zone and with the area established by the City Council as of historical interest in the 'Heritage Charter for Urban Nucleus with Historical Interest' approved in July 1991. In this Charter specific regulations are proposed for each area. *Area 3* refers to ones already distant from the conservation area and for which different regulations should be determined.

Action is planned to be most intense in four sectors; (A) The Squares, which includes the three squares: Rossio (i), Figueira (ii) and Comércio (iii); (B) The Central Gridiron, which comprises the area of which three blocks were studied in detail; (C) The River Front, which covers the fringe which frames Comércio square and; (D) The Adjacent Areas, including those surrounding the main central Pombaline plan. (see Figure 12.3).

In each of these sectors conservation and rehabilitation are to be prominent, the major feature being the infusion of a mixture of new uses designed to reflect the continuing role of Baixa as an integral part of the central city area, with the objective of allowing the area a larger role as a place of residence. It is envisaged that extra facilities, such as entertainment, arts and public activities. will be provided The differentiation among the sectors is suggested through their specific characteristics and potential for a specific use.

Figure 12.3 Proposed areas for intervention.

Thus, for sector (A), and specifically for Rossio and Figueira squares, *urgent action* is required; for Comércio Square the action envisages *protection and care.* The goal is to keep the character of each of the squares through the retention of their urban and architectural attributes. The introduction of a package of mixed uses for the buildings with emphasis on housing, for (B), and *first aid action on serious defects* is required For (C) the aim is to rehabilitate and redevelop admitting replacement, either for the area users or for the whole city. This is considered as an *opportunity area.* For sector (D) the action is for *control and moderate action*, and integration with the conservation area is proposed. However it is necessary to discuss and indicate solutions for more general issues such as land uses, traffic and transportation that are implicated, (see Figure 12.3).

12.3.2. Land Uses

The first consideration, apart from the integration of land uses in the city centre, is the revision of the concept of separation of land uses. The validity of land use separation is questionable because separation is based on one of two criteria: environmental incompatibility, and socio-cultural prejudices and attitudes. This implies dominance and specialization in opposition to the diversity which is the main factor in keeping and ensuring flexibility and adaptability in an urban system. Diversity is a way of increasing control of the social and physical environment in order to achieve a safeguard against natural disasters or unexpected events. An urban community based on diversity with a balanced economic and political system is a more agreeable and fairer one in which to live. Opposed to this is the overspecialized city controlled by some sectors of the society; this is more likely to suffer periodic crises due to the unbalanced concentration of power, incompatibility and segregation.

The Local Authority should consider these questions and establish a comprehensive scheme for the conservation of Baixa because the pressure for rebuilding the area with a single use, i.e. offices and commercial, should be controlled in the public interest. The authority has a responsibility to correct the condition of what is regarded as bad and obsolete housing and offices, unsuitable for present day needs. However, there must be criteria based on precise principles and goals. The Authority is in a good position to

guide natural economic trends by directing and controlling demand so as to ensure the fullest environmental benefit.

Land use, while determining zoning, implies a legislation of environmental quality; however, it is more difficult to define cultural quality. It is then important to include the necessity for a cultural evaluation. It is arguable that when a cultural consensus is achieved, legislation on quality will not be necessary.

It must be accepted that one of the reasons for the decay of the city centre is the land use separation. Thus, in order to make progress towards its conservation this has to be changed. One way to achieve the integration of land uses is to reduce progressively the size of the areas under single-use classification. This will result in a complex pattern of uses and a revision of zoning as a long-term strategy. Another way of progressing could be the implementation of 'packages' of mixed land uses that are compatible and complemented by design guidelines, thereby permitting people to make their own decisions within these frameworks.

The proposal for Baixa concerns the introduction of packages of mixed uses which will be injected into the area as a long-term strategy. These should begin as soon as action for conservation starts. There has to be a time allowance for this change because there will be a replacement of one use for another in accordance with the main aim for the area, i.e. the reintroducing of housing. Housing will be the key element in the revitalization in the area, thus giving back life to the area, but it will also determine the existence and the extent of other uses.

Except for expensive accommodation which is free from rent control, private developers are generally only interested in residential development for immediate sale to owner-occupiers. However, the market for good residential accommodation in the centre has not been developed and it seems that developers, while facing comparatively high acquisition costs, have chosen other areas of the city. The city council should set an example, leading the way and encouraging others to follow. Every effort should be made to encourage people who wish to live in the centre, and this can be done by improving the environment and facilities, and by giving planning consent for residential

development there rather than in the newer perimeter areas.

The proposal provides, along with an increase in residential accommodation, for the redevelopment of the existing offices and commercial activities and housing rehabilitation. The ground floors will be for commerce, the first for a mix of commerce and offices, the second for offices and the rest for residential use. This would involve the displacement of some tenants, which will mean considerable financial and even psychological cost. With respect to housing rehabilitation and conservation, this is inevitable in most cases, since many lack basic requirements. However, if possible one should aim for the retention of those groups of buildings generating the Pombaline plan, which contribute to the character of the area. The rehabilitation of offices is also needed; those which have not received a recent upgrading and are functionally obsolete for modern requirements. With regard to commercial activities, rehabilitation and conservation is proposed with progressive change in the type of activity, supporting the new residents.

Table 12.3 Variation in Total Floorspace by Activity for the Present situation and Proposal (m^2)

	Present Situation	**Proposal**	**Absolute Variation**	**% Variation**
Housing	6029	10117	+ 4088	+ 67.8
Offices	8337	7765	- 572	- 6.9
Commercial	5529	6928	+ 1399	+ 25.3
Warehouses	2191	0	- 2191	- 100.0
Hotels	3159	3027	- 132	- 4.2
Unoccupied	3709	0	- 3709	- 100.0
Open Space	352	1063	+ 711	+ 202.0

Table 12.3 shows the variation in total floorspace by activity, in the three blocks for which a detailed study was carried out. It is possible from this example to transfer the achieved results in the three blocks to the whole area, as there is a similarity in the blocks and of the problems to be solved. The total area devoted to housing would be increased by around two thirds; offices would decrease by 7% and commercial use

increase by around a quarter. Warehouse use and unoccupied space disappear altogether in the proposed alternative. There is a significant increase in the open space areas which would increase threefold.

12.3.3. Traffic and Transport

The city has its own problems directly related to its historic pattern, social and economic activities, but in general the proposed solutions for traffic problems will vary in their rigour depending on the volume and speed of the flow. Two basic measures can be taken:

1. Reducing the flow of traffic by diverting it away from sensitive areas to other routes (existing or new).
2. Removing the source of the problem in terms of moving the location of the traffic generators or attractors.

The most reasonable method would be to avoid any generation of demand by concentrations of individual car traffic which cannot be satisfied, by means of land use and city planning and methods of re-organisation. It would also be possible to influence the flow of traffic in different parts of the city by adjusting: a) the location of activities, including that of travel itself; b) the time at which activities are carried out; c) the mode of travel including the total amount and location of space devoted to that mode. Parking areas as well as roads, and the times at which that mode is available, or buses only in the peak hour and twilight servicing are examples.

Traffic and transport problems can only be solved if treated as subordinate to an over-riding town planning policy. This applies to Lisbon as to any city. Within the city centre the immediate solution would be to control capacity, and only then will the reintegration of housing be possible. The use of the motor-car must be checked and reduced in order that it can be exchanged for a mode of transport which needs less space, namely public transport (tram, bus and mini-bus). To transport 1000 persons, it is necessary to use one train, or ten trams, or twenty buses or 1000 cars. This new type of centre comprehensively conserved requires public support in the provision of transportation as a community facility. Public movement would be emphasized through

linkages with metropolitan systems and the development of parking, and garages at entry points.

The adopted parking principle should be to concentrate vehicles in multi-decked parks around the city centre, smaller ones in the centre and open parks along the River Tejo bank. The promotion of the existing multi-storey car park in Restauradores is proposed along with the expected area at Martim Moniz with 17.151 sq.m. for public parking, and 13.088 sq.m. for restricted parking). New multi-storey car parks are proposed, one as far away as C. Sodré, the other at Santa Apolónia station, especially to support movement towards the north and to Cascais. Other areas for this same use are proposed at Largo do Corpo Santo and Campo das Cebolas to replace the present area used in Comércio Square. Each of them would have a multi-storey car park for a total of 12000 cars.

Various levels of multi-storey car parking tariff should be predicted, including short and long term business visits and for service to buildings in the area, for long term parking for people working in the area and short term parking for evening entertainment, at the theatre, for example. Offices and shops should provide spaces for their employees who must then use spaces in multi-storey car parks because they will not be able to have their own private spaces in the city centre , nor to park along the street frontages. The residents will be allowed to park along the secondary streets and the transverse ones in the blocks by the river; however there must be some restrictions on this type of parking during the day. Giant vehicles used for deliveries should not be allowed into the city centre, and a time table for deliveries should be introduced.

Other measures to minimize parking problems are:

1. Pricing based on hourly rates, in order to ensure that there are empty spaces at all times of the day. If this is not done, drivers searching for an empty place could cause congestion.
2. The introduction of peak hour surcharges.
3. Developing a balance between the supply of on-street and off-street spaces.
4. Introducing the use of residents parking permits.

5. The introduction of licensing of public off-street car parks so that they are operated according to the transport planning authority's control policies.

6. The conversion of non-operational private non-residential car parks to public control or non-parking uses. This might involve the levying of a special tax on these spaces.

7. Another possible type of solution is the one used at Amoreiras shopping centre where businesses are financing parking provisions in order to promote the shopping-centre. This plan assumes that anyone who parks a car is very likely to shop there.

However, for the previous proposals to achieve the construction of multi-storey car parks and the clearing of the central area, a good interconnection is necessary with the public transport systems and with pleasant areas in which to walk. Therefore a connection is proposed between the three railway stations, Rossio, C. Sodré and St. Apolónia, either by special buses or by electric trams which are already planned for the area along the river. The underground extension from Rossio to C. Sodré will reduce the existing movement, both of pedestrians and motors, through Baixa.

A new bus terminus for private touring coaches should be projected for the area adjacent to St. Apolónia. This would include facilities such as indoor waiting rooms, luggage, toilet and rest rooms, a well-run information desk for the time table (bus, coach and rail) and tourist enquiries.

Traffic will remain in all existing streets with some changes in the three main squares and adjacent areas. The one-way system will continue in most of the area; however, speed will be reduced in order to keep down levels of pollution. Figure 12.4 shows the proposed traffic alterations and restrictions; the location of parking spaces; new green spaces and the pedestrian areas.

The major alteration is the removal of traffic from Infante D. Henrique between Largo do Corpo Santo and Campo das Cebolas, leaving Comércio Square almost entirely free for pedestrians. A tunnel is proposed for the area and the only traffic allowed would be the trams and public transport in the direction towards Rossio and Figueira squares.

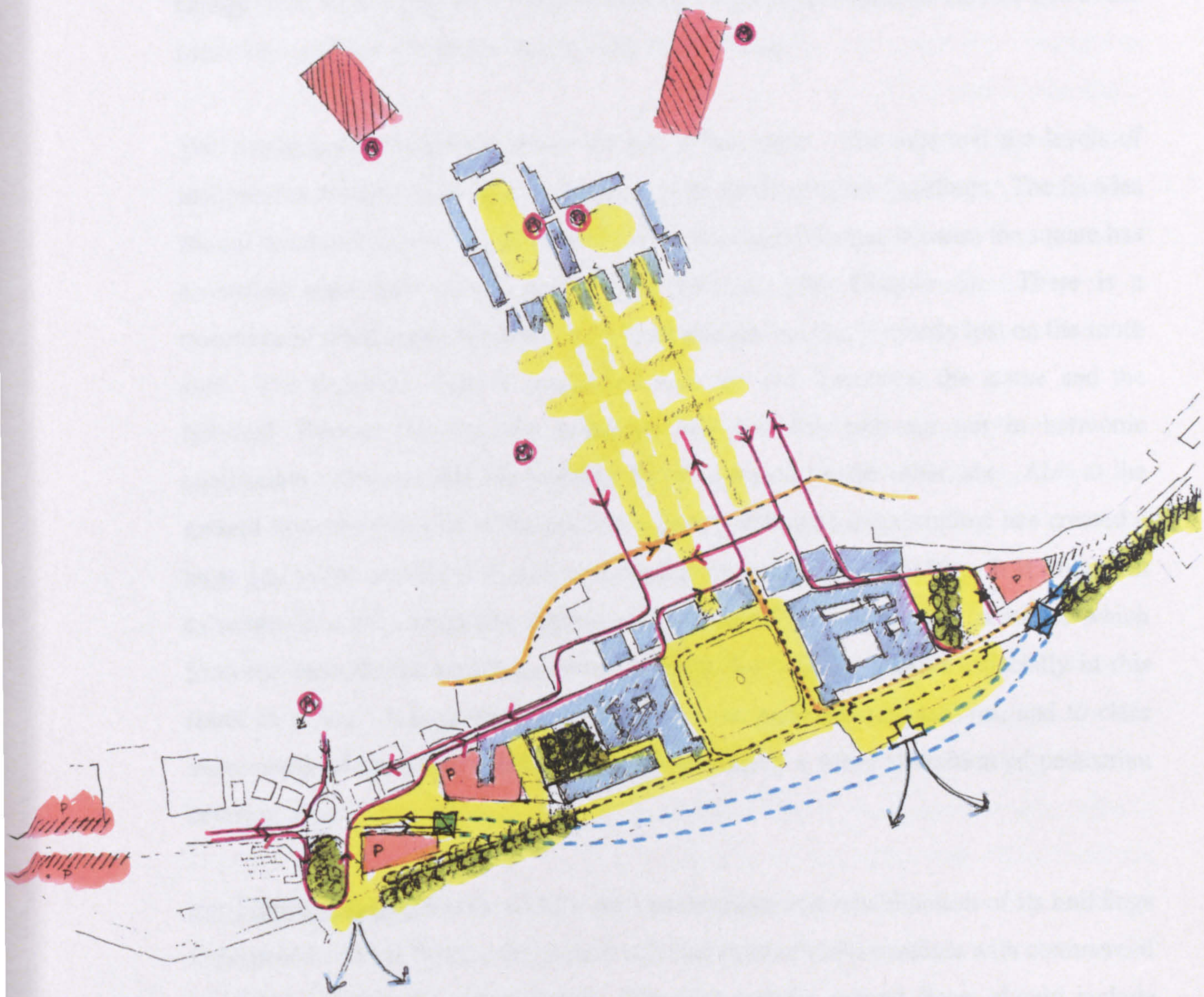


Figure 12.4 Traffic and parking proposals.

12.3.4. The three sectors

For Rossio Square, Sector (A)(i), conservation and rehabilitation of its buildings is proposed. The ground and the first floors should be kept for commercial activities which could be of special and personal supplies and food services, related to the public square and its importance as the main central square. It is a meeting space and the busiest square in the city. In order for it to remain so, it is necessary to guarantee the presence of commercial activities, such as the few traditional cafes which could also change their working hours to support activities such as the National Theatre and at the same time provide life in the square until late evening.[4]

The remaining floors should be devoted to office space. The uses and the levels of intervention must be controlled in harmony with the Pombaline buildings. The facades should be rehabilitated as far as possible, to their original design, because the square has a unified scale and special architectural features, (See Chapter 6). There is a symmetrical relationship between the four elevations, but that is mostly lost on the south side. The Bandeira Arch is centralized with the two fountains, the statue and the National Theatre, but the two buildings that join the arch are not in harmonic equilibrium. On one side the building has five floors, on the other, six. Also at the ground floor level in one of the corners a greatly enlarged shop window has created a large gap in the architectural pattern, breaking the base of the building. It is important to reintroduce the Pombaline rhythm at the level of the commercial activities which form the base for the building, and to stabilize the building heights especially in this south elevation. It is proposed to reconstruct the main central platform, and to clear away many of the improvised kiosks, thus providing a better definition of pedestrian crossing areas.

For Figueira Square, Sector (A)(ii) the conservation and rehabilitation of its buildings is proposed. As for Rossio, the ground and first floors should continue with commercial activities, keeping the square lively. The first and the second floors should include

[4] The change of opening and closing hours should be revised for all the cafes, snacks and restaurants in order to support either the ones passing by but also the future residents. At the moment the closing day for the restaurants is the Sunday because the area is completely abandoned, and their business depends on the working population of the area.

health, public services and education facilities. The third and fourth could have offices, but where housing already exists, it could remain.

At present the square is used as a meeting place with an outside café on one side, a central area used for pedestrian crossing and a bus terminus. These should remain and better urban furniture should be designed for the square. The central platform could also be used for the esplanade's extension with the reduction and control of the existing pigeons.

The intervention in Comércio Square, Sector (A)(iii) needs to be planned in conjunction with the riverfront area. As was previously mentioned in Chapter 5, this square has a different character from the others, being built as a monumental space expressing the Royal magnificence. It is, in fact, a square to be looked at, a place to cross over and not a place to stay. It is also a space which introduces the Pombaline area if one is arriving by boat from the other side of the River Tejo, or in the opposite direction a space leading to the splendid vista of the river and the sea.

It should remain as that, giving the site its original feeling of an entrance hall. It is proposed to conserve and rehabilitate its buildings, introducing new uses such as cultural activities. The existing Ministries should be moved, giving the buildings and the place a more appropriate use according to the square's importance.

Theatres, art galleries and museums should be located here. The interior courtyards must be revitalized, supporting the cultural activities established in the buildings. In this way anyone could use this square, not just its open space but also its built area, but for that use, it is necessary that the traffic should be removed from the riverside (Infante D.Henrique Avenue) in order to allow enjoyment without a frontier. Bus terminals should also be removed from the side of the north elevation by the Augusta Arch and the only traffic allowed should be the trams (with their terminals).

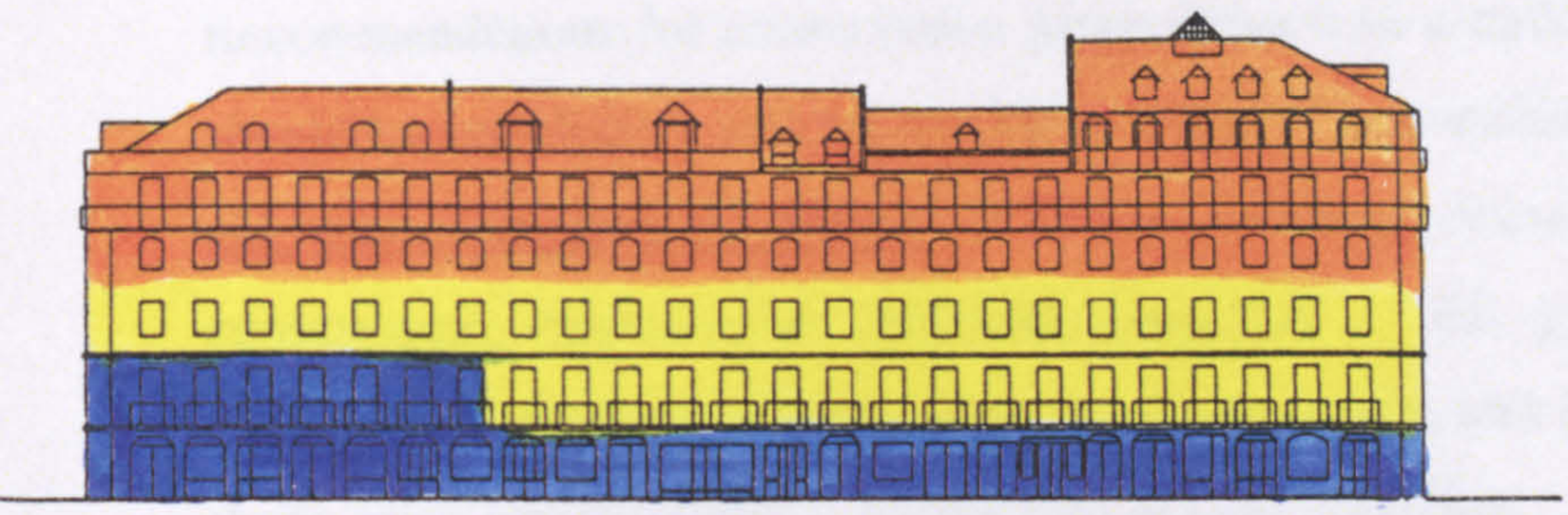
For the implementation of this proposal it is necessary to postulate the construction of a road tunnel which should have one entrance as far away as Cais do Sodré and the other between Chafariz d'el Rei and Campo das Cebolas. In this way all the main

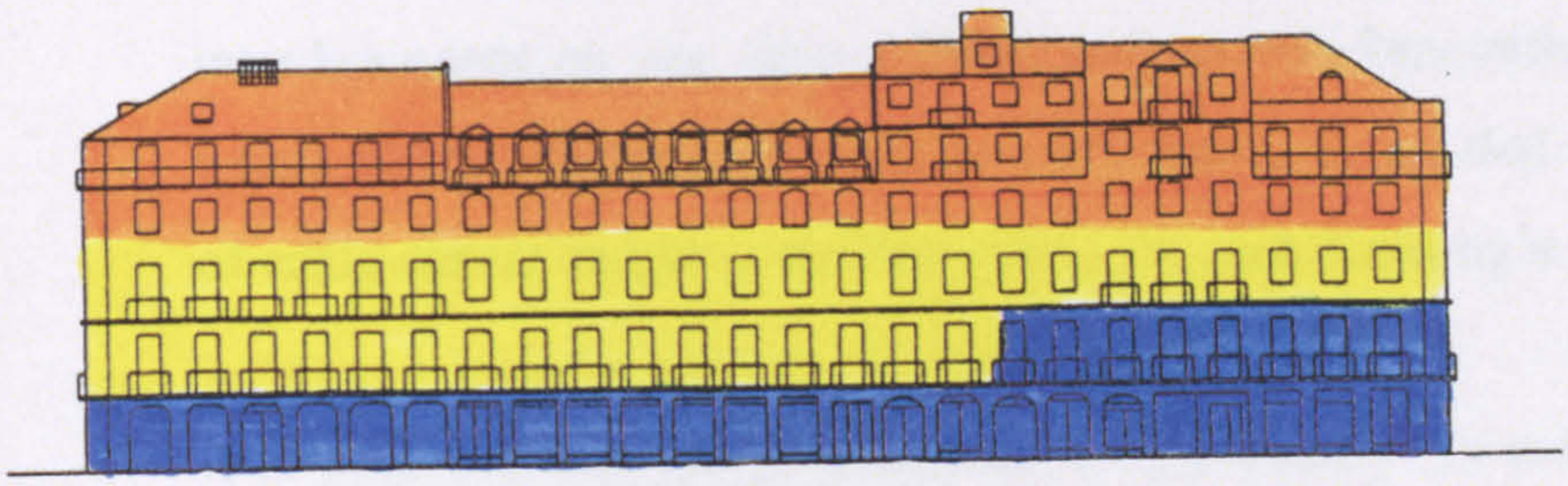
heavy traffic which daily crosses Comércio square would go beneath it without disturbing the area. The tunnel would need sophisticated technical requirements as the area is part of an earthquake zone. Together with this measure, it is proposed to remove the central platform for parked cars and organise parking space in the other area. Little other work would be needed apart from the repaving of the central area and improving both the lighting system and the seating places.

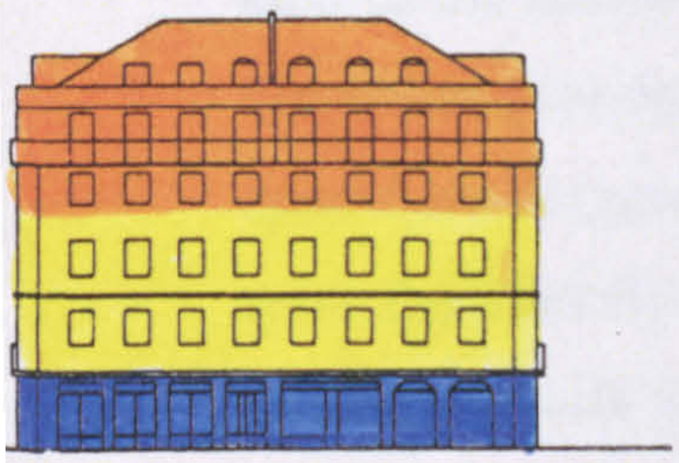
One is able to see from this group of interventions that the proposals for the three squares and the riverfront are mostly in accordance with the intentions expressed in the Pombaline Plan.

With regard to the Central Gridiron Area, Sector (B), it is proposed to increase the amount of residential floor area. It is the quietest zone and thus most suitable for the reintroduction of housing. However, to achieve this aim several problems and limitations must be solved including the buildings' rehabilitation in a mixed use of housing, commerce and offices and the need for a neighbourhood with its own essential amenities.

There is however a sub-area to consider (B1), which makes the transition from the main central area where residential use is to be the main activity, although side by side with the offices and commercial uses, to the Comércio Square and the River Front. This area is clearly seen in the plan as the blocks have a 90 degrees rotation, thus their longer side is parallel to the river. It is proposed to retain a similar situation to the one found presently, except for the reintegration of housing in the blocks bordering the central gridiron (B). The other side will be maintained mainly with banks' headquarters, using the whole block area. Works of conservation and rehabilitation for some of the buildings are proposed, especially for those not owned by the banks where recent works have been carried out.







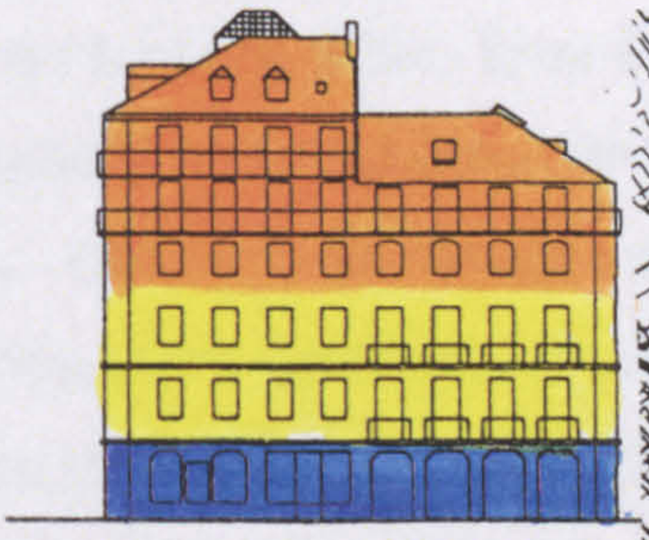


Figure 12.5 The proposed distribution of uses in the buildings and in the plan.

Recommendations for conservation action related to a building's condition and value should be established, and for that three levels of intervention are determined: (i) first aid action on serious defects, in those buildings revealing serious problems of conservation, maintenance....physical, functional..; (ii) urgent attention to adverse conditions in buildings deteriorating in whole or part; and (iii) protection and care, in those cases which exhibit a satisfactory overall condition.

The proposal for the conservation of a building should be thought of in conjunction with the conservation of the block to which that building belongs, because they are interdependent on one other. What is proposed here refers to the conservation of a whole block. However it must be taken into account that several intermediate phases of achievement might occur depending on each building's specific problems.

It is proposed that the ground floor should remain for commercial activity, but food retail and personal services should be introduced to support the residential population. The first floor could have a mixed use of commercial and office space. The second will be devoted to offices, the third and higher for residential use. (See Figure 12.5) This kind of use distribution in the building differs from that previously established by the Pombaline plan because originally the building was developed entirely for residential use apart from the ground floor. However, this design was hardly ever followed and very soon the first floor also became commercial. What is proposed, more or less in accordance with the original plan, is the differentiation in distribution of commercial activities along the three types of streets. For the main streets special and personal supplies are planned. For the secondary and cross streets, food retailing and services, along with personal services and supplies should prevail; as those streets should have a more private character supporting neighbourhood amenities. It is important in relation to neighbourhood amenities to consider the necessity of providing a private or semi-private open space for the future residents in each block or in groups of blocks. (See Figure 12.5)

For the reintroduction of housing in these buildings, a major intervention is necessary to achieve present day habitability requirements. The building plans are all different and show varied levels of maintenance, but there is a similarity in the kind of problems to

be solved. These are on two levels, functional and structural. The functional problems are mainly salubrity, access and circulation, privacy and security; the structural ones deal with conservation problems and the introduction of toilets, kitchens and electrical services. What is proposed here is a building arrangement which can be developed from a use 'package model'.

The most progressive alteration to the building and the block structure is the proposal for a large cut in the interior in order to solve functional problems. (See Figure 12.6). The building will have a reduction in construction area from the third floor upwards, where residential use is included in order to provide the necessary conditions of ventilation and privacy. An increase in floor area for the other three floors below the residential ones is proposed through the occupancy of the existing lightwell, because commercial and office use can function without direct natural light or ventilation.

A model for the new blocks is proposed which comprises in its transverse section two flats of eight metres long and a courtyard in between, also with an eight metre transverse. This measurement results from the minimum area required for a dwelling and from the existing structure of the building. A new interior facade will be built, and the proposal is for a frame which will allow for the existing different floor levels to be attached without structural problems. This frame should follow the Pombaline rhythm used in the exterior facade and will permit the use of new materials. It will support the introduction of toilets and kitchens which will face the interior of the courtyard as well as the introduction of elevators next to the staircases. The proposed frame will go through the first three floors, cutting through the office and commercial spaces and will have its structural pile foundation at the level of the existing one. A courtyard at the third level would be provided for the residents, and would develop as the rehabilitation of the other buildings is completed finally reaching an average of 354 square meters.

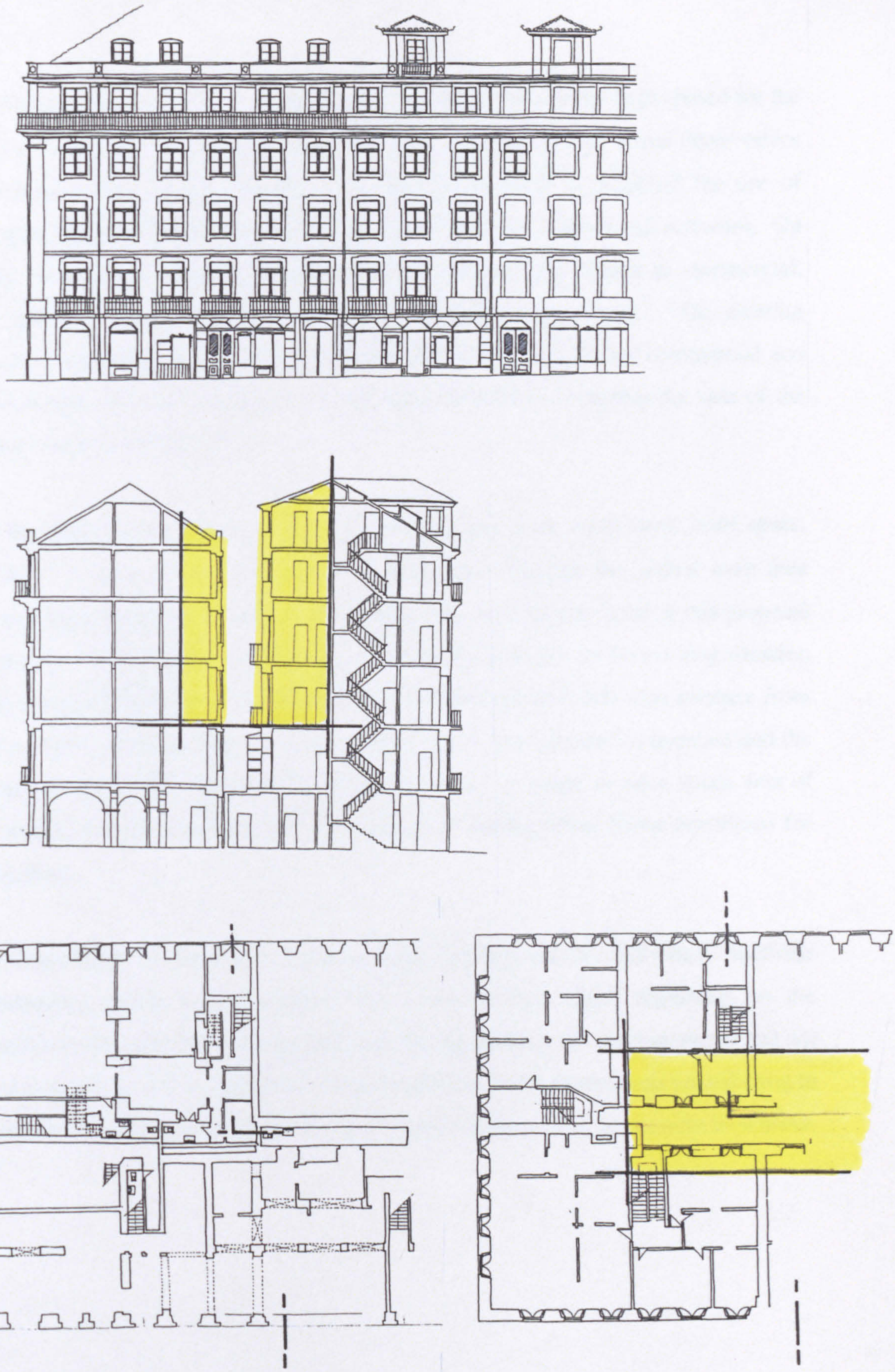


Figure 12.6 The proposed intervention in the buildings.

The following Table 12.4 shows three blocks' floorspace by activity as proposed for the three blocks studied. Comparison should be made with Table 12.5 where those values are referred to the present situation. At the ground level is proposed the use of unoccupied area of 859.5 square metres plus open space for commercial activities. On the first floor the area used as warehouses and industry will change to commercial, while space for storage will be provided at the back of the shops.[5] The existing unoccupied area, will provide 973 square metres for offices, 1727 for commercial and 495 for hotels. The second floor is mainly used for offices, excepting the case of the building where a hotel exists.

From the third floor upwards, residential use will take over, apart from hotel space. Here there is an increase of 67.8% in useable area, although the virtual built area decreases from 29.306 to 28.900 square metres. The total area devoted in this proposal for housing is 10.117 square metres, which is a 35.0% increase; in the existing situation it only reaches 20.5% as seen in Table 12.4. Commercial activities also increase from today's 18.8% to 23.9% in the proposal. Office space was intended to decrease and the proposal achieves 7%. Along with this it is possible to create an open space area of 1063 square metres, in the interior of the block, providing better living conditions for the residents.

The achievement of the block's conservation depends on the individual buildings rehabilitation, which in this specific case is in the first phase dependent on the interaction to the opposite building that is the facing building (in the transverse) and not so much on the next-door neighbour, because without both interventions contributing to the interior gap, the minimum standards of living conditions are impossible to achieve.

[5] It is important to note that warehouse and small industry use is found in the building up to the fifth floor. They exist because those floor rents are very low due to the poor maintenance conditions of the buildings, but they are areas of danger because of the large quantities of materials stored there.

Table 12.4 Blocks, Total Floorspace by Activity (m2) for the Present Situation

	Block A		**Block B**		**Block C**		**Total Area**	
	Area	%	Area	%	Area	%	Area	%
Housing	2466	24.5	2657	30.0	906	8.7	6029	20.5
Offices	1600	15.9	2491	28.0	4246	40.7	8337	28.4
Commerce	1979	19.6	1785	20.1	1765	16.9	5529	18.8
Warehouses	930	19.6	907	10.2	354	3.4	2191	7.4
Hotels	0	0.0	140	1.5	3019	29.0	3159	10.7
Unoccupied	2957	29.4	752	8.5	0	0.0	3709	12.6
Open Space	116	1.15	118	1.3	118	1.13	352	1.2
Total	*10048*	*100*	*8850*	*100*	*10408*	*100*	*29306*	*100*

Table 12.5 Blocks, Total Floorspace by Activity (m2) for the Proposal

Comprehensive Conservation

	Block A		**Block B**		**Block C**		**Total Area**	
	Area	%	Area	%	Area	%	Area	%
Housing	4180	42.5	3093	35.0	2844	27.6	10117	35.0
Offices	2762	28.1	2919	33.1	2084	20.2	7765	26.8
Commerce	2488	25.3	2331	26.4	2109	20.5	6928	23.9
Warehouses	0	0.0	0	0.0	0	0.0	0	0.0
Hotels	0	0.0	130	1.4	2897	28.2		10.4
Unoccupied	0	0.0	0	0.0	0	0.0	0	0.0
Open Space	384	3.9	343	3.9	336	3.2		3.6
Total	*9814*	*100*	*8816*	*100*	*10270*	*100*		100

From the plans presented in Figure 12.5, one is able to conclude that even with the break in the interior facade which is a structural element and the introduction of toilets and kitchens the building is kept as much as possible in its present typology. Thus conservation and rehabilitation are the two fundamental concepts applied to the Pombaline buildings.

The Riverfront sector, Sector (C), which in this case goes from Cais do Sodré up to Chafariz d'el Rei, must be considered in conjunction with Comércio Square. The space should be devoted to pedestrians and parking spaces must be limited. From previous interventions in the area, i.e., the Campo das Cebolas and the sidewalk by the river, one can gather that these plans failed because the continuity with the urban system was not ensured.

The rehabilitation of this sector of the river front is of primary importance. To achieve this goal the removal of heavy traffic from the area adjacent to Comércio Square is the first step. Pedestrians should be given priority and in order to do so it is necessary to construct a side walk by the river connecting the main square with Cais do Sodré railway station. It is proposed to open up a wall in this sector which delimits and divides the Navy headquarters from the Infante D. Henrique avenue. In between this area and the square, the construction of parking spaces, commercial activities, food services and leisure facilities is proposed. The whole entity will then become a built-up area with a new facade facing the river and providing a continuation of the left side of Comércio Square.

12.4. Major differences between the two approaches

Finally, Table 12.6 presents a comparison between comprehensive conservation and piecemeal redevelopment. It can be clearly seen that the redevelopment and the conservation schemes involve substantial different increments in certain types of use and large reductions in others. For example, offices rise from their present space occupancy in the piecemeal redevelopment to 58.1% and in the comprehensive conservation it decreases to 26.8%. In contrast, housing increases 35% in the conservation and fall to 9.6% in the redevelopment. Additionally the open space will increase 3.6% in the

conservation plan.

Table 12.6 Floor Space by Activity in Comprehensive Conservation and Piecemeal Redevelopment (m^2)

	Comprehensive Conservation		**Piecemeal Redevelopment**	
	Area	%	Area	%
Housing	10117	35.0	2825	9.6
Offices	7765	26.8	17052	58.1
Commercial	6928	23.9	6058	20.6
Warehouses	0	0.0	0	0.0
Hotels	3027	10.4	3019	10.3
Unoccupied	0	0.0	0	0.0
Open Space	1063	3.6	352	1.2
Total	*28900*	*100*	*29306*	*100*

There are two major differences between the approaches, Piecemeal Redevelopment and Comprehensive Conservation: one is the different method of implementation, and the other is the choice of uses of the two schemes. In comprehensive conservation it is necessary to have a plan, scheduled in phases dealing with a large number of premises in which each phase is dependent upon the others completion. Therefore in order to achieve the results a long term period is necessary. By contrast, piecemeal results are almost immediate, because the area of action is very limited if compared with the comprehensive conservation, which arises one or two premises. The amounts of constructed area will also change; in the redevelopment the values change very little, but with conservation that value will be reduced by 1063%, but on the other hand there is an increase by 202% in private space, in the interior of the blocks.

If piecemeal redevelopment is used:

* Redevelopment is left to private developers, concentrating on uses such as offices, which would have the serious effect of reducing the existing population in the area, the

surrounding areas and the whole city.

* Pressures upon small businesses to leave the area would increase.
* Piecemeal redevelopment would destroy the character of the area.
* Redevelopment would take place in the existing space for office use. (banks)
* Most of the buildings would be redeveloped in the future.
* It is assumed that with this alternative most residential use would disappear from the area.

A scheme of financing and implementing the Conservation Proposal is presented in Appendix 5. This aims to search how other countries deal with legal and funding issues within conservation. In the following chapter we aim to provide an analysis and evaluation of the costs and benefits for different sectors of the community in relation to the two options, - comprehensive conservation and piecemeal redevelopment.

Chapter 13

Impact Evaluation and Strategy Selection

13.1. Introduction

This chapter examines the two options of comprehensive conservation and piecemeal redevelopment suggested in the previous chapter, through the technique of community impact evaluation. The overall objective is to select the preferred proposal to be implemented from the point of view of the widest number of sectors in the community.

After examining in section 13.2 the elements that characterize the different techniques used for assessment of development alternatives - among them economic evaluation - we follow by discussing the reasons why community impact analysis was selected. (Section 13.2.2) The method is chosen for three reasons: (i) it can provide an uncomplicated instrument to assist planning teams in establishing the cost and benefit implications at the earliest stages of the proposal process; (ii) it can aid group decisions in the area of urban conservation where more than one discipline is involved; and (iii) provides important information when there is difficulty in attributing an 'economic value' to certain items such as the cultural or historical aspects of conservation.

The steps to be followed in this evaluation are as follows: (i) specification and analysis of the two scenarios of comprehensive evaluation and piecemeal redevelopment, (Section 13.3); (ii) identification of the community sectors involved and identification of objectives, (Section 13.3.1); (iii) incidence of costs and benefits for different groups and identification of impacts of the projects on each of the sectors, (Section 13.3.2); (iv) valuation of a preference matrix established from the perspective of each of the intervening sectors, (Section 13.4).

The method proposed should not be regarded as the ideal solution for deciding between options. It does provide, however a means for exploring possible options and their

implications at the earliest stage of decision process. It is incomplete but nevertheless informative. It can be regarded as a first step to a full economic cost benefit analysis: all the relevant costs and benefits are listed, but their quantification is left to a later phase. For this reason, economic terminology is used throughout the chapter.

13.2. Methods of evaluation

The identification of various types of costs and their subsequent measurement in money terms is similar in most types of efficiency evaluations; however, the nature of the consequences arising from the alternatives being examined may differ considerably.

Evaluation, assessment or appraisal are synonyms used in a process of determining quality and efficiency. In studies involving urban development options it constitutes a vital part of the process of judging the problems and potential of a built-up-area. It is a method which will show the interested parties the choices and future opportunities for possible intervention. At the same time it will clarify to those who might support it (financially, morally or politically) that it is a project that merits money, time and energy.

Two techniques of evaluation, in particular, are relevant to urban analysis projects: the economic approach and community impact evaluation.

13.2.1. The economic approach[1]

Two elements characterize economic analysis, regardless of the activities to which it is applied. Firstly, it deals with both inputs and outputs (sometimes called costs and consequences) of activities. From the economic point of view, it is the linkage of costs and consequences which allows a decision to be made. Secondly, economic analysis concerns itself with choices. Resource scarcity, and the consequent inability to produce all desired outputs mean, that choices must be made in all areas of human activity.

[1] This section draws on a number of economic texts, namely: Le Grand, J., Propper, C., Robinson, R., The Economics of Social Problems, The Macmillan Press, London, 1992; Pearce, D., Cost-Benefit Analysis, Macmillan, London, 1971; Frost, D., Values for Money, Gower Press, London, 1971.

These choices are usually made in two broad contexts: from the point of view of a particular individual in society, and from the point of view of the whole community or various groups of people. It is with the latter set of choices that we will be mainly concerned.

Some choices for the community may be between objectives such as, is it better to build a new housing estate or to rehabilitate an old district? Other choices may be between different means of achieving a given objective, *eg.* is it better to provide regular annual maintenance to a building and repair minor problems every year, or to carry out major conservation works every five or ten years? In fact, any form of action towards heritage requires answers to be given to the following questions: which buildings should be conserved; when should the works of conservation begin; whether to repair, rehabilitate or conserve; how much should be repaired, rehabilitated or conserved?

There is no single basis for making community-wide choices. Economists, however, tend to put emphasis on the criterion of *economic efficiency*.

The community engages in conservation activities in order to derive benefits for its members. The same is true for other activities, such as the provision of sewerage, education or housing services. The need for *efficiency* in all these activities arises from the fact that there will never be enough resources to satisfy human needs completely. Given such scarcity, it follows that use of resources in a given beneficial activity inevitably involves a sacrifice: the community foregoes the opportunity to use the same resources in other beneficial activities.

The economist's concept of cost derives from this notion of alternative uses for scarce resources. The *cost of a unit* of a resource is the benefit that would be derived from using it in its best alternative use, hence the economist's term, *opportunity cost*. This concept should be contrasted with a strictly financial concept of cost, which relates to the cash outlays for resources.

Economic efficiency implies that choices in conservation should be made so as to derive the maximum total benefit from the resources at the community's disposal. In practice,

this involves the appraisal of conservation alternatives through the calculation of the amount by which the benefits generated exceed the costs (sacrifices) incurred. Therefore, it is implicit in the efficiency criterion that a given procedure cannot be preferred over another solely on the basis of being more beneficial, or solely on the basis of being less costly. The choice will depend on both relative benefits and relative costs.

This basic notion of maximizing the total benefits to the community for the use of its resources is unlikely to have many objectors. It does, however, raise many issues. Who are, or what constitutes, the community? What are the benefits arising from conservation programmes? How are the benefits and costs estimated, and by whom? Is it important to know the distribution of the benefits on conservation programmes amongst different groups within the community? Most of these issues will be examined here.

Clearly, however, efficiency - based economic appraisal does not provide answers to all questions of choice in conservation. On the one hand, economic evaluation is highly dependent upon the underlying technical (eg. architectural) appraisal. For instance, the assessment of the cost and benefits of alternative approaches in conservation requires details of the range of feasible alternatives, the resource requirements of each alternative and the results (or outcomes) produced by each alternative. Such information must be derived from other relevant technical experts, ie. architects, planners, engineers and so on. Economic evaluation should, therefore, be viewed as a complement to conservation techniques, rather than as a substitute for it.

Equally important, efficiency may not be the only criterion for judging conservation alternatives. *Equity* is often suggested as another relevant criterion. Equity is concerned with the justice or fairness of the way that goods and services are divided between different members of society. However, defining equity precisely is a complex exercise. It may be attributed several notions (eg. equal access to housing by geographical area; equal shares between groups or equal access irrespective of income). One way round the problem of multiple criteria would be to allow equity considerations to act as a constraint on how far one would pursue efficiency. That is, one would appraise

alternatives in accordance with the efficiency criterion, selecting the most efficient alternative, subject to certain equity considerations being met. Le Grand and others conclude that in the real world, where the amount people produce may depend on the rewards they receive, there may be a *trade-off* between equity and efficiency; the single-minded pursuit of one may result in the other not being achieved and vice versa.

Of the different types of economic evaluation, cost-benefit analysis (CBA) has been the most used to assess the relative advantages and disadvantages of alternative projects in central urban areas. 'It purports to identify and quantify advantages and disadvantages of a policy in monetary terms'.[2] This method has been widely used in the assessment of government sponsored projects such as water resource development, and transport schemes where the private sector criterion of profit is not relevant.[3] The objective is always to identify which of the alternative options examined maximises the overall increase in the social welfare of the community.

The CBA technique was initially developed in the United States to evaluate public-sector investment projects, and later used in the planning field and in particular in the area of urban transport (eg. the pioneering C.B.A. study in England which considered the implications, for London, of the Victoria underground railway line).[4] A clear definition of the nature of C.B.A. is provided by Prest and Turvey '*Cost-Benefit Analysis is a practical way of assessing the desirability of projects, in which it is important to take a long view (in the sense of looking at repercussions in the future as well as the short-term) and a wide view (in the sense of allowing for side effects of various kinds as well as on many individuals, industries, regions, etc.), i.e. it implies the enumeration and evaluation of all the relevant costs and benefits.*'[5]

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[2] Other techniques for economic evaluation are: 'cost-minimization analysis' which searches for the least cost alternative, or 'cost-effectiveness analysis', in which costs are related to a single, common effect which may differ in magnitude between the alternative programmes. Pearce, D., Cost-Benefit Analysis, Macmillan, London, 1971, p.8.

[3] Frost, D.,Values for Money, Gower Press, London, 1971.

[4] Foster, C.D., and Beesley, M.E., 'Estimating the Social Benefits of Constructing an Underground Railway in London', Journal of the Royal Statistical Society, 1963, pp. 46-56.

[5] Prest, A.R., and Turvey, R., 'Cost-Benefit Analysis: A Survey', Economic Journal, December, 1965, pp. 683-735.

In urban planning there is a necessity to take a 'wide view' given that any plan will have many implications affecting sectors of the local economy. Additionally, if the evaluation were to consider only the direct financial repercussions, it would omit many important social ramifications (eg. in terms of environmental damage and community disruption) and benefits (i.e. increased social amenities and reduced congestion). It is important to adopt a 'long view' in major planning approaches because there will obviously be repercussions into the future which will hold implications for further generations. It is these long-term effects and the durability of the physical changes that should serve as justifications for accepting a particular proposal.

The C.B.A. technique involves placing monetary values on all the various attributes and defects of a plan, including those items which do not normally have prices attached to them.[6] Conceptually, C.B.A. simply involves the consideration of all aspects of a plan as they affect the urban community. In practice, the application of C.B.A. raises a number of problems and the technique has come under considerable criticism in recent years. One problem with C.B.A. is that it only considers costs and benefits as composite sums and does not specifically designate by different sectors or groups, their incidence, which in the case of the city centre project is essential.[7] Another difficulty is that in many public sector projects there are many costs and benefits that cannot be expressed in monetary terms, which is a requirement for a cost-benefit ratio to be devised. The problem is mostly related with the idea of 'social goods' (those goods from which the whole community derives a collective benefit). The benefits of such goods are particularly difficult to estimate. In theory, it may be possible to evaluate such items by asking people how much they would be willing to pay for their provision or how much they would accept for their loss;[8] but in practice eliciting such values is fraught with many difficulties. People have to think about and value a theoretical situation. Such items are often omitted from the CBA and the decision is based on the

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[6] In relation to urban transport plan this technique would attempt to evaluate travel time savings, changes in accident rates, noise nuisances, air pollution and other items not usually accredited with a monetary value.

[7] Alexander, I., City Centre Redevelopment, Progress in Planning, volume 3, part I, Pergamon Press, 1974, pp.14-15.

[8] ibid., 1974, p.15.

quantified items, which often opts for the best economically efficient solution but may be far from what is socially desirable.

13.2.2. Community impact evaluation

Community impact evaluation (CIE) is a particular form of the well-known method of *environmental impact assessment* (EIA). In essence, it is an application of EIA to the particular problems of urban planning analysis.

EIA was initially developed as a method to aid identification, prediction and evaluation of the impact or consequences of alternative projects. Planners concerned with the effects of pollution and transportation upon the environment, have in the past used systems of evaluation based on complex mathematical models; others such as psychologists, social scientists and architects working on the measurement of environmental quality including historic buildings and sites, have developed assessment techniques based on perception.[9]

In the Netherlands much research has been done on environmental impact assessment (EIA) and its application at the planning level. Recognition was given to the advantages of incorporating the provisions of the EIA program in policy, regional, structural and location plans. However, most of the cases studied are placed at the lower end of the planning tier with certain generalised projects already in mind (eg. an industrial estate).[10] Emphasis should be placed at the other levels of planning in order to comprehend fully the spatial and cumulative aspects of development. It should be part of all levels of decision-making in order to reduce environmental degradation.

Other undeveloped fields in environmental assessment methods are those related to the nature of the impact and prediction of the results of its occurrence. Often these methods deal with the measurement of environmental changes and assess its significance. Social

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[9] Bisset, R., 'Introduction to methods for environmental impact assessment', University of Aberdeen in: Environmental Impact Assessment, edited by PADC Environmental Impact Assessment UNT, Nato Asi series, series D: Behaviourial Social Sciences, n.14. Martinus Nijhoff Publishers, 1983, pp.131-147.

[10] Jones, M.G., 'Environmental Impact Assessment at the Planning Level: two systems, pp.63-94.

aspects are disregarded without taking into account, for instance, that social groups or individuals often have differing views and preferences. This concept must be analyzed side by side with the temporal and dynamic characteristics of impacts.

Although research is continuing, the above methods have not been transferred to or developed in the evaluation of historic buildings. Techniques relying mainly upon the intuition of the assessor are still in use. Planners are now aware that any programme will have an impact far beyond the area it directly covers owing to the interconnections and relationships between all parts of the urban system. That is the reason why there have been attempts to develop forms of evaluating the consequences of the impacts when adopting alternative solutions.[11] This process results in the identification of the 'best' or 'preferred' solution, though the question of which is the 'better' is dependent on the criteria against which the plan is assessed. It is a process of evaluation related to that of setting goals and objectives which should be carefully planned, taking into account the various groups affected or involved. Hence, an intervention in the city centre implies that any optional scheme should be evaluated in the light of what it is trying to achieve, and that the relationship between the scheme and the rest of the urban system should be taken into account both at the goal-setting and evaluative stages.

In Community Impact Evaluation one attempts to cover the whole range of sectors and externalities involved in a project. This is not possible through a financial analysis since it is concerned only with those promoting the project, nor through cost benefit analysis which, given its economic basis, tends to consider primarily the economic impacts and to ignore the social and environmental aspects, which cannot be directly measured by money, or estimated from national income accounts. Cost benefit analysis is concerned with the net change in economic output from the project but does not show the distribution of the costs and benefits between the sectors.

The concept of 'efficiency' inherent in Community Impact Evaluation is derived from the preferences of the community sectors involved in the implementation and operationalization of a project. If all the community sectors prefer the same option, then

[11] Lichfield, N., 'Economics in Town Planning', Town Planning Review, 39, 1968, p.1-23.

that particular option would be taken to be the most 'efficient', even though the excess of benefits over cost had not actually been measured. On the contrary, if the sectors differ in their preference (as is usually the case) no immediate conclusions can be drawn.

It is obvious that there is a strong element of subjectivity in this approach, but it does have the advantage of making explicit all the relevant costs and benefits. By examining the incidence of costs and benefits upon the various groups involved who might have different aspirations with regard to a particular plan, information of relevance to the planning process is provided.

That is the 'Cost Impacts Evaluation', also developed by Lichfield for the evaluation of the implication of the adoption of alternative approaches to a project, which will measure and value the benefits and costs to people as perceived by them. One will be able to cover the whole range of sectors and externalities involved in the different options for a specific project and then decide upon one.

This evaluation is based in specific inputs and outputs either for what exists on the site and what will exist at the completion of the project. One will be able to compare ordinal rankings on efficiency, by comparing marginal outputs with marginal inputs, even though not valued or even fully measured. Although facing many problems, we now intend to follow by evaluating the cost impacts of the options.

Other evaluation methods have been developed in order to support decision in areas of urban planning, conservation and environment assessment. Social Cost Benefit Analysis was developed from the C.B.A. to reflect a whole range of public sector decisions on projects relating to the investment of public resources for goods and services which have no apparent market price. This analysis is concerned not only with the economic costs and benefits falling on the particular promoting agency but also on others who are not the promoters, but whose activities will be indirectly affected by the project.[12]

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[12] Lichfield, N., Economics of Urban Conservation, Cambridge University Press, 1988, p.241.

In the *social cost benefit analysis* both costs and benefits are seen in terms of the opportunity costs of any option. Therefore the costs of a project are those that would be incurred in the project but valued at the best opportunities foregone by not using those resources elsewhere for these economists have developed sophisticated techniques to place 'shadow prices' on intangible items, however there is no objective method of judging their accuracy. Additionally, because many plans are so large it is difficult to define all the costs and benefits involved and their exact repercussions. Consequently some items may be accidentally but entirely omitted from the calculations altogether, while others are included repeatedly and therefore counted twice. There are also problems in deciding how much importance should be attached to future costs and benefits relative to current ones; the problem of defining the correct discount rate.[13]

Because of this approach there is much to be said for confining the use of C.B.A. to small-scale plans and to use alternative methods for larger exercises. One alternative is the Cost-utility analyses deals with the concept of *utility* and is a technique preferred by many analysts. 'Utility' refers to the values or worth of a specific level of conservation status (or improvement in conservation status) and can be measured by the preferences of individuals or society for any particular set of conservation outcomes. Although utility analysis is a relatively new technique (especially used in health care evaluation) it is viewed as an extremely promising technique because of its potential to allow for a quality of life adjustments within a given set conservation outcomes, while simultaneously providing a common denominator for comparison of costs and outcomes in different programmes. The results of cost-utility analyses are expressed in terms of cost per quality-adjusted conservation year, examined by undertaking one programme instead of another.

[13] A low social discount rate means favouring the public sector projects, so leading to more public sector projects, perhaps at the expense of squeezing out those needed from the private sector. A high social rate of discount could result in a level of investment too low to make adequate provision for future generations.

Others researchers, such as Hill and Mcloughlin[14] have developed a related process of evaluation, *The Goals-Achievement Matrix* in which alternatives are assessed in terms of their degree of success in meeting certain objectives. The difficulty of this method is that it takes the goals of an already fixed plan and gives little guidance to its suitability or how these goals should be attained. Since the goals are expected to represent the values of the entire community, this is a particularly nebulous problem. Yet this method is based on the principle that all costs and benefits should be measured in units in which they are perceived by the loser or beneficiary. This approach also has problems of comparing costs and benefits, but it seems a better system than CBA where some items are given a dubious monetary value or omitted. However, there is still the problem of weighing the goals which according to Hill are previously determined.

Another evaluating system is proposed by Lichfield[15] based on a *Planning Balance Sheet*. This was developed from CBA but was directed to physical planning problems. It does not insist on the translation of all relevant items into monetary terms, recognising that this is not usually technically possible. The Planning Balance Sheet formally incorporates into the analysis the unquantifiable items alongside the quantified ones. It shows their existence and importance allowing for a trade-off between those items and shows which ones are more easily quantified.

The Planning Balance Sheet approach is similar to C.B.A. in that it also aims to be comprehensive in coverage of costs and benefits. However, the Planning Balance Sheet does not try to translate all the implications of a plan into monetary terms. Furthermore, and in addition, explicitly shows the incidence of the various costs and benefits. Instead of evaluating the costs and the benefits of different plans, except for those items which normally have monetary values attached to them, the various implications are left in physical terms and set out in tabular form indicating the extent to which the various

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[14] Hill, M., 'A Goals Achievement Matrix for Evaluating Alternative Plans', J. A. M. Institute Planners, 34, 1978, pp. 19-29. Mcloughlin, B., Urban and Regional Planning: A Systems Approach, Faber & Faber, London, 1969.

[15] Lichfield, N., 'Cost-benefit analysis in town planning, a case study: Swanley', Urban Studies, nº3, 1964, pp. 215-250. Also 'Economics in Town Planning', Town Planning Review, nº39, 1968, pp. 1-23.

groups within the urban community will be affected.[16]

13.3. Community Impact Evaluation

The assessment of costs and benefits is the core of any economic evaluation. Such assessment has three distinct stages: *enumeration*, *quantification* (or measurement) and *explicit valuation of the costs and benefits* in commensurate units. In this study we will be dealing exclusively with the first stage.

Considering the two options for the Baixa Pombalina: (i) Comprehensive Conservation: which means adapting the building to a new use which it will be capable of sustaining. From this programme it is assumed that the extra value from upgrading the building would offset the extra cost of the works, (so the net cost of the rehabilitation would be zero)[17]; and (ii) Piecemeal Redevelopment: which entails that the building's interior will be pulled down to release the site for a new development. The proprietor will have the maximum surplus of land value using this system. Before determining the incidence of costs and benefits for the different groups we follow by enumerating the objectives each of the sectors have in each of the options.

The first question to be addressed is who are the sectors of the community who would be affected by the two proposals for Baixa Pombalina? Under Community Impact Evaluation the community includes not only the residents of Baixa but also others groups who have an interest, such as tourists and visitors, travellers, and more widely the population in general. The benefits of a conservation approach are not confined to the individual whose home is improved. Most people derive benefit from the return of conservation skills to other neighbourhoods. These benefits should be included in the assessment of total social benefit. However, they are frequently omitted because of the cost of estimating them. It is helpful to distinguish two main groups the producers/operator and the consumers. The producers/operator include the current property owners the developer/financier as well as the government and the municipality,

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[16] Button, K.J., Urban Economics, Macmillan, London, 1985, p.195.

[17] Lichfield, N., Economics of Urban Conservation, Cambridge University Press, 1988, p.184.

whose assets are used in the process, either they are on site or off site. The consumers include the current occupiers, whether they are residents or not, displaced or not and all the others using the area, such as the tourists and visitors, the travellers, and taxpayers.

13.3.1. Community sectoral objectives

For any particular resource there will be an owner, occupier, developer, financier, etc., who may be private or public or both. However two main groups can be distinguished; those directly involved with the property, who have financial interest, and those with associated interest and non direct financial interest in the area. First we will be dealing with the first group. They show different basic objectives:

(i) the owner regards the property as an investment and therefore focuses attention on his returns.

(ii) the occupier will consider the property as a base for his activities, and will look to profitability (in production services) or satisfaction (in consumer services).

(iii) the financier has in mind the return on his loan and its security.

(iv) The municipality is concerned with the public good.

(v) The government is concerned with the public good.

(i) Current owners and (ii) occupiers are considered together as their benefits and costs derive from the same causes, although distributed irregularly between them. The owner will try to maintain the benefit of the building at the highest practicable level as practicable throughout its life. Therefore the owner will try to conserve it. He will try to maximise net benefit during his life to the point of any decision. This does not imply that he will try to get the maximum intensity of use which could be shortening the building's potential life, or that he would try to lengthen the building's life indefinitely, because he could benefit by developing the site.

(ii) The occupier of a building would be able to afford high level expenditure on maintenance of the property and obviously ensure its longer life, however in the long run, such occupation might be less profitable than if maintenance were neglected. The latter would be the case where redevelopment is visualised and neglect of the property could lead to maximisation of the net income. But if conservation is the aim, high

levels of maintenance would be essential in order to maintain the building and to lengthen its life. The owner would need a subsidy to conserve the building for its heritage quality and he would indirectly be asking taxpayers to pay for such support, for the benefit of current and future generations.

In the use of the built fabric the occupier has the returns from his occupation, for which he needs to find operating costs. He uses the qualities of the building in his occupation, and the off site qualities (such as location in relation to other occupations and activities; accessibility to and from transportation, markets, schools; the services available (gas, water, electricity, etc.) and the environmental factors, (noise, atmospheric pollution, vibration, visual outlook, etc.) Other operating costs, are the occupation itself and the consumption of heating, water, air-conditioning, maintenance, etc.; financial in servicing the owner's capital investment; and fiscal in his contribution to taxes as a means of contributing for the public services which are offered (access, street lighting, etc.)

The occupier needs to maximise the surplus of occupation benefits over operating costs. Conversely there will be pressure from the landlord, (who will try to increase the rent payable), the owners of the business which he is operating in terms of net profits, and from his own limited financial resources having regard to the other claims of his income.

Comprehensive conservation in Baixa includes the buildings' rehabilitation which is applied to buildings when structural and functional problems have to be solved. The (i) and (iii) owner or developer will study the needed alterations to the building, then he will compare the costs of conservation (without land/property costs) with the increased benefit which will be obtained if the building is to be redeveloped. If this study indicates sufficient potential profit he will proceed; on the contrary he will not unless he has a subsidy. The owner might consider rehabilitating the building for offices. But if the extra benefit is less than the extra cost then he would not be interested and would continue to use the building as it stands. However, if the extra benefit exceeds the extra cost the owner might then wish to adapt the building. In this case should the authority resist because of diminution of heritage benefit? The owner and developer will be denied gains which could be picked up on another site.

The situation concerning the potential benefit of the site for redevelopment (following destruction of the existing building) which is higher for new development than the benefit of the property as it stands must still be considered. When the site is considered as economically obsolete in its present use the most common situation is the demolition of buildings which are not obsolete and not economically obsolete, always with the objective of replacement.

(iii) The developer/financier will first consider if by paying for the property and changing its current use he will have a profit over the benefit of urban land. The owner will then obtain a speculative gain, and the developer a profit.

There would be an upward pressure on the rentals or sales benefit to be obtained from the new scheme. This puts pressure on the pre-renewal occupier who usually has the benefit of very low rents because he is in obsolete property. From the moment when he cannot afford the higher occupation costs he will be pressured to leave. This applies both to residential and business uses. In new development the developer/entrepreneur is concerned with the cost of carrying out the development and the returns (benefits) from occupation (either of himself or another). The benefits to the dev./ent. are the costs to the occupier of securing the occupation, for which he in turn receives the direct benefits of occupation.[18]

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[18] Restoration does not generally apply to the buildings in Baixa Pombalina, because their condition shows serious problems as well as lack of amenities which could not be solved with restoration. However, if this were to be undertaken the owner would find little demand for the buildings because they would not be viable either for the present use nor for a future one. This means that the price he would obtain on sale would be less than the cost of the work, therefore he would not proceed.

Another alternative is minimal work, where the occupier is the primary character concerned. When the owner is obliged to continue occupation in the current structure or is forced to do so, he is faced with the need to operate a building which is physically and functionally obsolete. Even when the income from the occupation of the building could exceed the expenses thereby so providing economic viability and sustaining the upkeep of the building, the owner would hardly ever be encouraged to continue its life. In such a situation the building will deteriorate towards non-viability. Should the authorities then intervene with the objective of preventing deterioration through enforced repairs and maintenance? They might push the owner toward a situation of annual loss as opposed to annual gain. Therefore, use would not be economically viable.

Another focus is given by (iv) the municipality which is concerned with the public good. Therefore, it needs to identify the opportunity costs to the community of alternative courses of action. In this regard, it is necessary to consider the total costs and benefits to the proprietor, the conservation authority and all other externalities.[19] This is the social opportunity cost. It is clearly seen that the opportunity costs of conservation of the heritage differ according to the parties. Rehabilitation has a higher social benefit because in this option the local authority is not only considering an intervention in a building but the public interest, that is thinking in terms of integrated conservation.

The interest of the owner/occupier (private or public) of an historic building reflects the heritage quality of the building so far as it is of benefit to them, but very rarely reflects the heritage benefit as seen by the government. (v) The government will consider: those who visit the buildings; those who have second-hand knowledge of the building but have not visited them; those who wish to ensure the bequest of the artifacts to future generations. The government can constrain the owner/occupier through 'heritage tenure'. It can impose its benefits, while the other parties who are bearing the costs are other members of the community who may wish to propose a different future. The government decides on the inventory of buildings, on its listing mechanism and procedures, and imposes a 'heritage tenure'. The government has difficulty in quantifying 'money value' versus the heritage benefit, so it estimates its utility on behalf of the current and future generations.

As there would be no contribution from the central government, the national taxpayers would not bear any costs. The benefits of conserving Baixa should be paid for not only by those who actually visit it, but also by the country as a whole.

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[19] Examples of externalities are the costs created by owners and occupiers of resources which they do not need to bear, and the benefit for which they cannot charge. Lichfield, N., p.121. Although, decisions are individual, externalities are very important: if someone improves his house, he or she improves the value of the surrounding houses as well. However, if the neighbours do not improve their houses, the value of the house will not increase as much as it might, because its value is limited by a deteriorating neighbourhood. If the adjoining house is improved, the other neighbour will profit by an increase in the value of his or her own house without having to make any expenditure. Under those circumstances, the path of minimum risk is to do nothing, and to profit from a neighbour's improvements. This is clearly seen in the Chiado reconstruction and the Martim Moniz redevelopment.

Table 13.1 Sectoral Objectives for each Community Sector

Community Sector	Sectoral Objective
Producer/Operator	
1. Current landowner of site	Increase land value
2. Developer/financier	Increase dev. profits
3. Municipality on site	
Roads/utilities	More Municipal services
Open spaces	More Municipal services
New flats	More betterment tax
4. Government on site	
National Heritage	Conserve heritage
5. Municipality off site	Reduce traffic congestion
6. Other landowners	
(i) Adjoining	Increase land value
(ii) Elsewhere	Increase land value
7. Business on site	
(i) Employers/firms	More business
(ii) Urban services	More accessibility
8. Other business	
(i) Adjoining	Increase land value
(ii) Elsewhere	Increase land value
(iii) Business displaced	Adequate compensation/ suitable altern. location
(iv) Business not displaced	Minimum disruption to loss of trade
9. Government budget	Greater financial contribution

(cont.) **Table 13.1** Sectoral Objectives for each Community Sector

Community Sector	Sectoral Objective
Consumers	
10. Current occups. on site	Minimise disturbance
11. Residents	
(i) Residents displaced	Suitable altern. premises
(ii) Residents not displd.	Minimum break of social ties and life style
12. Users of site	
(i) Traffic on site	Minimum traff. nuisance
(ii) Visitors	Enjoy new space
(iii) Passers by	Enjoy new view
13. Tourists and visitors	Enjoy the heritage
14. Traffic in general	
(i) To site	Reduce congestion
(ii) General	Increase accessibility
15. Other occupiers	
(i) Adjoining	Increase occupation value
(ii) Elsewhere	Maintain occupat. value
16. Lisbon's economy	
(i) Workforce	Greater number of jobs
(ii) Nearby residents	Greater envirn. attraction
(iii) Downtown users	Greater interest
(iv) Users/urban services	Greater accessibility, maximum utility
17. Taxpayers/city popul.	Preservation of values derived from area
18. Travellers	
(i) Private transport	Minimal extr.congestion
(ii) Public transport	Minimal extra decay and discomfort

It was previously mentioned that the buildings in Baixa show obsolescence of different kinds: structural, functional, and environmental. When this is the case the owner/occupier/investor is faced with calculations of financial costs of and returns from rehabilitation. Occasionally, the returns from the building exceed the costs of coping with the obsolescence, so no decision will be taken. In this case one is dealing with a building which is not completely useless but regarded as economically obsolete, therefore the option would have been not to repair it, allowing it to deteriorate.[20]
Table 13.1 summarises the sectoral objectives for each sector of the community.

13.3.2. Incidence of costs and benefits for different groups

Having discussed the sectoral objectives for those groups directly involved with the conservation or redevelopment options we now follow by enumerating the cost and benefits for those same groups.
Three categories of costs will be used for evaluation, including:

(i) Direct costs, (D), which consists of the costs of organizing and operating the conservation programme. The identification of these costs often amounts to listing the 'ingredients' of the programme, both variable costs (such as the time of conservation professionals) and fixed or overhead costs (such as construction costs, design costs, land costs or capital costs) experienced directly by the sectors.

(ii) Indirect costs, (I), are the costs experienced indirectly by the sectors. These include any out-of-pocket expenses incurred by the sectors as well as the value of any resources that contribute to the conservation approach.

(iii) Associated costs, or costs borne externally to the conservation programme which falls on the remainder of the community. These can be subdivided in: associated real (AR) representing the real costs; or associated financial (AF), not real but transfer costs falling on the remainder of the community.

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[20] If on the contrary the building is considered not economically obsolete, renewal options will be chosen. When the building is physically deteriorated and functionally obsolete for its present purpose, the site suffers economic obsolescence and so its benefit for redevelopment for offices is greater than the benefit of the building in its entirely. Therefore the owner would like to demolish and redevelop for that purpose. The owner prefers to renew against obsolescence, for this undermines the benefit of his investment. His decision will be affected by the expected costs and the returns of the investment that would be involved. The owner may or may not be functionally affected by the obsolescence, therefore he may or may not be willing to pay additional rents required in order to make the renewal economically feasible for the owners.

Also three main categories of benefits can be established:

(i) Direct benefit consists of conservation outcomes or effects of the alternatives in question. Normally, these effects are changes in the physical, social and emotional functioning of each individual (effects). These can be subdivided in changes in the resources use (benefits) or changes in the quality of life of the users (utility).

(ii) Indirect benefit are the production gains as a result of conservation.[21]

(iii) Associated benefits are the benefits arising externally to the conservation programme falling on the remainder of the community. This also can be subdivided in associated real, which are the real benefits or associated financial, not real transfer benefits falling on the remainder of the community.

While in many respects the idea of conservation has been integrated with planning, there is often a divergence between conservation and planning objectives which results from the different divisions in the local authority planning department and the conservation area team, lack of dialogue between them and an attempt to keep administrative power in their departments. It sometimes happens that an adaptation of a building to a new use is not in line with the planning policy, and because the use preferred for conservation would be less beneficial to the community than the preferred planning policy, there is a corresponding cost to the community within the conservation option.

The main problem in Baixa is related to the proposed use of the buildings for which there is no demand at present. The government could (and usually does) accept a use for which the property is suited provided the fabric is conserved, and there will be no need for compensation, if the owner still has a surplus of benefit over cost, as this is the only way to achieve conservation without public subsidy.

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[21] This might be an arguable 'benefit' as the first point is that the conservation evaluation should confine itself to changes in resource within the conservation sector only, rather than the entire economy. The second objection is the assertion that changes in the output of individuals or groups are not the grounds upon which we usually make resource - allocation decisions concerning the conservation of buildings of those involved. The third argument is that the valuation of indirect benefits (usually through increased earnings of individuals) makes a series of value judgements and assumptions which may only be appropriate in a limited number of cases. It is important to conclude that the inclusion of indirect benefits in a cost-benefit analysis may not be straightforward.

However, the tendency is to change the use into offices, because that is the way the owners receive the best surplus of benefit and it is also the best way of transferring the property to another owner. This situation relates to development as opposed to current use. In practice there is little difference between what actually happens and redevelopment because all that remains is the Pombaline facade. The urban architectural ambience has been kept if one considers that as a backcloth, but the whole social and residential structure has been changing and will disappear very soon. This pattern should be stopped, although it will give rise to initial financial loss, but alternately if it is to be fully compensated, then the financial costs falling on government would be very heavy and therefore minimal to the conservation programme. This is an even more worrying problem because it is usually the local authority who needs to bear the compensation costs whereas by definition the heritage conservation is generally for the Nation as a whole.

Consequently there are two possible options: either the State would decide that even though the property is part of the built heritage the owners should retain the freedom to buy and sell as they wish, so that tenure heritage is to be exercised compensation must flow; or it could suggest that because if the owner should be restricted in his freedom and must accept the financial penalties which flow from it, there would be no compensation for loss of rights. In this case the compensation is being achieved at the cost of the owners and not of the State, that is the public at large.

The beneficiaries are the occupiers, residents and users of the conservation area who form part of an environment; but there is still another large group, the adjoining owners and occupiers whose properties acquire a higher value because of the adjacent conservation area, and the visitors and tourists who have access to culture, those who gain from the trade generated there. But can such benefits be taxed directly by the conservation/planning authority? They can, but attention should be paid to the fact that the costs of collection must not be significant in relation to the expected income, and regard must be made to the capacity of the beneficiaries to pay; there must be clear advantage in specific pricing as opposed to general taxation. If a charging system is applied then one has to decide if the revenues from the conservation area should or not go into the general fund, or revert to that same conservation area, (See Appendix 5).

By definition, conservation is promoted and undertaken for the benefit of a wide range of people, many of whom might be foreign to the country (visitors and tourists), and also for the benefit of future generations. However, the costs of conservation fall on the owners and occupiers of the property and also on the community of the administrative area in which the property happens to be sited.

The municipality and ratepayers will have extra costs on providing the new public space, specially with the redesign of Comércio square pavement and all the river front, however it is unlikely that the municipal costs of cleaning, collection of refuse and lighting would increase. As the property values improve due to increased turnover in shops and offices, there would be a corresponding increase in rateable values. On the other hand ratepayers as a whole will be financing the proposal.

Commercial occupiers will have additional costs of having staff available to receive deliveries after opening hours, but on the other hand they are likely to increase in trade as the area is conserved, as the area becomes safer and more pleasant for shopping. Such trade will be also increased from the new residents of the rehabilitated houses. Therefore the extra investment involved would be likely to give a high financial return.

The residents would have mixed benefits as during the day the noise of traffic would be removed or decreased, but it would be increased in the early morning.

Users of site include pedestrians in Baixa, both shoppers and others with business in the buildings and also visitors from the rest of the city, or people coming from out side, or those who have to cross the area for different reasons, who in general buy things in the shops or eat in restaurants. They would benefit from traffic calming, and exclusion of motor traffic in certain streets and in Comércio square, in being able to walk in safety avoiding the sudden conflicts with traffic, and being able to enjoy the amenity of the historic centre without the intense noise, visible intrusion of cars and delivery vans.

Traffic in general comprises commercial vehicles delivering to and carrying from shops private motorists and public transports. This sector will have some increase and some decrease in costs. The commercial deliveries will be able on their trips to unload close

to the buildings without pedestrian interference by being able to move along the streets which are often purely to commercial traffic in the less crowded hours. However they will have extra costs of enforced delivery during evening, night or early morning.

Private cars would be able to reduce journey time costs by being able to find a parking space, at a money charge, in the new multi-storey car parks at Cais do Sodré and (from which the walking time to Baixa is ten minutes) without having to cruise around to find an odd corner in which to park. But they will lose the facility of being able to drop passengers or stop for a few minutes close to their destination. These factors are applied to all private motorists whether they are workers, shoppers or visitors. The residents would have the advantage of privileged freedom (on issue of windscreen licence) along all the roads not actually closed to traffic, where they will be also able to park during the night and weekends.

It is now possible to have an indication of the variety of sectors who may be involved in decisions whether or not to conserve the property in question or with impacts outside. The owners and occupiers of property outside the conservation area, will derive benefits from the conservation project which are transfer costs, but would not pay for the rise in value except perhaps through increased taxation. The Local Authority will basically finance the conservation project in its administrative aspects through subsidies to the real benefit of the local and wider community. The visitors and tourists will receive benefits from the conservation project, although they will not be paying directly for it. Table 13.2 summarizes the type of costs and benefits for each of the community sectors involved in the conservation proposal.

Table 13.2 Distribution of Benefits and Costs of Comprehensive Conservation

Community Sector	Description	Type
Producers Operators		
1. Landowners	Property benefits	D
2. Developer/financier	Property benefits	D
3. Municipality on site	Costs	D
4. Govern.national heritage	Operating costs	D
5. Other landowners	Operating costs	AF
6. Business opert. in the site	Capital and operating costs	AR
7. Other business	Employment	AR
8. Government budget	Economic flows	AR
Consumers		
9. Current occup. on site	Occupation benefits	D
10. Residents	Occupation benefits	AR
11. Users of site	Occupier	AR
12. Other occupiers	Rate assessments	AF
13. Visitors and tourists	Experience of heritage	AR
14. Taxpayers (city population)	Tax assessment	I
15. Travellers	Environment	AR
16. Lisbon's economy	Opportunities for heritage	AR

13.4. A cost impact evaluation[22]

Cost Impact Evaluation (CIE) will be used in order to measure, and if practicable to value, the benefits or costs to people as perceived by those same people. This is a different measurement from that of the impact assessment, where the magnitude and scale of the output which is generally in question, is measured in some scientific terms for comparison with standards. This is measured when necessary in two cycles; in the

[22] This method has been used by Lichfield, N., and Alexander, I., 1974, and Real Estate Research Corporation, Heritage Conservation and Recreation Service, Economics of Revitalization, U.S. Department of the Interior, 1981. What is presented here is an adaptation of this method to our specific case study, therefore it constitutes another single approach which is pretended to be a way of evaluating conservation projects.

first the impacts are measured only in respect of the data which is readily available. From this there will be sufficient elements for a conclusion on evaluation; if this is not the case, one should do a second measurement by selecting the impacts which appear to be critical for choice between the options. This formula thus ensures that the measurement is carried out only on those impacts which are relevant to the evaluation.[23]

The assessment should progress in two phases: (i) identification of objectives for each sector followed by their preference; (ii) this is followed by a direct assessment to each of the sectors by asking them to rank in the 1 to 6 score their preference, then a final assessment of the whole sectors implicated should be carried out.

13.4.1 Identification of Objectives

The following Table 13.3 shows the objectives each community sector has in the study area. The first column specifies the community sector which is subdivided in Producers/Operator and Consumers. The impact is shown in the first column, the sectorial objective is expressed in the third column, followed by an indication, in the last column, if the sector is better (+), worse (-) or (o) when there is no change, through a comparison of the state on completion of option (R) (Piecemeal Redevelopment) with completion of option (C) Comprehensive Piecemeal.

Immediate conclusions can be drawn from this table: for the Producers/operators in option (R) the only advantaged sectors are developer/financier, the landowner of site and the employers/firms all the others favour option (C) except for the neutrality of the adjoining landowners and business, and urban services (business on site). According to the consumers, all the sectors favour option (C) apart from the other occupiers who are neutral.

[23] Lichfield, N., Economics of Urban Conservation, Cambridge, University Press, p 252.

Table 13.3 Sectoral Objective Preference

Community Sector	Impact	Sectoral Objective	R.C.
Producer/Operator			
1. Current landowner of site	D	Increase land value	-
2. Developer/financier	D	Increase dev. profits	-
3. Municipality on site			
Roads/utilities	D	More Municipal services	+
Open spaces	D	More Municipal services	+
New flats	AF	More betterment tax	+
4. Government on site			
National Heritage	D	Conserve heritage	+
5. Municipality off site	AR	Reduce traffic congestion	+
6. Other landowners			
(i) Adjoining	AR	Increase land value	0
(ii) Elsewhere	AF	Increase land value	+
7. Business on site			
(i) Employers/firms	AR	More business	-
(ii) Urban services	AR	More accessibility	0
8. Other business			
(i) Adjoining	AR	Increase land value	0
(ii) Elsewhere	AF	Increase land value	+
(iii) Business displaced	D,AF	Adequate compensation/suitable altern. location	+
(iv) Business not displaced	D,AF	Minimum disruption to loss of trade	+
9. Government budget	AF	Greater financial contribution	+

(cont.) **Table 13.3** Sectoral objectives preference

Community Sector	Impact	Sectoral Objective	R.C.
Consumers			
10. Current occups. on site	D	Minimise disturbance	+
11. Residents			
(i) Residents displaced	D	Suitable altern. premises	+
(ii) Residents not displaced	D	Minimum break of social ties and life style	+
12. Users of site			
(i) Traffic on site	D	Minimum traff. nuisance	+
(ii) Visitors	D	Enjoy new space	+
(iii) Passers by	AF	Enjoy new view	+
13. Tourists and visitors	AR	Enjoy the heritage	+
14. Traffic in general			
(i) To site	AR	Reduce congestion	+
(ii) General	AR	Increase accessibility	
15. Other occupiers			
(i) Adjoining	AR	Increase occupation value	0
(ii) Elsewhere	AF	Maintain occupat. value	+
16. Lisbon's economy			
(i) Workforce	AR	Greater number of jobs	-
(ii) Nearby residents	AF	Greater envirn. attraction	+
(iii) Downtown users	AR	Greater interest	+
(iv) Users/urban services	AR	Greater accessibility, maximum utility	+
17. Taxpayers/city popul.	AF	Preservation of values derived from area	+
18. Travellers			
(i) Private transport	D	Minimal extr.congestion	+
(ii) Public transport	D	Minimal extra decay and discomfort	-

There is in fact a large number of producers and consumers who favour option (C), however a question arises: do their preferences outweigh the preferences of those in favour of option (R) that is piecemeal redevelopment? The implications for the developer and financier and the landowner of site of adopting option (R) have to be considered, however in themselves they are not of material significance. That is while they would lose the possibility of maximum investment (and profit) on the site, their profit margin would be of the same ratio. And the shortfall in absolute profits will be made by other projects. Equally it should be considered that although the residents in general favour option (C) some of them would lose, but they would also lose from redevelopment.

It is important for the assessment to identify the significance of the impacts, therefore it is necessary to ask which impacts are likely to be significant and then, for those already selected, what is their magnitude and significance. For this a full assessment can be carried out, which can be laborious and expensive or another approach is to identify potential impacts through for example 'an impact matrix'[24]. Basically what is proposed is a preliminary assessment to decide which impacts should and should not be pursued (scoping); and then decide which issues should be addressed having regard to the concern of the community likely to be affected.

Residents will prefer option (C) because they would lose some choice of flat on this site, and be accommodated elsewhere in a not so central location. Additionally their option was for the conservation because their chances to remain in the area are far more possible than with the redevelopment.

This evaluation has been in terms of the preference of the individual sectors for the option of advantage to them seen in terms of their sectoral objectives. In these terms, option (C) was preferred.

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[24] Clark, B. D., Chapman, K., Bisset, R., Wathern, P., and Barrett, M., 'A manual for the assessment of major development proposals', HMSO, London, 1981.

13.4.2. Weighting and Rating

As well as for the architectural assessment carried out in Chapter 11, a non-financial appraisal is used here as a method of ranking different factors and not comparing them to external reference point. The evaluation of options which is shown as Table 13.4 has three key components: (i) the community sector; (ii) the pre-determined weighting which is attributed to each of these, and; (iii) the rating established by the evaluator. 'The points system' criteria was established allowing the measurement of the two options. This will help people with different knowledge to achieve the best results without counting twice the same problem or benefit.[25]

The weighting is an important element of the evaluation. This attributes to each community sector a value which in this case scales their degree of involvement and importance in the evaluation of the two options. The weighting can always be changed from case to case. In this study the weighting varies between 2 and 10 according to the importance they have in the assessment. A higher value was given to those sectors directly involved in the site such as landowners, developer/financier, business, occupiers on the site and residents.

By using the '*Point System*' we are able to score the sectors on a six point scale between 1 and 6. A score 1 represents the worst situation the sector can realistically imagine (this is not necessarily as bad as the worst that can ever happen). A score of 6 represents the best situation that can realistically be imagined, /which is not the same as the 'utopian' situation). The individual ratings multiplied by the relevant weighting gives the score for each particular sector of the community. The scores then can be added together to give an overall total value for each option. This will be between 100 and 600 with higher scores indicating the preferred option.

[25] Still it is important to note that these judgments depend on the different community sectors as well as on the values change over time, which implies that if one wants to have an accurate valuation, it is necessary to update records.

Table 13.4 Evaluation of Options (on completion)

Community Sector	Option		
Producers Operators	**Evaluation**	**Weighting**	**Score**
1. Landowners	1 2 3 4 5 6	x **10**	=
2. Developer/financier	1 2 3 4 5 6	x **10**	=
3. Municipality on site	1 2 3 4 5 6	x **6**	=
4. Govern.national heritage	1 2 3 4 5 6	x **5**	=
5. Other landowners	1 2 3 4 5 6	x **2**	=
6. Business opert. in the site	1 2 3 4 5 6	x **10**	=
7. Other business	1 2 3 4 5 6	x **2**	=
8. Government budget	1 2 3 4 5 6	x **5**	=
Consumers			
9. Current occup. on site	1 2 3 4 5 6	x **10**	=
10. Residents	1 2 3 4 5 6	x **10**	=
11. Users of site	1 2 3 4 5 6	x **6**	=
12. Other occupiers	1 2 3 4 5 6	x **5**	=
13. Visitors and tourists	1 2 3 4 5 6	x **5**	=
14. Taxpayers (city population)	1 2 3 4 5 6	x **5**	=
15. Travellers	1 2 3 4 5 6	x **5**	=
16. Lisbon's economy	1 2 3 4 5 6	x **4**	=
Total			=

13.4.3. Implications for Classification

The overall score of each sector determined by the selection and weighting is then used to place each option on a group of significance. Table 13.5 represents the nominal scale for the results and the meaning of the score.

Table 13.5 A Nominal Scale for the Results with a view to Selecting Options

Scoring Range	Meaning/Description
450 - 600	- of major importance
300 - 349	- of overall importance
250 - 299	- of value
100 - 249	- of no importance

The results are based on a four point scale, each corresponding to a quartile of the total. If necessary this grouping can be changed. This should always be judged by the assessor, because the aim of the evaluation is to determine relative values rather than absolute values.

Four general groups are used:

(i) of *major significance* which means that there is no dough on its implementation;
(ii) *of overall importance* for the area and should be implemented;
(iii) *of value* but should be revised and evaluated again;
(iv) *of no importance* and should be abandoned.

It is always important to consider the borderlines cases, for which it is proposed a second evaluation. However, if the evaluation is carried out taking into account all the community sectors involved, it is likely to solve the problem of borderlines. If they persist this means that the two or more proposals should progress to a further evaluation stage, such as a cost-benefit or financial assessment to determine which is then favoured.

13.4.4. The two Options Evaluation

The following evaluation will enable to assess which of the two options is preferred. Table 13.6 shows the evaluation carried out for the two options, Comprehensive Conservation and Piecemeal Redevelopment.

Table 13.6 Evaluation of Options (on completion)

Community Sector	Conserv.		Redev.	
Producers Operators	**Evaluation**	**Wgt. Sc.**	**Evaluation**	**Wgt. Sc.**
1. Landowners	1 2 3 4 5 6	x **10** = 10	1 2 3 4 5 6	x **10** = 60
2. Developer/financier	1 2 3 4 5 6	x **10** = 10	1 2 3 4 5 6	x **10** = 60
3. Municipality on site	1 2 3 4 5 6	x **6** = 36	1 2 3 4 5 6	x **6** = 6
4. Govern.national heritage	1 2 3 4 5 6	x **5** = 30	1 2 3 4 5 6	x **5** = 5
5. Other landowners	1 2 3 4 5 6	x **2** = 10	1 2 3 4 5 6	x **2** = 4
6. Business opert. in the site	1 2 3 4 5 6	x **10** = 40	1 2 3 4 5 6	x **10** = 30
7. Other business	1 2 3 4 5 6	x **2** = 10	1 2 3 4 5 6	x **2** = 6
8. Government budget	1 2 3 4 5 6	x **5** = 30	1 2 3 4 5 6	x **5** = 5
Consumers				
9. Current occup. on site	1 2 3 4 5 6	x **10** = 60	1 2 3 4 5 6	x **10** = 10
10. Residents	1 2 3 4 5 6	x **10** = 60	1 2 3 4 5 6	x **10** = 10
11. Users of site	1 2 3 4 5 6	x **6** = 36	1 2 3 4 5 6	x **6** = 6
12. Other occupiers	1 2 3 4 5 6	x **5** = 20	1 2 3 4 5 6	x **5** = 15
13. Visitors and tourists	1 2 3 4 5 6	x **5** = 30	1 2 3 4 5 6	x **5** = 5
14. Taxpayers (city	1 2 3 4 5 6	x **5** = 30	1 2 3 4 5 6	x **5** = 5
15. Travellers	1 2 3 4 5 6	x **5** = 30	1 2 3 4 5 6	x **5** = 5
16. Lisbon's economy	1 2 3 4 5 6	x **4** = 24	1 2 3 4 5 6	x **4** = 12
Total		*= 466*		*= 244*

The results of the evaluation shows that Comprehensive Conservation option reached 466 points which means that it is of major importance for the area and that most of the sectors favour this intervention. The other option reached 244 points being considered of no importance therefore it should be completely abandoned. The only sector for which this last option had advantages is for developer/financier.

The opportunity costs are measured in relation to the best commercial option (redevelopment) which would result in the maximum use of the area.[26] The ranking for heritage benefit and private opportunity costs are not equal. The best commercial option results in the lowest ranking of heritage benefit; and the highest opportunity cost (restoration) has the highest ranking in historic benefit. However if at the same time the private proprietor wishes to maintain the heritage quality (which could be for differing reasons, such as any prestige gained from the historical benefit of a building, or because the local authority has determined so). The proprietor would consider the marginal financial losses of pursuing the other options against the marginal gain in conservation quality. Therefore he would choose the second best option which is rehabilitation, in which high conservation quality would be achieved along with reasonable opportunity cost. (This is a situation where the proprietor and the local authority have to measure and bargain for their individual objectives, assuming the proprietor finds the situation financially viable). The community preference on efficiency is clearly for the Comprehensive Conservation option, and as the distance in weight is considerable, at this point we assume that this option should be implemented.

A Summary on the two options is also presented here in Table 13.7 in order to simplify the previous table and to give a clear conclusion. The preferences are marked by a tick (✓), the neutrals by a dash (-) and the non-certain by a question mark (?).

[26] op cit, Lichfield, N. p.184.

Table 13.7. Summary of Conclusion on the two Options

Community sector	Option C	Option R
Producers/operators	*Conservation*	Redevelopment
1. Landowners		✓
2. Developer/financier		✓
3. Municipality on site	✓	
4. Government: nat. heritage	✓	
5. Municipality off site	✓	
6. Other landowners	-	-
7. Business opert. in the site	-	-
8. Other business	✓	
9. Government budget	✓	
Consumers		
10. Current occup. on site	✓	
11. Residents	✓	
12. Users of site	✓	
13. Tourists and visitors	✓	
14. Traffic in general	✓	
15. Other occupiers	-	-
16. Lisbon's economy	✓	
17. Taxpayers (city population)	✓	
18. Travellers	✓	

13.6. Conclusion

This evaluation can be a simple method of assessing the impacts and sectoral objectives of different groups against conservation options. This enables the simple comparison of different impacts to a particular option, by using the points system, to determine their future implication for a large number of interested sectors of the society. This constitutes a helpful instrument for those working in city planning, a clear way of

presenting facts, to bring out the equity implications of efficiency judgements to those dealing with the decision. Through this analysis the planning team will be able to answer a wider number of questions than other available methods of evaluation used in relation to transport, housing, environmental planning. It starts from assuming that the outcome of any decision will have impacts on different sectors of the community, and therefore desegregates the sectors from the beginning.

For each of these sectors the evaluation attempts to identify, predict, assess and, as far as possible, measure the difference in welfare from the point from the point of view of the community sector's own objectives. However it has to be highlighted, that the impact evaluation, is that these impacts are only one aspect of a policy's effects and also only one aspect of its overall evaluation.

The comprehensive conservation proposal aims at the conservation of Baixa for all the groups of the community involved and simultaneously to pass on the heritage to future generations in at least the condition in which it was inherited. For Local Authorities that are keen to promote their role on conservation and are taking positive steps towards sustainable development and strategic planning, the community impact evaluation of different options is essential. This approach is certainly a move in the right direction, towards both a more sustained pattern of development and a method of land-use planning that brings conservation considerations in at an early stage and incorporates them as a core element in decision-making.

All this shows that conservation of Baixa cannot be only a local responsibility; on the contrary it must be shared by the nation as a whole, but the share of local and national responsibility in meeting the 'true costs of conservation' is not apportioned.

There are a number of advantages to the evaluation approach: first the methodology is simple to apply and can be used by any local authority in conjunction with the interested sectors of the community involved in the proposal; second, it is fairly quick in comparison with other methods; third, the community impact assess can be carried out in conjunction with the overall appraisal of the plan which examines the usefulness and success of existing policies and identifies gaps where new policies are needed.

Regardless of the scope of the study, there appear to be three aspects of community impact appraisal that are potentially beneficial to clear thinking in urban or architectural conservation. First it embodies a systematic approach to decision-making, allowing them to test the implications of each decision against all the objectives that they set themselves. Second, it recognizes the scarcity of resources and the principle that decisions should depend upon benefits foregone as well as benefits obtained. Third, it offers a framework in which value judgements can be made explicit. Of course the community impact analysis has some disadvantages and those are for example related with those elements which are difficult to measure and consequently forgotten. Therefore one needs to keep the enumeration, measurement and explicit valuation stages separate in the assessment. It also provides a basis for further analysis within a coordinated action. Community Impact assessment is helping in this way, however much work has to be developed.

The method assess the relative efficiency of options and allows the authority to consider the questions of trade-off between the option with the greatest efficiency and those less efficient options which will provide a more equitable distribution of costs and benefits.

Chapter 14

Conclusions and Recommendations

14.1. Summary and main conclusions

The principal objective of this thesis is to examine the conservation of Baixa Pombalina by following a strict methodological framework. Emphasis is given to the historic urban centre and the changes that have occurred. Specific values are outlined and evaluated, and priorities with regard to conservation are determined. The issues of projected future alterations, in legislation, funding and administration, possible ways of intervention and responsibilities are also investigated. In association with this analysis, two evaluation systems have been used in order to aid judgement and decision making in the conservation process.

Baixa Pombalina comprises a rebuilt area following a major earthquake in 1755. The original medieval city was rebuilt on a grid plan with blocks of continuous uniform facades supported by a wooden framed masonry. The plan's composition relates mainly to two squares, the Comércio and Rossio squares (which coincide with the two major open spaces in the medieval city), surrounded by a grid pattern of streets based on a hierarchy of secondary streets disposed at right angles to the main streets. To this street grid another hierarchical system was attached; this was a pattern of uses determining that the main streets of commercial activity should relate to jewellers and banks, the secondary with domestic personal and special provisions, and the crossing streets should be devoted to domestic activity.

This major change in the city gave the Marquis of Pombal the opportunity to promote a new dominant class, the middle class whose privileges and status were based on trade rather than birth. The medieval association, between the working place, housing and trade, was broken and Baixa became a place for this emerging class, which would found by the end of the century the 'magazins', banks and shops, of which many exist up to

the present day.

The recent expansion of Lisbon has had two major effects on the urban fabric of Baixa Pombalina. On the social level, it has implicated a need for new buildings and structures and a demand for services and amenities. Structurally, it has led to the presence of decay as the fabric of the historic city ages, begins to deteriorate and is no longer capable of providing efficient use. Both these aspects lead to pressure for redevelopment (for building new roads, providing car parks, new shops and offices). The owners of buildings and land are eager to realize the increased value of their sites and producing pressure for the demolition of old buildings, and their structural condition deteriorates as owners anticipate redevelopment.

The character of Baixa has been transformed, commercial activity and offices taking the place of residential space. On the whole Lisbon's urban population is decreasing and this rate of loss is gradually increasing in the historic centre. This is where old people live and coincides with tertiary activity concentration.

The buildings in Baixa have been able to support small changes for many years. The degree to which Baixa adapts to new uses relates less to the buildings' physical suitability for new uses, and more to financial considerations regarding the alternatives. In Baixa, there is a prevalence of conversion as opposed to conservation or redevelopment, due to the great demand for service uses. Very recently, however, there has been a tendency to demolish the buildings' internal spaces and adjoining different properties, impairing their structural safety. The functional impact of these changes are - changes of use, from residential to commercial or offices - changes in the pattern of traffic and communications. There has been an intensification of traffic and pedestrian movement in the area resulting in congestion and various types of environmental hazards.

Outside business hours, however, Baixa is a lifeless area. The type of services which could maintain its vigour into the evening, such as retail and personal services, entertainment, cultural facilities and community services, are rapidly decreasing and in danger of virtual extinction. The few residents who remain are aged, have low incomes.

They live in flats that are in a bad state of repair and do not conform to the present standards of comfort, safety and amenities. The buildings, conservation relates with the type of use, which is directly related with the economic status of each community group. Where residential use exists maintenance tends to deteriorate, whereas commercial and office buildings are in better state. Therefore, it is likely that the pressure for conversion and redevelopment will continue.

The two main uses in Baixa Pombalina - offices and commercial activity - lead to peak hour traffic congestion. Additionally, the area is crossed every day by people whose destination is not the centre. They are obliged to do so by the proximity of transport terminals and the separation of places of work and residence in the Lisbon Metropolitan Region. The link between land-use policies and transportation policies has been neglected. Piecemeal growth of public transport is encouraging the increase of private transport which in turn does not represent a major advantage, especially in the city centre.

Population movements are determined by choices and alternatives, which in turn are directly related to quality and cost. The first choice relates journeys to work and housing opportunities. Because housing in the centre tends to be older and in worse condition and the choice of well-maintained housing is limited and costly, people move to the suburbs or city limits. There are in fact many reasons for the loss of population and housing space in Baixa Pombalina. The area is at the moment unbalanced, and certain shops and community services are no longer viable, increasing the exodus of population.

In parallel with the proposal for the conservation of Baixa, the thesis suggests a particular methodological approach to conservation. This involves a *verification stage* in which the present day urban area is analyzed through a comparative study of historical, social and economic transformations. This includes an historical urban and architectural evolution of the study area and its relationship to other backgrounds and a cognitive context in which the social and economic issues are discussed with other contexts of interest. (For which we have just emphasised the critical points). The second stage designated as *development and evaluation* comprises two distinct

assessments, (an architectural evaluation and the impact evaluation) and aims to help the decision making.

The process of architectural evaluation proposed in this thesis uses the concept of values in architectural conservation and is directed to different areas of speciality and levels of commitment. This architectural quality evaluation identifies the intrinsic values which the survey area exhibits and classifies them in a such way that enables an informed choice as to which methods of conservation should be applied. This aims to aid decision making on whether to preserve or replace.

As benefits of conservation will be enjoyed by future generations it is necessary to find a base and establish what is of value. Certainly this process of establishing values will always reveal attitudes and ideas different from those of a future generation. However by establishing criteria and making a critical assessment we can support our present day decision.

The architectural assessment developed and elaborated for buildings in Baixa Pombalina establishes two distinct areas; (i) *the historic/aesthetic characteristics*, (ii) and *the potential future use of these buildings related to their present technical problems.* Criteria are established allowing for the assessment of different aspects of the building. Distinct factors are then determined and scored in a point scale range. The resultant scores give the building's value, and they show that the buildings in Baixa are of major importance and therefore should be conserved. It is also possible to use the results to determine which buildings should have priority attention and which treatment should be applied.

Two major groups of values are proposed for this analzis: *cultural values which are associated with heritage sites* and their relationship with present day observers, dependent on their sensitivity to the past, and; *use values which relate to the present-day society* and its socio-political infrastructures and are directly related with economic aspects.

Baixa Pombalina has a valuable and unique physical fabric with its historical and cultural associations. Its concept was an innovation in city planning in the Western European context and a very good example of an intervention in an existing city. Colonial influences are clearly seen in the use of a grid plan, a system used by the Spanish colonization in South America, and adapted by the Portuguese to their own expansion. This model was used to rebuild Lisbon and it shows a very good adaptation of the grid to the hilly situations, streets' hierarchy and architectural uniformity analogous to Colonial principles. European influences are clearly seen in its monumental squares, in the architectural design of the facades and in the concern with hygiene and building construction. The buildings facades show extremely rigorous design and good qualities of composition, demonstrating a symbiosis of pre-fabrication and standardization of technical elements with the architecture.

An evaluation of Baixa also relates to its position as a city centre and its association with traditional social activities, commercial and administrative. As previously stated the buildings have been supporting changes for many years and continue serving the commercial and offices users needs, due to readaptation works, but they do not serve the residents. These buildings are still an economic asset because the developer is able to make use of them, change their usage and make a profit.

The evaluation of Baixa buildings shows that they are of overall importance and preservation is recommended. The buildings require rehabilitation and adaptation works especially upgrading of amenities.

Baixa Pombalina is a functional centre within Lisbon's historic centre, therefore it must be thought of in conjunction with the other adjoining conservation areas (Mouraria, Castelo, Alfama, Bairro Alto, Madragoa and Chiado rehabilitation) and be seen in the context of the whole town both for historical and visual reasons and in order to provide a proper context in which to plan for conservation. Furthermore, and for a final decision it is necessary an analysis of social and economic costs and benefits for each group of the community involved with the area.

The thesis then continues by offering two alternatives for Baixa Pombalina; Piecemeal Redevelopment and Comprehensive Conservation. The first represents Baixa's present situation and consists of the destruction of interiors in the existing buildings, and change in use from commercial and offices to offices and services, mainly banks. The results are quickly accomplished because its area of influence is restricted if compared with comprehensive conservation.

The impact of choices available for Baixa can be predicted and compared. Planning objectives have to be realistic and reflect the real choices open to people. The aim of the proposal set out in this thesis is to aid in re-establishing an urban life-style in Baixa, by introducing a permanent resident population, rehabilitating the quality of housing, and providing public services and security. The key option is to attempt to maintain the essence and spirit of the historic centre.

Comprehensive conservation implies the existence of a plan, scheduled in phases which depend upon the others' completion. In Baixa this aims for the restoration and rehabilitation of its architectural heritage and reintegration of residential use. The major objective is to achieve an equilibrium of uses in the city centre, heterogeneity and integration among people, activities and buildings.

At this stage the second evaluation process is implemented in order to assess the different proposal options. This is the impact evaluation method which should be regarded as a means for exploring options and their implications at the earliest stages of the decision making.

After identifying which community groups are involved in the projects, the sectoral objectives for each of them are determined. These differ considerably within the community. The municipality is concerned with the public good, but on the contrary the financier aims for the return on his loan and security, and the owner is looking at the property as an investment and gives priority to his returns. Community impact analysis aims to evaluate the two options from the viewpoint of the planning authority on behalf of the involved community, by determining the allocation of costs and benefits.

The last stage of this evaluation examines who exactly benefits and who loses with each of the options. By using a cost impact evaluation it is possible to measure and value the benefits or costs to people as perceived by them. The assessment is based on two phases: (i) identification of objectives for each group involved followed by their preference; (ii) a direct assessment by each of the groups, asking them to rank in a scale their preference. Finally an assessment of the whole group is carried out, determining the value of each option.

It is clear from the ranking that the best commercial option (piecemeal-redevelopment) results in the lowest ranking of heritage benefit; and the highest opportunity cost, while (restoration) had the highest ranking in historic benefit. The community desire was for comprehensive conservation, which is the projected implementation. Obviously, not all the community sectors preferred this option. The proprietor clearly preferred redevelopment as this is the best commercial situation for him, but the majority of the other sectors will obtain more benefits from the conservation proposal.

The use of an evaluation process assures the considerations by those concerned with the conservation of all the likely effects on people and the environment that a proposal may have, provided that all the relevant data may be either collected in good time or consciously omitted as unimportant to the decisions. It provides the Local Authority with a balanced presentation of a set of comparative data so that decisions can be made in full knowledge of their environmental, economic and social consequences. It also shows clearly that the Local Authority has considered the anticipated effects of the alternatives before following a decision. And it enables the public to give their views in full knowledge of the implications of the various alternatives.

The new Conservation Area that should be implemented under the comprehensive conservation option, will have to form part of an integrated planning process for the city if it is to achieve success. The main purpose of declaring selected areas as Conservation Areas is to provide the city council with power to achieve the highest possible environmental standard within them. Therefore all buildings of architectural or historical interest would be preserved where physically possible and grants and loans would be available through a 'town scheme' to support owners who would not otherwise be able

to bear the costs involved.

The conservation plan should be comprehensive, having regard at the same time to conservation and economic viability. It should set up a selection of priorities in order that the feasibility of exploiting all or part of the range of available resources may be explored and used to best effect. It should consider not only the preservation of aesthetic and cultural values, but also give prime importance to the social values. Any conservation policy must take account of the differing pressures for change. It must work with them and use them or, more fundamentally, see that the pressures are altered. Early assessments should be made of conservation needs, so as to produce aims for testing against, and for compatibility with, other planning requirements at a regional level. The assessment would set out to establish the effects of conservation on the future function of towns, villages or regional centres, and in reverse the likely effects of growth on conservation.

A conservation area for Baixa should be regarded as a public statement of intent by the local authority. It would be a warning that the local authority intends a whole area to be a subject of conservation; that preservation orders will almost certainly be made on the majority of buildings.

Lisbon's Local Authority ought to have a fundamental role in the conservation of Baixa Pombalina. It should be empowered by central government to exercise special policies and administrative arrangements. Overall plans should ensure which traffic and land use objectives would be favourable to the conservation area. It should also elaborate detailed programmes for preservation and/or enhancement and use control powers to ensure the survival of historic buildings and resist changes intimidating their character, safeguarding the environmental character to Baixa.

Popular participation in practical works should be stimulated through organizations and special arrangements for publicity. Information and public involvement are two sectors that need developing, as they are more important than a clamour for more government resources. It is also important to establish information centres as well as personnel trained in the broad field of historic preservation and conservation.

Lisbon's Local Authority should employ a diverse group of specialists such as craftsmen competent to reproduce traditional work, architects and structural and services engineers versed in restoration, conservation and rehabilitation of individual buildings, landscape architects skilled in creating appropriate surroundings to them, urban designers, urban planners, etc. The use of voluntary unskilled labour should also be considered as it can help the conservation project to be completed and it might attract the interest of the young and provide them with a career.

The Local Authority could, by supporting the case study, use the final results to publicize and encourage other similar projects to be implemented. A location that could be considered for further research as a case study could be the quarter delimited by Augusta, Conceição, Correeiros and S.Nicolau streets. There are a number of reasons for wishing to choose this quarter in Baixa Pombalina. Firstly because it largely belongs to one bank; secondly it is almost all in disuse; thirdly because data is available and technical surveys are easily done (specifically to the foundations) in an unoccupied building; fourthly because the developer has already submitted a proposal for redevelopment and this was not accepted by the city council.

The bank has been progressively buying buildings in this quarter in order to redevelop the property as a whole. The developer is open to suggestions and wants to invest as soon as possible. The local authority is in the position to negotiate with the bank and find a reasonable compromise which is economically viable and an attraction to prospective owners and tenants. The city council would have to consider that perhaps they will not achieve the optimum conservation project for this quarter, but the aim will be to illustrate the new theories of integrated conservation in Baixa by means of practical development experiments and to show that such conservation is an essential part of any realistic town-planning and building policy.

At the end of this thesis it is possible to answer the three opening questions: *what*, *why* and *how* to conserve Baixa Pombalina.

The historic research, together with the architectural, urban, socio-economic, commercial and traffic analysis gives a comprehensive context of what exists and could be the object

of conservation. The architectural evaluation gives a solid base for the question, 'why conserve' and suggests which buildings should have preferential attention. The conservation proposal for Baixa and the impact evaluation are the instruments to answer 'how to conserve'. Without the aid of this data and this methodological approach, there is bound to be difficulty in obtaining an objective measurement of the value of Baixa Pombalina and thus on the proposal of conservation area, status.

Despite some restrictions, the system of evaluation used in this study constitutes a essential component in the decision-making process regarding the conservation of Baixa Pombalina. It constitutes a methodological strategy and key element to assist Local Authorities and others to overcome the many doubts and uncertainties that arise during a conservation process. The analytical process proposed gives an indication of the most appropriate method of implementing conservation in the best interest of all those involved. The assessment is highly explicit, therefore all the interested parties are well informed as to how the final results come about.

In the face of increasing demands for conservation, there is a need to evaluate the conservation proposals in the context of the real demand. A fundamental requirement is to have a consistent national conservation policy which balances the increasing conservation demand with the limited provision. Additionally, emphasis should be on systematic analysis, using the best available techniques and sources of information and on the presentation of information in a form which provides a focus for public examination of a project and enables the importance of the predicted effects, and the scope for changing or mitigating them, to be properly evaluated by the planning authority before a decision is made.

14.2. Recommendations and implications for policy

There are six main recommendations 'arising from the research summarized above'. Unlike comparable conservation proposals, the recommendations will not take the form of suggestions for improvements in the standards and amenities of the buildings. By themselves, such actions will not lead to an appropriate and efficient rehabilitation of Baixa Pombalina. If a suitable rehabilitation project for the study area is to be designed,

a city-wide restructuring policy needs to be developed. Baixa Pombalina's decay is most obviously a consequence of factors that extend beyond its geographical limits.

1. The first point of crucial importance for the conservation of Lisbon's historic centre is to put an end to functional separation of the city. The end of functional separation implies a general change in ideas and values by local authorities, professional and urban designers, towards another town-planning approach with new ideas and aspirations.

2. An urban proposal which implies precise choices and commitments on economic and political levels is essential for the preservation of Lisbon's historic centre. One of the urban solutions is to arrest the growth of office space in the historic centre and its perimeter. This seems to be the only solution if one wants to preserve the historic centre in which adaptability is limited and the heavy traffic causes damage to the ancient buildings and to the image of the historic centre. For Baixa the Local Authority should propose an equilibrium of space use. In the buildings the ground floor should remain for commercial activity, the first floor could have a mixed use of commercial and office space, the second floor will be used by offices, the third and higher for residential use.

3. A strategy for dealing with economic-functional obsolescence needs to identify and select the facilities (or areas within facilities) most susceptible to this type of obsolescence and to ease their upgrading of replacement with minimum disturbance to the rest. This is a difficult task to achieve since technical or managerial change may end up affecting the whole structure. Design must be able to absorb the pressure towards deterioration and to encourage upgrading within the urban system.

A conservation policy for buildings must maintain architectural quality but in doing so should not impose excessive control over premises which must be allowed to change in some degree in order to survive economically. Baixa's attraction will not lie in buildings perfectly preserved in every detail but functionally obsolescent, nor in uncontrolled commercial and services success. For the best projects achievement, the buildings' and the blocks' conservation depends on the interaction to the opposite building, because without both interventions the minimum standards of living conditions would not be achieved. The proposed model comprises a reduction in construction area

from the third floor upwards in order to provide the necessary conditions of ventilation and privacy. A new structure should be inserted in the building. It could use new materials or use the same timber frame building construction, but it should follow the Pombaline rhythm used in the exterior facades.

4. Of crucial importance for the conservation of Baixa Pombalina is a clear definition of the roles and responsibilities of the National, Regional and Local Authorities concerned with conservation. It is also important that responsibility for the conservation area and the protection of buildings of architectural or historical interest should be taken by the planning authority and not left entirely to the Local Authority. For the implementation of any integrated conservation policy, the government would have to consider reviewing not only laws and regulations relating to the protection of the cultural heritage, but also some aspects of legislation regarding regional and town planning and housing, and to co-ordinate the various legislations in order to achieve complement and compatibility among them.

5. Once the conservation policy has been established the intervention will have to be supported either by the private or public sector or by joint action. However, before the architectural projects are examined, the ideal aims of town-planning should be defined so that the communities concerned could see if these aims are in their common interest. Owners should be organized and coordinated by public or private agencies into a dialogue with the tenants so that, by working with them the best results will be achieved. Above all, the Local Authority, together with those groups with a financial interest and the plan-makers themselves, must be controlled.

6. The conservation plan should consider that the built environment is never completed, never balanced, and that decline is always present. The process of obsolescence has to be seen in relation to the complementary processes of maintenance, rehabilitation, renovation and reuse, which are our ways of response to decay.

14.3. Suggestions for future research

One approach to further study would be to continue with research into the conceptual topics identified in Part IV of this thesis with a view to arriving at more general conclusions, effects and appropriate policies. These regard the 'Assessment of Values to be Preserved' and the 'Impact Evaluation and Strategy Selection'.

The analysis developed shows that the data availability can be crucial in the reliability of an evaluation. Several disciplines were used, nevertheless research still seems in some cases not to fulfil the needs of those working on the impact evaluation of alternative proposals. This means that more applied research ought to be carried out in this area.

The advantages of the impact evaluation system were stressed because they constitute a helpful element for those working with conservation, city planning and decision making. When choices have to be made and the resources are scarce it is necessary to evaluate the options before decision making. There is no single basis for community-wide choices, therefore decisions should be based on the interaction of the various forms of analysis (such as the economic appraisal) and the decision-making process itself. For this reason the impact evaluation must be extended beyond the pure enumeration of costs and benefits, and must include their quantification.

Impact evaluation has been widely used in environmental assessment projects, but its application to urban planning and conservation has developed only recently. Whilst it is clear which of the main community groups are involved and which of the main impacts should be tested and evaluated, the relative weighting that should be applied to each of them cannot, and probably never will be fully defined. Perceptions of those parameters depend on the historic effects in the area and the relative weighting will depend on social and economic forces. Further study could be made on sensitivity checks and on the weighting system.

A wider debate should be undertaken to enable the interested parties and public opinion to be discussed, and if a common view cannot be reached at least the differences in

opinions can be indicated and defined. This will provide decision makers with a much clearer tool to use in attempting to arrive at an optimum solution.

Appendix 1

Definition of Terms

The following list of terms attempts to clarify the notions based on definitions most internationally accepted.

1. Heritage

Historic Building: any building that is older then thirty years can now be classified as an historic building. Its value is determined by the importance to the cultural identity of a community.

Monument is a building or site notable for its architectural, artistic or historic value; often preserved as public property, for religious, national or political reasons. '*Although monuments in developing countries are often regarded as a source of revenue because they attract tourists, in reality there is a basic need to consider them as part of the human element of life itself*'.[1]

Cultural and Architectural Heritage are inherited values.

2. Basic Terminology

Prevention of deterioration (or indirect conservation) prevention entails protecting cultural property by controlling its environment.[2]

Preservation is to keep cultural property in its existing state.

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[1] Erder, C., Our Architectural Heritage: From Consciousness to Conservation, United Kingdom, 1986, p.17.

[2] op cit., Fielden, B., p.9, as well as for the following six definitions.

Conservation can simply be defined as 'action to prevent decay'.[3] The aim is to prolong the life of a building without detracting from the existing historic and aesthetic qualities of the fabric. It is agreed today in international conservation circles that intervention should be as minimal as possible and in some circumstances reversible.[4]

Consolidation (or direct conservation) is the physical addition or application of adhesive or supportive material into the actual fabric of cultural property in order to ensure the continued durability of its structural integrity.

Restoration has as its objective the revision of the original concept or legibility of the object. Restoration by anastyloysis (the reassembling of existing but dismembered parts) using original material is justified when supported by firm archaeological evidence and when it makes a ruin more comprehensible.

Reproduction entails copying an existing artefact, often in order to replace some missing or decayed parts, generally decorative, to maintain its aesthetic harmony.

Reconstruction of historic buildings and historic centres using new materials may be required by disasters. As in restoration, reconstruction must be based upon accurate documentation and evidence, never upon conjecture. The moving of entire buildings to new sites is another form of reconstruction, justified only by overriding national interest.

Rehabilitation the best way of preserving buildings (as opposed to objects), is to keep them in use - a practice which may involve what the French call "mise en valeur", or modernisation with or without adaptive alteration.

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[3] Feilden, B.M., Conservation of Historic Buildings, London, 1982, p.3. He describes the Types of Intervention in Historic Buildings in seven ascending degrees, always having in mind that minimum effective intervention is the best.

[4] Most countries are members of organizations such as: ICOMOS (International Council on Monuments and Sites) which is governmental and non-governmental such as, ICCROM (International Centre for Conservation in Rome) or major conservation bodies as UNESCO (United Nations Educational Scientific Cultural Organisation).

3. Terminology used in the Urban Scale

Another dominant consideration today is the increasing amount of attention which planners give to conservation. This direction is mainly due to the requirements conservation itself puts on planning authorities which they then cannot neglect. Such a movement subsequently forces a reexamination of the relationship between urban renewal and urban rehabilitation.

Urban Conservation is the process of providing the continuity of an area, neighbourhood and/or community by enabling further use of the buildings and extending the economic and social aspects of the community that uses them.

Urban Renewal is a much younger discipline. It aims to ensure that town-planning operations are conducted in accordance with the findings of sociological and technological research so as to create optimal living conditions in our towns and urban sectors. The revival of such urban areas is achieved by the replacement of old buildings, the demolition of unhealthy dwellings and the provision of social amenities and technical networks.

Town Planning Rehabilitation means the preservation and, in some cases, the partial restoration of an original and creative conception of space and of the unique character of every important urban cluster produced by such a conception. Urban Rehabilitation is a special branch of town-planning but it differs from normal town-planning in so far as it deals with interventions into existing spatial compositions and not with completely new developments. The methods and procedures employed in urban rehabilitation are more creative and more flexible than those used in the care of monuments or in urban renewal. It is possible to protect relatively unimportant buildings as 'accompanying buildings' and to remove important buildings as unaesthetic even if these are relatively new.

Strategic Planning can have two essential thrusts: first, to control change, to slow it down, to protect and conserve; the other, to promote and encourage change - to restore derelict land, to replace outworn housing, to introduce new industries, new jobs,

transport systems, shopping areas and leisure facilities. Strategic Planning tends to consider two options, but they should be included in the same planning policy to reconcile, in a creative manner, progress with conservation, renewal and preservation.

Slum Clearance is the official act of moving people out of slums, often into newly built tenements and demolishing the run down area.

Appendix 2

London Building Acts, Pombaline Decrees and Manuel da Maia's Dissertation

This appendix aims by transcribing a selection of the London 'building acts', and the 'Pombaline decrees as well as extracts from Manuel da Maia dissertation to give a closer approach to the intentions, rules and specifications which support the Baixa Pombalina plan. It is also possible to explore the possible influences London or Turin had at that time in Lisbon's reconstruction.

The First Building Act of 1667, [1] which addressed itself to the rebuilding of the city of London dealt with the relationship between types and heights of buildings and the thickness of their walls. These specifications were then determined by the width of the roads, so that the Act may be seen as an attempt to prevent the city from being rebuilt to its former chaotic street pattern. The preoccupation of the 1667 Act with sound construction, and with the use of brick, was a natural reaction to the Great Fire that had swept through the jumbled, wooden city the year before.

The Act determined the development of façade design and decoration. Firstly, to ensure a handsome uniformity, the Act stated; 'Be it enacted - that there should be only four sorts of buildings and no more, and that all manner of houses to be erected shall be of one of these four sorts of buildings and no other'. These four types were:

(A) *Houses fronting by-streets, and lanes*, were to be two stories high with basement and attic. The basement and ground floor walls were to be two bricks thick, the first floor one and a half bricks thick, and the parapet only one brick thick. The

[1] from: Cruickshank, D. and Wyld, P., London: the Art of Georgian Building, (The Architectural Press Ltd; London Architectural Book Publishing Co: New York, 1975).

basement was to be six and a half feet high, the first and second floors nine feet high.

(B) *Houses fronting streets and lanes of note and the Thames*, were to be of basement, three stories and attic. Basement and ground-floor walls two and a half bricks thick, first-floor walls, two bricks thick, second-floor walls one and a half brick thick, and the parapet one brick thick. The ground and first-floors were both to be A ten feet high and the second nine feet high, so, by this Act, the '*piano nobile*' was, for medium houses, made illegal.

(C) *Houses fronting high and principal streets*, were to be four stories, basement and attic. Basement and ground-floor walls two and a half bricks, first, second and third-floor walls one and a half brick thick, and the parapet 1 brick thick, and for this type of house the Act proposed a piano nobile proportion. The ground floor was to be ten feet high, the first floor ten and a half feet high, the second nine feet and the third eight and a half feet high.

(D) Finally, '*mansion house(s)* for citizens or other persons of extra-ordinary quality not fronting either of the three former ways,' were to have their wall thickness and room heights left to the builder's discretion, but the house could not be taller than four stories. The Act also specified that, 'The roof of ... the first, second and third sorts of houses respectively shall be uniform'.

The Act also determined that all the buildings were to be: 'Of brick or stone, or brick and stone, except door-cases, window-frames, breastsummers and other parts of the first storey to the front, between the piers, which are to be the discretion of the builder to use substantial oaken timber instead of brick or stone for convenience of shops'.

Regarding decoration, the Act stated, 'It is ordered that the surveyors take special care that the breastsummers of all houses do range of an equal height house with house... and that they do exchange and give directions to all builders for ornaments sake, that the ornaments and projections of the front building be of rubbed bricks...'.

In considering structural framing the Act specified that 'no timber to be laid within twelve inches of the fire side of the chimney jambs.

The Building Act of 1707 was also concerned with wall thickness and related design features.

'New houses shall have party walls wholly of brick or stone - two bricks thick in cellar and ground storey, thirteen inches thick upwards through all storeys to eighteen inches above the roof'. This code meant that a parapet eighteen inches high should divide the roofs of each house in a terrace.

Regarding the design of façades it stated that: 'No ... mundillion or cornish of timber or wood under the eaves', which meant that the characteristic carved eaves cornice along which flames could spread so easily from house to house was banished from the facade. In place of the cornice, the Act suggested parapets and it further mandated that front and rear walls were to be built of brick or stone and were to continue two feet six inches above the garret floor with no beams or rafters built into the brick work of gable ends.

Later in 1709 another Act was issued, supplementing that of 1707 which clarified by further legislation the security of structures. It also changed the facade design as it required that door frames and window frames of wood be inserted four inches (or 1 brick-width depth) into the wall.

In 1724 a clause in an Act specified that down pipes should be fixed to take water from roofs.

The 1774 Act established the building division into seven different classes or Rates according to their volume, expense of construction, use and position. It also specified the thickness for party and external walls for each class. All external walls were to be two and a half bricks thick at the bottom and then diminish.

'No timber hereafter to be laid in any party arch, nor in any party wall, except for bond to same, nor any bond timber, within nine inches of the opening of a chimney, nor within five inches of the full ... all framed work of wood for chimney breast to be fastened to the said breast with iron work as holdfast, wall hooks, spikes, ralls, etc... no

timber bearers to wooden stairs let into an old party wall, must come nearer than... four inches to the internal finishings of the adjoining building'.

Pombaline Decrees:[2]

'It is ordered that a survey of squares, houses and public buildings be carried out in the area ruined by the earthquake, in order to avoid dispute during the reedification.' (29/11/1755)

(V Prov. XIV)
(The Regent Duke, ordered)... 'not to erect any property in the ruined area, nor rebuild the buildings consumed by the fire after the earthquake, until the conclusion of the survey, and new orders from His Majesty'.

Regarding public works in the city of Lisbon: (12/5/1755)

'1- If the owners of the land wish to build they have to do so in accordance to the plan and are obliged to have the buildings completed within five years...'

'2- If the owners of the land, want not or can not build in the aforementioned manner...the task of reconstruction will be adjudicated by the Ministers, (...) to people who will build in accordance to the plan, and are also obliged to pay the owners of the land its fair value, as well as that of the building materials there found. ...
... neighbours will always be preferred in this adjudication...'

'3- In the main streets, which form the new arrangement became 50 palmos (0,22m) width, the old properties with less than 26 palmos (more or less two facade models) in the front should not be kept; on the contrary, those properties with less then the referred front, will be adjudicated to any next-door neighbour, under the fair value...'

[2] from: França J.A., Lisboa Pombalina e o Iluminismo, (Livraria Bertrand, Lisboa, 1977).

Extracts from Manuel da Maia's Dissertation:

First Part: 'It seems, however, necessary to establish if in the main streets arcades should be created as we had in Rua Nova dos Ferros and Confeitaria, for a comfortable walk during winter times'. (Ref. to Cabo Espichel - 4/12/1755)

Second Part: '... it is determined the right time to start a building and to complete it, under drawings supplied by the Senate architect Captain Eugénio dos Santos e Carvalho, in order to preserve the same doors, windows and height symmetry;'

'...every street must keep the same symmetry... in respect of doors, windows and height.'

'The first floor, that is to say, the first floor above the ground floor, was to be higher was fixed at 80 feet. The distance between buildings in the large streets is 14m and in the narrow 8m, the space between the backs of the houses is 4m.'

'It is established that between two different properties, frontal division should not exist, instead a structural wall should be used..., these walls should go 8 palmos up from the frechal...'

'The two better known European renovations, have been those of London and Turin; and wishing to know about its execution without a book to help me, nor public library... I was obliged to beg in the "History of England" which includes the year 1666 where I could not find satisfactory information; and look at the Geographic Dictionary by Martinière where he presents the London streets as the ones in the town of Tomar... The renovation in Turin, was not (as it is said) carried out by demolishing old Turin in order to make the new Turin, because it was in fact to add new Turin to the old one,...; so I can conclude that the Lisbon renovation has much more to consider than the Turin argument.'

'What we still have to establish is if the main streets should be divided in three parts as those in England; and if we should use arcades in some streets as we had in Rua Nova dos Ferros and Confeitatia. I think that in Terreiro do Paço the arcades would be

useful and pleasant, however in the streets with shops I think arcades should not exist...; I declare that the streets in England have three divisions, the one in the middle is the wider and is used by coaches; the two at the sides were for people on foot... the main streets are excessively wide,... what we could do with 45 or 50 palmos, being the pavements 10 palmos each; however I do not agree with this street division because...this division does not seem appropriate for festivities as it would be difficult to keep them in its proper state.'

'In England the streets are longer than in Lisbon and the building owners would complain of the streets width, because as they are only allowed to build two storeys above the shops that would take a large area of land to build.'

'In fifth place I offer a plan of a street of 60 palmos width reproducing some of London, divided in three sectors, being the middle 40 palmos for the coaches and people on horseback, and two by the sides with 10 palmos width.'

'... after the new streets were laid down, the new buildings replaced and its importance or value regulated, ... and when each building creditor who had received from the evaluation a lot of land, was not pleased, it should be sold to someone who could give its right value ...; and in case of any doubt, His Majesty should order and pay for the construction in order to guard as heritage its income because this seems to me the most convenient and quick way, persuaded (believing this was the way Turin and London adopted when similar renovations took place there).'

It seems that the military architects' 'cultural isolation' (so often referred to by Portuguese historians) did not in fact exist. The most important foreign authors on the subject of fortifications had already been acknowledged. Some years before the earthquake Manuel da Maia translated two works related to theories of military architecture. One was O governador de praças (The Garrisons Governor) by António de Ville, which was translated in 1708; the other translated in 1713 Fortificaçam moderna ou reconstruçam de diferentes métodos de fortificar de que se usam na Europa os Espanhois, Franceses, Italianos e Holandeses... (Modern fortification or reconstruction of different methods of building forts used in Europe by the Spaniards, French, Italians

and Dutch...) was written by Pfeffinger. In this book, Pfeffinger describes the way of setting out infantry and cavalry encampments; a common feature there is the established hierarchy between the soldiers and the officers arrangements (alignment) which are of major importance in the encampment.

It can be argued that in Baixa Pombalina we find the same hierarchical attitude; we can define the 'soldiers' area as that occupied by the quarters between Ouro and Fanqueiros street, Rossio - Praça da Figueira and Conceição Street; the 'officers' area comprised that between Conceição Street, Comércio Square - Arsenal Street and Alfândega. The formal analogy between the encampments shown by Pfeffinger and the present plan of Baixa is not incidental.

Luiz Serrão Pimentel, (Royal-Engineer) in 1680 published Método Lusitânico (The Lusitanian Method) presenting and comparing the fortification methods from Samuel Morolois, Adam Fritach, Mattias Dorgen, Nicolao Goldman, André Cellaric, Conde de Pagan, Bonallinto Lorini, Jerónimo Caetano, António de Ville. Manuel da Maia was Luiz Serrão Pimentel's contemporary and had attended the Military Academy where the latter was a professor.

In 1729, Manuel de Azevedo Fortes (also Royal-Engineer) published The Portuguese Engineer based on works from Hyeronimo Maggi, Jacomo Castrioto, previously published in 1583 in Folio in Venice. He declares that his method was based on António de Ville, Pagan Conte and in Vauban's.

The presence in Portugal of foreign names such as Nazoni and Terzi was very strong. Some doubts still remain regarding the debate on the Italian, British and French influence in Baixa.

Appendix 3

The 'Indies Laws' of King Carlos V (1578)[1]

Due to their importance as being the first Royal Ordinances for planning the Spanish cities in South America, some of the most important items are reproduced here:

* Upon arrival in the locality where the new settlement is to be founded (it is our wish that this should be an unencumbered locality, and occupiable without giving offence to the Indians, and with their agreement) its layout, with squares, streets and building lots should be outlined on the ground by means of cords and pegs, starting from the main square from which the streets should run towards the gates and the principal cross-country roads, and leaving enough open space, so that the city, having to grow, may extend continually in the same fashion...

* The Central Square should be at the centre of the city, of a long shape, with the length at least one and a half times the width, since this is the best proportion for festivals in which horses are used, and for other celebrations ... the size of the square shall be proportionate to the number of inhabitants, bearing in mind that the cities of the Indies, being new, are subject to growth; and indeed it is our intention that they shall grow. For this reason the square shall be planned in relation to the possible growth of the city. It should not be less than 200 feet wide and 300 feet long, nor wider than 500 feet or longer than 800 feet. A well proportioned square of medium size shall be 600 feet long and 400 feet wide.

* The four main streets lead out of the square, one from the middle point of each side, and two from each corner. The four corners should be aligned with the four cardinal points, because in this way the streets leading out of the square will not be exposed directly to the four winds...

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[1] Benevolo, L., The History of the City, Scollar Press, London, 1980, pp.626 - 628.

* In the cities of the interior the church should not stand on the perimeter of the square, but at such distance as to appear free, separate from the other buildings so that it may be seen on every side; in this way it will appear more handsome and more imposing. It should be built above the level of the ground, so that the people must climb a series of steps to gain entrance to it ... 'The Hospital of the poor', when the ill are not contagious, shall be built on the northern side, so that it faces south ...

* The building plots around the main square should not be granted to private people, but reserved for the Church, the Royal and Municipal buildings, the shops and residences of the merchants, which should be the first to be built...

* The remaining plots shall be distributed by lot to those colonists who are entitled to build around the main square. The unassigned plots should be reserved for those colonists who will be able to come later, or for disposition according to our wishes.
* Arcades were prescribed for the plaza and the four principal streets that set out from it, because they were considered very convenient to the merchants who generally gather there.

Appendix 4

Building Condition Criteria

The external fabric conservation is considered:

(i) Good, when the building does not need repair works, it only needs routine or day-to-day maintenance: which is largely of the preventive type, such as checking rainwater gutters and servicing mechanical and electrical installations; there are no surface cracks, the edges are complete; no distortions in the ornamentation and other elements of the facade; the metal elements are not corroded; there is no damage resulting from infiltrations.

(ii) Reasonable, when the building needs minor repair works and is structurally sound, it needs periodic maintenance; when it needs painting or surface repair (but with the masonry in good condition) when the surface has superficial cracks or fissures; when the edges are slightly damaged (however showing clearly geometry of the facades); when there is not a general infiltration of water and the metal corrosion is slight and easily repaired (as in the gutters, water pipes and balconies); when the roof shows broken or dirty tiles); finishings and projected elements need minor repair; when there are no elements likely to fall in the street.

(iii) Bad, when the facades need radical conservation work, and the building needs major repair or restoration: such as re-roofing or rebuilding defective walls and often incorporating an element of improvement. When there are cracks all over the building and fissures in the masonry and the building is not structurally sound; when the edges are very damaged; when the water infiltration is generalized; when there are signs of landslip or erosion of slopes, such as surface ripping or tension cracks on the surface; when there is movements in the foundations; when it is necessary to replace parts of the

building components (frames, doors, windows, masonry, etc.) when corrosion is vast and forces the replacement of those damaged elements; when the foundations are very deteriorated with their original geometry affected (signifying that the structure is affected).

(iv) Ruin, when the building is not able to be rehabilitated.

The internal fabric conservation is considered:

(i) Good, when there are fine cracks inside the building which can be remedied during normal decoration and when there is no damage resulting from infiltration.

(ii) Reasonable, when cracks require opening up, external brickwork repointing and possibly small amounts of brickwork replaced; when doors and windows stick; service pipes may be fractured; weathertightness often impaired.

(iii) Bad, when extensive repair work involving replacing sections of walls and windows is needed. Window and door frames distorted, sloping floors, leaning of building walls, some loss of bearing in beams, and service pipes disrupted. Floors and stairs show insect attack; the walls show fungal attack and condensation is causing damage to roof timbers.

(iv) Ruin, when the building requires a major job involving partial or complete rebuilding. Beams lose bearing, walls lean badly and require shoring; windows are broken with distortion; when there is danger of instability.

The principal defects found in these buildings include:

1. The roof, usually presenting the greatest difficulty to survey, however in Baixa Pombalina the conventional pitched roof of tiles has easy access through its mansards. The great vulnerability in these pitched roofs are the openings or projections through the roof's surface. Most chimney stacks are cut through the tiled areas and both the position of flashings and the method of construction should be closely inspected. The

rear of the chimney stacks are often finished with a small gutter section and are filled with rubbish specifically from the large amount of pigeons living in the area, therefore almost impossible to examine. These are regularly a point of failure on the surface of the roof.

The pitched roof is set between raised party walls which act as a fire barrier to prevent the spread of fire from one building to the other. Alternatively, the junction between the tiles or slated surfaces and the raised party walls is not adequately flashed to prevent moisture penetration. The walls separating buildings, are also breached by many openings used to connect buildings.

Defects in parapets are very common and any light fractures in them allow water penetration which eventually leads to deterioration in the members of the roof. Broken tiles are often seen.

2. It was also possible to examine some structural timbers in very deteriorated areas such as kitchens and stairs. These very old structural timbers are most likely to fall victim to death which can lead to severe structural weakness and eventual collapse. Various types of fungal decay and insect infestation could be seen.

3. Most lialing pipes outside the buildings leave tell-tale marks and failure of what can be readily noticed. External services must all be closely examined as their failure is frequently the cause of rot or decay within a building. Lead pipes for soil or rainfall have failures which are frequently caused by the shrinkage of the metal, stretching the pipe at the joints. Hoppers at the head of waste pipe are frequently blocked. They are also vulnerable to splitting at the back, or at the collar at the junction with the downpipe.

4. Stone coping and parapets are often broken by the growth of vegetation which is probably being fed by water collecting above.

5. Rendering usually consists of a weak mixture of lime sand and cement mortar. Where there is a fracture in exposed conditions water penetration occurs which then gets

behind the rendered surface. A consistent wetting and drying of the render and brickwork results in salts being brought to the surface which will break the rendered panels. Because the render is a monolithic surface it tends to show up any movement or structural failure in the property to which it has been applied. Failures are also due to insufficient cement content in original cement/lime/sand rendering.

6. The external paintwork is in bad condition.

7. In the interiors, especially in the rooms facing the light-well, mould growth was found, which is one of the symptoms of surface condensation. This condition occurs initially as spots increasing to larger patches and occurs in varying colours, usually green, black or brown.

8. Putty and paint failures on doors and windows, and rotten bottom door panels are frequently seen. The wooden floors and stairs are very old showing movements and holes especially near the entrances, steps and kitchens.

9. There is substantial evidence that rain water can become a toxic fluid when it mixes with some pollutants held in suspension in the air in Baixa. Calcareous sandstone whose principal binding medium is calcite has been already attacked by rainwater which was acidified by the polluted air.

Appendix 5

Project Implementation

This appendix aims to provide ways for the implementation and funding of the proposal presented in Chapter 12. In order to deal with these particular issues, the option is to explore how other countries have been dealing for a long time with these matters; although of course, solving their own problems in their own context. However it seems relevant to understand their experiences in order to propose directions for this conservation project. More work must be done to present the correct subsequent proposal of implementation, funding, grants and loans within the Portuguese legal context.

Implementation of comprehensive conservation presents those responsible for the cultural heritage with new targets, and dictates new methods which are important for its successful implementation. Here, the implicit assumption is for strong intervention by the city council and government. It is necessary to consider the constraints which are critical in obstructing the implementation such as the city's economy, financial viability and legal and administrative powers.

These aspects cannot be studied and acceptable solutions sought at the level of the architectural complex itself, but only at the level of the town and metropolitan area in which it is located. Those working on the project should accept the need for close co-operation with planners and with the local authority; it is also necessary to set up multi-disciplinary teams of specialists who can produce balanced projects which both conserve the architectural heritage and integrate it into community life. Lastly, the local community will have to be included in the process.

The legislative and administrative decisions which determine the future of the architectural heritage rest mostly with governments, and local authorities, but in a democratic society the authorities are surely influenced by the attitude and willingness

of the electorate. One question then arises: does the local authority have sufficient and adequate power to implement a proposal for comprehensive conservation?

The answer is positive regarding policy since the whole of the approach has been developed in order to provide an input in the area. The policy was defined in terms of floorspace/use and those are in accordance with the limits in the existing planning legislation. However a problem remains related to such policy, which may be either desirable of itself or may be necessary where the owners and occupiers of properties are not able or willing to co-operate. Therefore what should be the attitude of the local authority in such cases?

Local authorities are now deeply involved in economic and physical conservation. But they also need to look at the ways of encouraging such schemes without being directly involved themselves. First there is the preparation of strategies and this is most noticeable in areas where there are many empty buildings. The first move would be to analyze the problem and the real opportunities, then to mobilise public funding from all the available sources. In all cases the funding sources will want to know if the proposed individual projects are part of a concerted strategy.

The preparation of a strategy by the local authority in consultation with building owners and the local community can help to co-ordinate different departments and also to encourage property owners to contribute through their own actions. Secondly, where funds are packaged from different sources, the use of *trusts* to promote and organise schemes has been largely used, as, for instance, in England. The local authorities sometimes encourage the formation of such trusts and channelling their own contributions through them.

In order to implement a comprehensive conservation policy, the government authorities will be obliged to: (i) review the whole series of legal provisions related to the protection of the cultural heritage of buildings, monuments and sites in order to adapt them to meet different aims; (ii) review some provisions embodied in legislation in the fields of physical urban and regional planning and housing because they have often been previously framed for the benefit of those supporting redevelopment and not for those

supporting conservation of the architectural heritage; (iii) co-ordinate the provisions expressed above in order to ensure that they complement each other and that disputes concerning competence are avoided.

These legislative reforms might be developed in various different ways, such as by taking the form of a new consolidated law on the protection of the architectural heritage, or by amending existing legislation. Constant Pirlot, in his report on legislation and administration, advocates the use of a single act for regional development and conservation of the architectural heritage. This solution, proposed by the two ministers concerned and conceived as an outline law defining the main aspects of a policy that would place the two parties involved in urban planning - namely the protagonists of redevelopment and those of rehabilitation - on equal footing.[1]

It is obviously important to have a law regarding the protection of the cultural heritage which defines the legal scope of this concept, and more specifically its aims. It is also important that the policies which support comprehensive conservation i.e. the conservation of the architectural heritage and its integration into the framework of community life, should be reflected legally.

In Portugal, although comprehensive conservation started in 1975 with the Barredo experience in Oporto, there is no standard definition of what the term 'conservation area of historical or cultural interest' should mean in the national legislation. (Chapter 10) Because there is no specific legislation in Portugal for the designation of conservation areas a probable scenario could occur: The High Council of Fine Arts gives an opinion to the Ministry of Education and to the Ministry of Culture; this latter submits any proposals related to listed buildings or areas of protection to a consultative body, the Portuguese Institute of Cultural Property. There is also the 'Municipal Commission of Art and Archaeology' which can give an opinion to Local Planning Authorities.

The British experience on conservation has a long and distinguished background, thus it will be referred to here in order to exemplify and demonstrate those aspects of

[1] Pirlot, C., 'Legislation and Administration' in: Congress on the European Architectural Heritage, Council of Europe, Amsterdam, 21-25 October 1975, p.7.

legislation and financing that have been a success in protecting Britain's townscape, at least since the 60s and 70s.

In Portugal local authorities need approval by the Ministry of Culture for any important decision they propose to take and implement, whereas in Great Britain the designation and demarcation of conservation areas is the responsibility of the Local Planning Authorities. Local Authorities are also legally able to negotiate directly with the private sector and not through a central body as most often happens in Portugal, and to support the demands of local development initiatives sustained for instance by local amenity groups. This direct involvement thus helps in the implementation of rehabilitation schemes.

In Great Britain most of the designations are made by District Planning Authorities and the London Boroughs. The Secretary of State has the power to make designations (but he has never used it and circular 8/87 makes it clear that he would do so only very exceptionally).[2] County Planning Authorities also have a power of designation, but the relevant district must be consulted. In London, the powers of designation are assumed by English Heritage in consultation with the London Boroughs. From the moment the Council decides to designate a Conservation Area, it will be obliged to: (i) put a notice of the designation in the London Gazette and in at least one local newspaper; (ii) register the designation as a land charge, which is as near to official notification as some householders will get; (iii) inform the Secretary of State and the Historic Buildings and Monuments Commission of the designation.[3]

The British legislation has specific provisions on the right to appeal and on the competent bodies to decide such appeals. However the public has the right to inspect all the plans concerning any proposed development and to make representations, which Local Authorities must consider before determining the application.[4] Section 71(1)

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[2] Ross, M., Planning and the Heritage, Policy and Procedures, E & F. N. Spon, Chapman and Hall, 1991, p. 121.

[3] ibid. p.121.

[4] T.C.P.A., 1971, S.29(4).

places a duty on planning authorities to formulate and publish from time to time proposals for the preservation and enhancement of their conservation areas, and sections 71(2) and (3) require that such proposals should be submitted for approval at a public meeting and that the authority should have regard to the views expressed at that meeting.[5]

A local group's work is most often organized through Conservation Area Advisory Committees. They are voluntary and non-statutory local groups, whose establishment was first recommended in 1968. They are usually happy to be asked to help and give their views on applications which would affect the character or appearance of a conservation area.

The designation of a Conservation Area represents an obvious and positive response to the conservation legislation, but it is not necessarily a reliable guide to an authority's commitment to conservation.

The principal effects of the designation of a conservation area are summarised by Mynors and are as follows:[6]

Duties of the Local Planning Authority: The Local Planning Authority is under a general duty to ensure the preservation and enhancement of conservation areas and a particular duty to prepare proposals to that end.
Buildings in disrepair: The Local Authority may be able to take steps to ensure that a building in a Conservation Area is kept in good repair.
Financial assistance: Limited financial assistance may be available for the upkeep of a building in the area.
The need for planning permission: The details as to limits of what works may be carried out without planning permission are somewhat different.
Planning applications: Extra publicity is given to planning applications affecting Conservation Areas; and the Planning Authority is to take into account the desirability

[5] ibid. Ross, p.135.

[6] Mynors, C., Listed Buildings and Conservation Areas, Longman Practioner Series, 1989, p. 43.

of preserving and enhancing the character of the Area when determining such applications.

Conservation Area Consent: Conservation Area consent is required for the demolition of any unlisted building in the Area; and the Local Authority may take enforcement action or institute a criminal prosecution if consent is not obtained.

Works on trees: Notice must be given to the Local Authority before works are carried out to any tree in the area.

Advertisements: The display of advertisements may be somewhat more restricted.

The most important issue is that *"Local Authorities stand in the vanguard of those protecting historic buildings and areas, and the Secretary of State hopes they will make diligent use of them"*.[7]

A Conservation Team must be established and this should have sufficient stature to command ready support and promote delegated action in a spirit of mutual trust. Within it, the conservation officer holds a key position in establishing good relationships between the owners of the buildings needing help and the source of that help. Also important is the presence of a consultant who makes possible the assistance of specialists in architecture, structural and quantity surveying work on historic buildings.

It is important to take into consideration the effects legislation has on immovable property while protection and conservation takes action. As an illustration, regarding the transfer of property in Portugal, the Decree of 7 March 1933 states that when a property changes hands it does not alter the responsibility arising from its classification as a National Monument, and says that the legal documents relating to this transfer must contain the obligations of the owner or the tenant. The State Authority must immediately be notified of the transfer of property. The State then can acquire the property or not, using its right of preemption, within two months of the notification.

Another aspect of development is the upkeep and maintenance; in Portugal the owner or tenant has a fixed period in which to execute the work. If it is not done, the State

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[7] Circ. 8/87, para.5.

has the power to order it to be carried out at the owner's or tenant's expenses. However, if they then are not able to do so, the State can pay, although this is exceptional, sometimes in part, occasionally totally. In Great Britain, Section 4 of The Historic Buildings and Ancient Monuments Act 1953 establishes that grants can be made for defraying any expenditure incurred in the repair or maintenance of historic buildings, their contents and adjoining land. Section 48 of Ancient Monuments and Archaeological Areas 1979 amended the previous Act.

Regarding advertisements, the Portuguese legislation (Decree no. 20985 of 7 March 1932) holds that it is forbidden to erect any advertising on classified properties and if that should occur in other place thereby spoiling the view of the property, the same prohibition applied. On the other hand, in Great Britain there is no specific legislation on this issue, only Article 1 (2) of the Ancient Monuments Act 1931, but planning permission would be required. This is a preservation scheme, which might put some restriction on the use of the land within the controlled area in order to preserve the amenities of the monument. This can include the same aspects of erecting advertisements or holding as mentioned in the Portuguese case.

Additionally, the problem of multiplicity of ownerships and tenancies within a building (which in most cases turns out to be an obstacle to conservation) must also be solved. This will be the major difficulty the local authority will find in Baixa. It will be complicated to implement this project of comprehensive conservation, for which it is necessary not only for an agreement among the different owners in the building, but also of the whole block. This dilemma must be solved not only from the point of view of legislation, but above all from an increased responsibility of the local authority, on its administrative power and on the available funding.

In relation to *funding*, two questions arise: *why* should the architectural heritage be funded? and by what *means*?

The first question will be easily answered, immediately related to its importance. 'The architectural heritage is a capital of irreplaceable spiritual, cultural, social and economic

value'.[8] Or investment for cultural purposes will not only have direct economic effects on the consumption of goods and services and on employment, but will also have a multiplying effect that will be more than directly proportional to the amount invested.

Funding the Architectural Heritage is a way of giving effective economic expression to popular feelings about preserving the buildings for which people care. There is an increased interest in the heritage, and this new public concern has become a powerful political force which gives expression to legislative measures to protect the heritage in most countries.

The second question is more difficult to answer in the present economic situation because choices have also become more difficult. Revenue from taxation has reached a ceiling, whereas the effects of the crises are greatly increasing the need for social intervention. Large scale action in old districts usually involves mobilising private capital. Direct or indirect financial aid by the public authorities will thus be all the more effective if, by a <lever effect>, it also generates private enterprise financing.[9]

There is always the problem of financial viability which is applied to either the private owner and developer or the city council. The question is then related to whether the uses to which the buildings are put will generate sufficient income to restore and maintain them, and whether the authorities can subsidise the environmental improvements out of their rates and central government grants. The main financial problem is how to reconcile necessarily limited means with financial requirements that are always substantial. The choices that must be made are policy options.

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[8] European Charter of the Architectural Heritage, adopted by the Committee of Ministers of the Council of Europe on 26 Sept. 1975.

[9] Lacaze, Jean-Paul, 'Problems of Financing Conservation of the Architectural Heritage', at the 5th European Symposium of Historic Towns, Seville, 8-10 May, Council of Europe, Strasbourg, 1985, p.8.

Several forms of aid can be used either for the public authorities or in the private sector. For the first Lacaze[10] considers:

1. Direct budgetary aids, such as *home improvement aid* and *aid to occupiers*.
2. Indirect regulatory aid, such as *tax relief* and *rent regulation*.
3. Institutional financing systems, such as 'Building Societies'.

Attention will be focused on some of these forms of aid that are less developed in Portugal.

Direct budgetary aid depends on the character of the legislation concerning preservation in each country. Public authorities find themselves in the position of giving subsidies to private owners (in order to help them to maintain their buildings) or having to accept rebuilding or demolition.

Home improvement aid can take a form of grants of interest-rate relief, or of access to preferential financing sources. Buyers of old or new housing have often benefices from aid of the same type, however the system varies from country to country. The system of *aid to occupiers* is intended to reduce the cost of housing for households of limited means. These aids are calculated according to complex scales which take into account both the income and expenditure on housing - rent or instalments on repayment of home purchase loans. This is generally paid every month, directly by the state or by national institutions and reduces the strain on households.

The indirect economic effect of this aid is that it is then possible to charge normal rents, so that the building cost can be recovered at a reasonable rate, and allows a wider choice to those looking for a home. This requires a complex management and inspection of incomes, and an adjustment of the level of aid which should be related to inflation and to the number in the household.

[10] op.cit, Lacaze, Jean-Paul, 1985, p.10.

Tax Relief is already applied in many countries although not so much in Great Britain, and takes the form of an authorization to deduct from taxable income part of the cost of house purchasing, of improvement of old housing, or of certain particular forms of building work, for example work intended to save energy. Tax relief should be regarded not only *'as compensation'* for costs imposed on the owners of property forming part of the historic heritage, but also because public authorities have not achieved an adequate level of preserving the cultural heritage and therefore need to involve the community.

This system has the advantage of giving owners greater scope, while encouraging them to shoulder their responsibilities, and can be granted in a flexible way, without adding to the cost of supervising borne by public funds.

There is a special problem in most European countries which is value added tax (VAT). Most of the countries have differential rates for VAT, for instance in Portugal we have two rates, one is 8% and the other 16%, the first is for public works. In Great Britain maintenance work is subject to VAT, while new building is not, and in Denmark VAT is of such a size that it almost swallows the direct subsidies for restoration from public authorities (VAT is 15% on final costs: the government grant amounts generally to 20%).[11] The Common Market countries aim for an international solution on these and other problems related to VAT.

The Amsterdam Declaration states, as did Recommendation 880 (1979) that 'increased financial assistance from public sources should be made available:
(i), ..., (ii) to private owners for the maintenance of listed buildings, by means of grants, loans at low interest rates and tax concessions; (iii) to donors of funds for architectural conservation, by means of tax relief'.

Fiscal aid encourages people to put their savings into property and has considerable economic effectiveness; however there is a loss of revenue to the state budget. Its effects are not always very equitable: if the system for calculating deductions is simple,

[11] Nielsen, V., 'Financial Means for Conservation and Restoration Operations', Congress on the European Architectural Heritage, 21-25 Oct., Council of Europe, Amsterdam, 1975.

it is likely to favour well-off households at the expense of those on low incomes.[12]

Rent Regulation protects tenants against unreasonable increases in rent or against unjustified refusal by landlords to renew leases. This regulation can bring certain economic disadvantages such as, less fluidity in the market for rented property, creation of advantages for sitting tenants, poorer maintenance of the housing, since landlords have less money, sometimes not even enough to preserve the capital value of the buildings. However, if the legislation on rents allows for the possibility of linking a rent increase with carrying out improvements, that problem can then be minimised.

Building Societies are separate legal entities subject to their own special laws; they are neither companies nor banks. The 1962 Building Societies Act determines that building societies exist for the benefit of their members and the legislation is designated to protect them. They are not allowed to intrude in any other kind of business, cannot be owned by any other financial institution and cannot have subsidiaries of any type. They have been cooperating with the Local Authorities in many fields such as for conservation finance.[13]

It is particularly important to mention here the British system of grants to buildings in conservation areas and historic towns as they have proved to be a successful way of protecting the heritage since the sixties and seventies.[14] In Great Britain grants from Central Government are available in three forms: *grants for Historic Buildings and Ancient Monuments; Conservation Area grants; and Town Scheme grants.*

Under the Historic Buildings and Ancient Monuments Act Grants the Secretary of State '*may out of money provided by Parliament make grants or loans ... for the promotion of the preservation or enhancement of the character ... of any Conservation Area, in*

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[12] op. cit., Lacaze, 1985, p.13.

[13] See: Newcombe, G., 'Buildings and Society. Building Societies', M.A. at the Institute of Advanced Architectural Studies, University of York, 1979. And Ghosh, D., The Economics of Building Societies, Saxon House, 1974.

[14] See: Scott, L., 'Traditional and other Methods of Financing Conservation in the United Kingdom', MA, at the Institute of Advanced Architectural Studies, University of York, 1983.

cases where, in his opinion, the expenditure will make a significant contribution'[15] This Act allows for the provision of grants to Local Authorities towards the costs of compulsory acquisition under section 47, and for the provision of a grant to the National Trust for the protection of land, buildings and gardens of outstanding interest.

Local Authorities have their own power under section 57 of the 1990 Act to make grants or loans towards the repair or maintenance of buildings of architectural or historic interest (whether listed - i.e., of special interest - or not). Funds are usually very short but some authorities are able to make good use of this power. Sometimes they make the grants alone, and sometimes in co-operation with Central Government.

Conservation Area Grants are also available under section 77 of the 1990 Act and are allocated for work which will make a significant contribution towards preserving or enhancing the character or appearance of a conservation area. These grants are awarded by the Historic Buildings & Monuments Commission but are usually supported by Local Planning Authorities. Similarly, Town Scheme Grants are also administered by that Commission; however they are concerned with conserving the fabric of buildings as well as their appearance.

Town Scheme grants are paid under section 80 of the 1990 Act and are administered by the Commission. Grants are paid in respect of expenditure on the repair of a building which is in a town scheme and appears to be of architectural or historic interest. They are run jointly by the Commission and the Local Authority and are directed at enhancing the appearance of a historic conservation area.[16]

Mention must be made of the most important statutory bodies, such as the *Historic Buildings and Monuments Commission for England*, which was set up in 1983 and now is concerned with many of the functions previously exercised by the DoE. Its income comes largely from Government grant-in aid, however it is an independent commission

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[15] Historic Buildings and Ancient Monuments Act, 1953, S.4.

[16] op cit.,Ross, 1991, p. 159.

which assigns "English Heritage Grants".[17]

There is also the *National Heritage Memorial Fund*,[18] (established in 1980 as the successor to the National Land Fund) a government agency responsible for the largest grants. The *Architectural Heritage Fund* is now an independent charity administered by the Civic Trust and gives short term capital to help Building Preservation Trusts to acquire and restore buildings.[19]

As long ago as 1877, with the foundation of the Society for the Protection of Ancient Buildings by William Morris and others, the role of the Amenity Movement in Britain began to make a contribution to the protection of the heritage. Apart from the statutory bodies there are voluntary ones. These can be divided into two categories: those whose main aim is practical conservation work, and those whose main purpose is simply to lobby Government, either generally or on some particular aspects of conservation.

In the first group is included the *National Trust for Places of Historic Interest and Natural Beauty*,[20] one of the oldest and most respected conservation bodies. Registered in 1895 and now with a membership of 1,7 million, it has confined itself exclusively to the care of several hundred historic properties and areas of land acquired through gift and purchase. (It owns over 240 historic buildings) There is a parallel National Trust for Scotland which was founded in 1931.

The Architectural Heritage Fund, is also an important organisation which emerged from the European Architectural Heritage Year in 1975. It provides a cheap source of finance for local preservation trusts, supplementing capital that they raise themselves or obtain

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[17] Suddards, R.W., Listed Buildings, Sweet and Maxwell, London, 1988, p.271.

[18] See Bemrose, A., 'Building Preservation Trusts and Revolving Funds in the United Kingdom', Funding the Architectural Heritage, Council of Europe, Strasbourg, 1987, pp. 23-27.

[19] The Architectural Heritage Fund, London, Civic Trust, 1977.

[20] A building preservation trust is usually a corporate body: it is a company limited usually by grantee. It has no share capital, it almost always has charitable status which means that donations to charitable bodies get quite realistic and very useful tax relief.

from other sources.[21]

Building Preservation Trusts vary from those that are set up specifically to deal with one building, or with a town, a district or a country area. This form of trust is based on the theory of a revolving fund which looks at every project on its own and attracts finance on the basis of that project. Short term loans finance the revolving fund. In the end the money from the sale goes back into the revolving fund and is payed back to the people from whom the money was borrowed, and by the end there should be a small surplus which should go back into the trusts own fund and it will revolve into the next project and so on.[22]

The principal source of funding building trusts is the Architectural Heritage Fund which is also a charitable trust and therefore it is set up with money provided almost equally by government and private sources. This will lend - if they have it, money at a low rate of 5% interest. This is the first source, however other ways have to be developed. For instance, to attract outside finance to a company in order to make investment there has to be a 'pay-back to it'. This is one of the principles the building trusts uses to persuade companies to accept the financing of a project. For example, good public relations can be utilized when supporting a conservation project which benefits the community. In Great Britain the Building Societies are one of the major financial sources of the trusts.

Other voluntary bodies that take a positive role in the preservation of old buildings are: The Landmark Trust, The Pilgrim Trust, etc. Among the various lobby organizations, the Civic Trust founded in 1957, showed the first sign of concern arising from the poor quality of much modern architecture and planning.[23] The Civic Trust does not own property, nor is it a society with members. Its main contribution has been to promote conservation areas as a whole and has demonstrated a respect for historic fabric. It is a charity supported by voluntary contributions and also a pressure group and a co-

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[21] op cit, Ross, p.66.

[22] op cit, Bemrose, 1987, p.23.

[23] op cit, Ross, p.66.

ordinating body for approximately 1.000 Local Amenity Groups throughout the country. In this same group is included: Council for British Archaeology, Ancient Monuments Society, Society for the Protection of Ancient Buildings, Georgian Group, Victorian Society, Thirties Society, Joint Committee of National Amenity Societies, Save Britain's Heritage, Garden History Society, and many others estimated now to total 1200 societies with 300 000 members.[24]

Chester, Bath and Edinburgh, are three examples of British cities, to which the concept of conservation has been applied, and are now presented here to illustrate how these cities solved their problems of architectural and urban decay. These cases have to be considered within the British legislative and administrative context, which is very different from the Portuguese as seen earlier. Nevertheless, lessons can be learned and methods adapted from these specific projects of conservation.

Chester and Bath, along with York and Chichester, are part of a group of cities for which the Minister of Housing and Local Government commissioned a pilot conservation study in 1966 (see Figure A5.1). The purpose was to discover how to reconcile old towns with the twentieth century without actual material destruction. Later the Civic Amenities Act 1967, gave recognition for the first time to the importance of whole groups of buildings of architectural and historic value and required local planning authorities to designate 'Conservation Areas' and to pay special attention to enhancing their character or appearance.[25]

In Chester the first action began with an alert to the local authority and central government of a financial commitment for effective action. That decision started with the conservation study and was followed by the city council's decision to fully commit the city to an active conservation programme. The main innovatory decision was to levy a special conservation rate. Each year the product of a 2d rate (then £29.000 | £116.000|) was put into a *Conservation Fund*, which was so organised that it could be

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[24] op cit, Ross, pp.67-69.

[25] See Insall, D. W., and Associates for Chester, A Study in Conservation, Report to the Minister of Housing and Local Government, 1968. Burrows, G. S., for Chichester; Esher, V., for York and Buchanan, C., for Bath.

carried over from one financial year to the next.[26] The fund has been used for both the repair and improvement of properties and has been combined with Historic Building Grants from the DoE. The rate level was increased, but by 1974 it was not yet sufficient to cope with the scale of the works. But during the next two years it was increased, bringing in £100.000 [£175.000] per annum. Later in 1976-77 and due to the general economic situation the fund was cut back to £80.000 [£132.800] and in the following year to just £50.000 [£74.000]. Then in 1979-80 it rose to £90.000. Most of the money from the fund was allocated to the *Town Scheme*, when it was matched by Central Government.

The annual DoE allocation for 1970-71 to Chester was £10.000 [£40.000], but from 1973-74 it increased to £100.000 [£184.00] per annum. By 1975 some £200.000 of public funds was being attracted to the Town Scheme.

Conservation Area Grants were also used in Chester, under Section 10 of the 1972 Town and Country Planning (amendment) Act for the enhancement of 'outstanding' conservation areas. From this financial assistance and a 50% contribution towards the Insall consultancy, the city was able to pay a full-time conservation officer.

Under the Town Scheme the contribution is usually divided equally between the Local Authority and Central Government, and amounts to half the total cost of repair work. However, when the Local Authority owns the property it will have to find three-quarters of the cost. Chester's City Council was also encouraged to purchase endangered buildings, for which the DoE agreed to contribute 50% of the total cost of the repair following acquisition by the city. Later in 1974 an addition of £50.000 [£87.500] was made by the DoE to help the city to buy properties.

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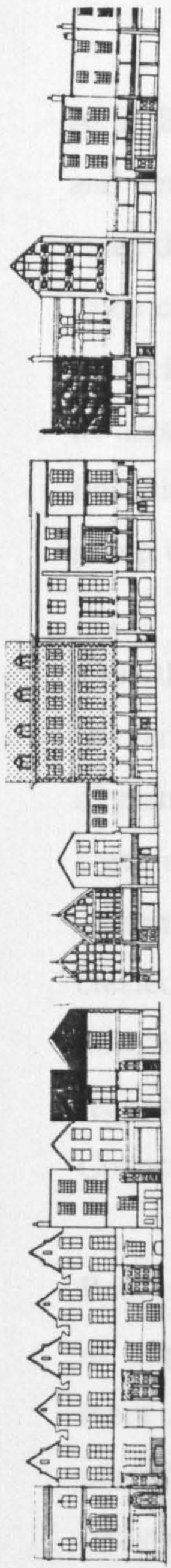
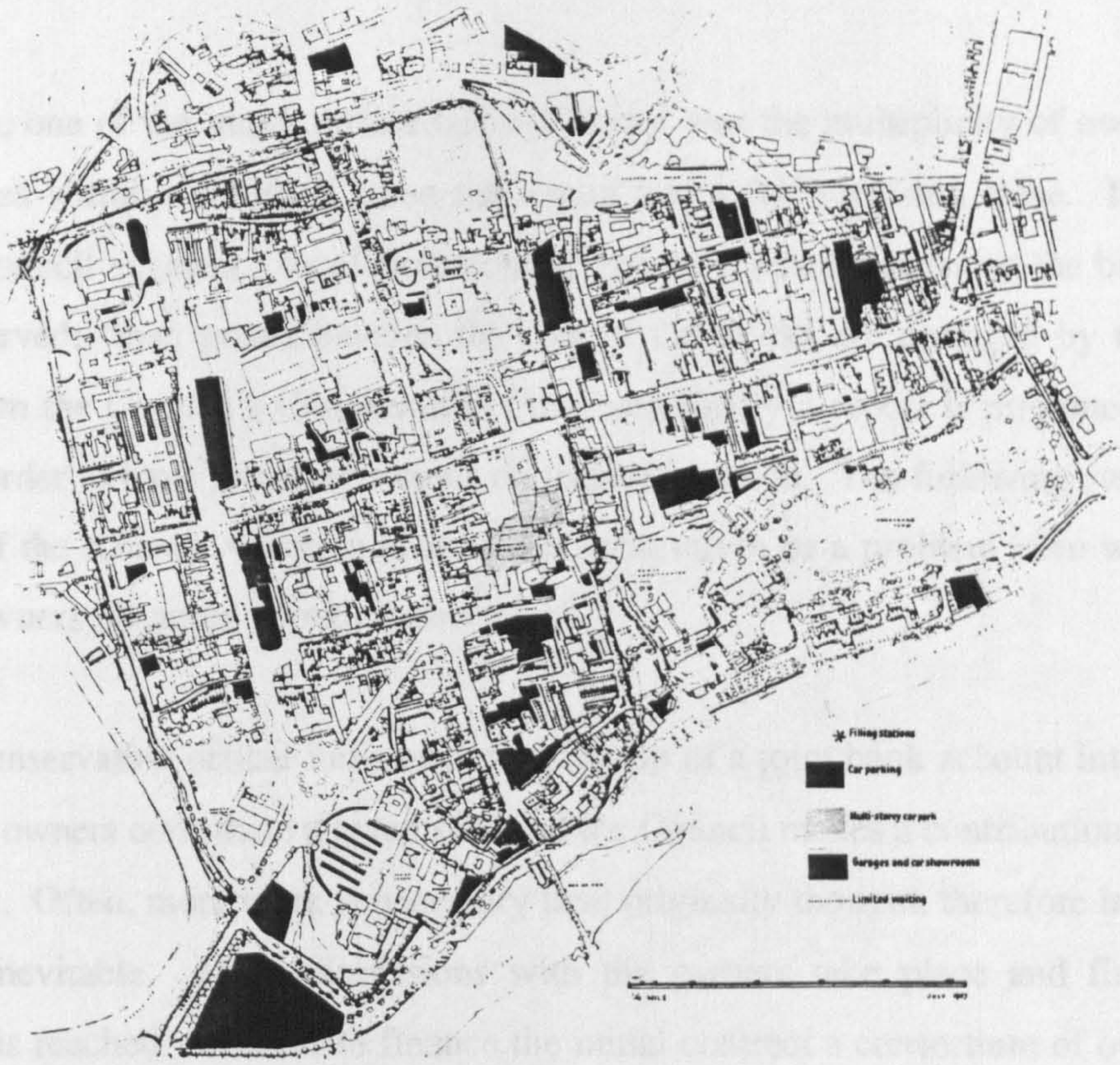
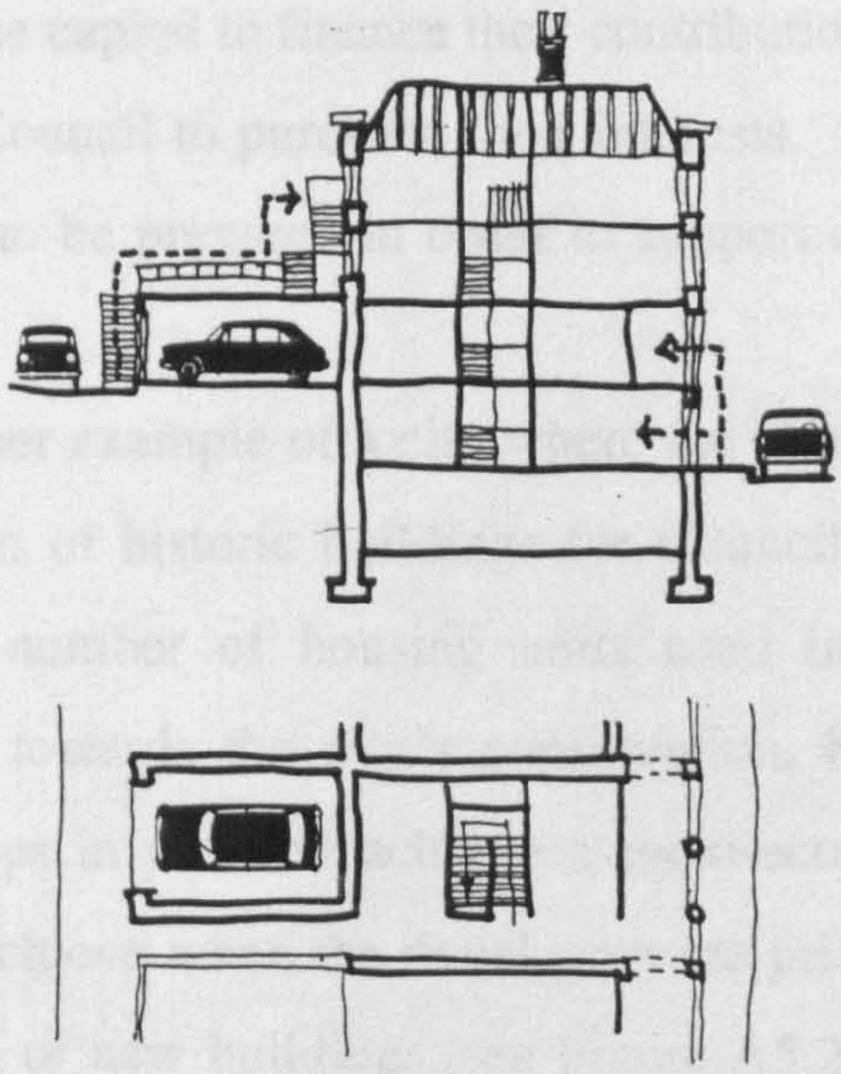
[26] Sall, D. W. and Department of the Environment, Conservation in Action: Chester's Bridgegate in Action, her Majesty's Stationery Office, Southampton, 1982, p.11.

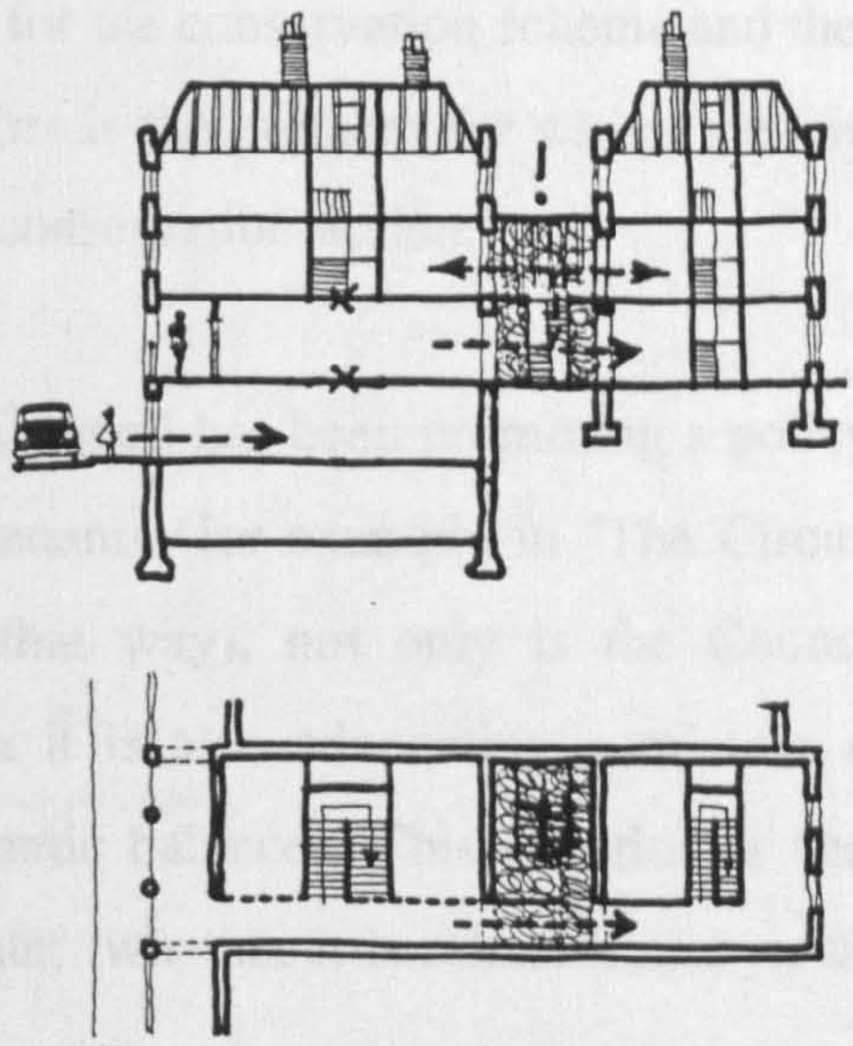




Car parking in Chester



Separate access could be obtained to the upper part of Rows buildings from behind, where in many cases the ground is at Row level



Typical Rows building showing difficulties of lighting and ventilation

Figure A5.1. Chester's Conservation Area

As in Baixa, one of the major difficulties in Chester was the multiplicity of ownership and tenancies within a building when the tenant had a full repairing lease. In many cases the Council engages a local architectural firm to prepare reports on the buildings to be conserved; then grants towards the cost of the works are arranged by the City Council from the Council's Conservation Fund and finally a report is presented to the owners in order to have joint discussions on implementation. The following step is the financing of the scheme, which in many cases turns out to be a problem even when the group of owners all agree about conservation.

Then the conservation officer initiates the setting-up of a joint bank account into which the various owners contribute a given sum and the Council makes a contribution by way of grant aid. Often, more work is necessary than originally thought, therefore increased costs are inevitable. More discussions with the owners take place and finally an agreement is reached. In order to finance the initial contract a consortium of owners is created, including the Council. However, some of the owners later realise that they are unable to raise capital to finance their contribution for the conservation scheme and then request the Council to purchase their interests. This is the moment for which the City Council has to be prepared in order to support a conservation action.

Bath is another example of a city where the City Council has been promoting a policy of acquisition of historic buildings for Council tenants (for example in 'The Circus' there are a number of housing units used in that way), not only is the Council contributing towards the city's conservation, but it is also advocating a mixture of income groups in order to achieve a socio-economic balance. This situation is very difficult to achieve when the developers are private; whether it is rehabilitation or the development of new buildings.(see Figure A5.2)

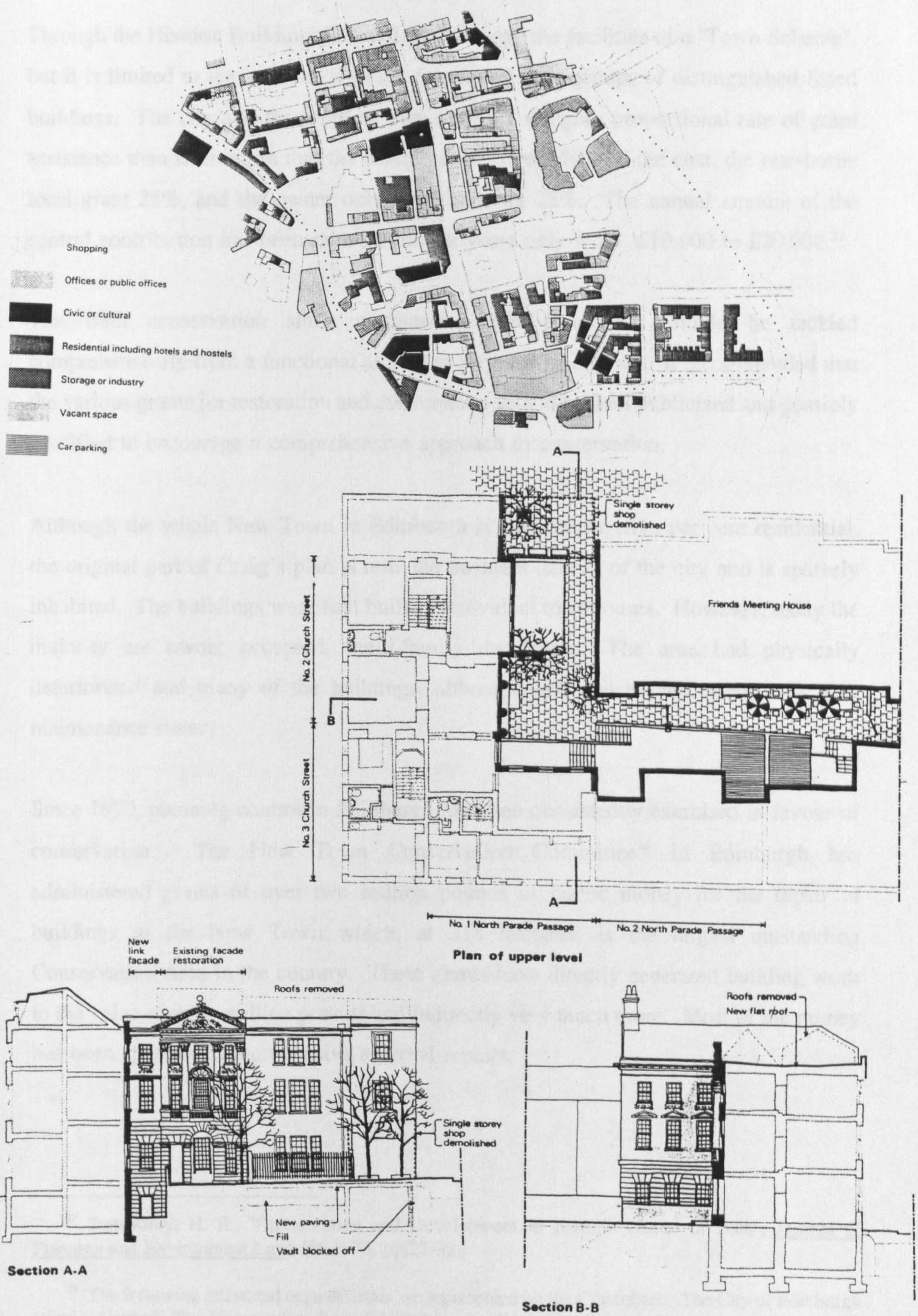


Figure A5.2. Bath Conservation Area

Through the Historic Buildings Council, Bath enjoys the facilities of a 'Town Scheme", but it is limited to the restoration of the facades of only groups of distinguished listed buildings. The city and the property owners enjoy a higher proportional rate of grant assistance than is usual, in that the central grant covers 50% of the cost, the rate-borne local grant 25%, and the owner only the remaining 25%. The annual amount of the central contribution has been raised in recent years only from £10,000 to £20,000.[27]

The Bath conservation study emphasized that restoration should be tackled comprehensively from a functional as well as physical standpoint. It recommended that the various grants for restoration and conversions should be well publicized and possibly modified to encourage a comprehensive approach to conservation.

Although the whole New Town in Edinburgh is still seventy-five per cent residential, the original part of Craig's plan is now the business district of the city and is sparsely inhabited. The buildings were first built as individual townhouses. However, today the majority are owner occupied, multi-family dwellings. The area had physically deteriorated and many of the buildings, although well constructed, were in a poor maintenance state.

Since 1970, planning control in Edinburgh has been consistently exercised in favour of conservation. The New Town Conservation Committee[28] in Edinburgh has administered grants of over two million pounds of public money for the repair of buildings in the New Town which, at 318 hectares, is the largest outstanding Conservation Area in the country. These grants have directly generated building work to the value of three million pounds and indirectly very much more. Most of the money has been spent on comprehensive external repairs.

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[27] Stutchbury, H. E., 'Conservation and Development in Historic Centre of Bath', Journal of Planning and Environment Law, Jan.1973, pp.27-32.

[28] The following interested organisations are represented on the Committee: The City of Edinburgh District Council, The Historic Buildings Council for Scotland, The Scottish Development Department (which represents the Department of the Environment in Scotland), The Scottish Civic Trust, The Scottish Georgian Society, The Cockburn Association, The New Town Resident's Associations.

Many of the buildings are under multiple ownership which adds to administration responsibilities because it is the policy of the Committee to award grants for repairs to the whole buildings. This requires the cooperation of all owners of flats in a tenement. The Committee encourages comprehensive schemes for a group of buildings in a terrace and will provide higher percentage grants as an incentive. In 1970 it was estimated that fifteen million pounds were necessary over the next twenty years to finance the repair to building fabric required in the New Town, as of 1982, over two million pounds of public money had been spent to generate three million pounds of direct work.[29]

It was felt that the owners of property with the lowest ratings were the least able to pay for repairs although they might have the greatest need. It was also recognized that this would result in the buildings being repaired in an inappropriate manner. Therefore the Committee has produced grants of up to ninety per cent of the cost of external repairs in the fringe areas of the New Town.[30]

The grants recommended by the Conservation Committee offer the greatest incentive for the comprehensive repair of properties with low rateable values, while properties with higher rateable values or partial repairs attract a lower grant. Sometimes extra grants are offered towards exceptionally expensive masonry. In 1981 the Committee introduced an annual maintenance inspection service for the New Town, offering for a small fee to inspect and report on roofs, walls and chimneys, and to advise if further professional help is needed and if the repairs qualify for grant aid. It will be a condition of all future grants for comprehensive repairs that the fabric is inspected annually thereafter.[31]

Although conservation in Britain has proved successful for the past years there are several issues to be solved and changed including: the existence of VAT on repairs but not on new building; and the new relief to listed building alterations which favours

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[29] Hodges, D., 'The Conservation of Edinburgh's Georgian New Town', Building Technology and Management, n°20 (2), February, 1982, p.9.

[30] op.cit., Hodges, D., 1982 p.9.

[31] op cit., Hodges, D.,1982, pp.9-10.

destruction rather than preservation.[32] It is believed that a system of tax relief would be a better way of dealing with the financing of the architectural heritage than the system of grants because it is difficult for the historic buildings grants to survive the present cash limit regime. English Heritage is being forced to adopt a less generous response to applicants, year by year. There should be a relief on personal as well as corporate donations to charitable trusts and on restoration of listed buildings.[33]

However money is apparently available for urban conservation independent of English Heritage. Additionally, the Government believes that other forms of subsidy to urban renewal is more politically appealing. Urban development grants, partnerships, task forces, or derelict land grants are among new governmental patterns of support.

Personal incentive through tax relief and towards private public partnership seems to be a good way to preserve the heritage.[34] Also the United States is promoting its cultural-architectural heritage by ensuring a pecuniary gain to the property's developer. Simon Jenkins argues that one reason for the British obsession with central grants is that it is not only local government that is distrusted, but also individuals who spend their own money wisely, even when regulating what they can or cannot do.[35] In contrast with this system Americans believe that tax deductibility should be the policy. He continues by saying that Britain is living under the dictorship of the Treasury and that the Treasury regards tax expenditures as the root of all fiscal evil.

Tax relief can take several forms, and in conjunction with grants, contributes to the improvement of housing in Bruges, Flanders, Mons, Brussels, etc. The ones presented here incorporate: (i) renovation work is tax - deductible approximately 20% of

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[32] Jenkins, S., 'Why Fund the Architectural Heritage?' Funding the Architectural Heritage, Council of Europe, Report of the York Colloquy, Strasbourg, 1987, pp.13-22.

[33] Research at Aston University shows that a sample of 65 urban development grants, valued at £30 million - far more than English Heritage's grants budget - generated £84 million of conservation spending. Conservation areas grants have come down from 50% to 25%; church grants are now being refused.

[34] op. cit., Scott, L., discuss the importance of; capital transfer tax; value-added tax (VAT); insurance against loss; maintenance of buildings; and tax incentive in the United Kingdom, p.127.

[35] op cit, Jenkins, S.,1987, p.18.

expenditure up to a maximum of 100,000 francs; (ii) where a mortgage loan has been taken out, there is an allowance against earned income for the life - insurance premiums and the sums used to repay the loan, subject to certain conditions; (iii) there is tax relief on mortgage interest to the tune of income from immovable and movable assets, plus over three years, 100,000, 60,000 and then 40,000 francs.

In many American cities, a variety of relief programmes are available to any investor in historic buildings, either for individual owners or developers.[36] They use the public sector not as a payer but as a catalyst and stimulator.

The *US Historic Preservation Act 1966* provides grants of $45 million to owners of registered properties, while $750 million was given to housing rehabilitation in general. A policy for reusing older property was developed in several ways: the Public Buildings and Co-operative Use Act of 1976 allows older buildings, to be sold on long leases to non-profit making bodies; government departments looking for new buildings must first consider using any redundant building; the Federal Property Release Option Programme allows the national government to sell property in blighted older areas where new schemes have been abandoned and site values are low, at nominal prices to local administration. The local administrators can pass them on for approved refurbishment schemes at cost. Funds are then put into repair rather than acquisition.[37]

The government has also adjusted its tax system in favour of preservation. The Economic Recovery Tax Act of 1981 introduces differential rates of tax credit, extending up to 25% for the rehabilitation of 'certified historic structures', which means that the work has to be certified as being consistent with the historic character of the property. The Tax Reform Act of 1986 reduced the top rate of allowance to 20% for certified historic structures, and 10% for other buildings over 50 years old.

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[36] Development and financial incentives are offered to investors such as: (i) building code incentives, (ii) transfer of development rights, (iii) property tax relief, (iv) tax incentives for the rehabilitation of historic buildings. See: Scott, L. 'Traditional and other Methods of Financing Conservation in the United Kingdom', MA, at the Institute of Architectural Studies, University of York, 1983, p.141.

[37] Pearce, M., Conservation. A Credit Account, SAVE Britain's Heritage, Suffolk, 1988, p.35.

The US government has been encouraging private investment to replace traditional grant incentives from the public purse, reducing its administrative costs, creating cost-effective labour-intensive employment, developing craft skills, helping and encouraging housing initiatives in the private sector, and creating usable space for businesses in a pleasant environment.[38]

Housing Associations and Public Funds have been playing an important role in the conservation work of the architectural heritage in the Netherlands. Some of the housing associations are recognised as a restoration institute by the Ministry of Cultural Affairs and allowed to restore protected monuments and historic buildings, thus receiving financial support by the central, provincial and local authorities.

Another system has been recently applied in the Netherlands. This one is based on Housing Associations and public funds, and deserves our attention. We now will be looking at these two models of funding the historic buildings.

In Holland grants for the restoration of historic buildings protected by the state are awarded under the government grant scheme for the restoration of monuments and historic buildings. The amount to be received as a grant is a percentage, or the eligible restoration cost which is established by the authorities and comprises those costs which are inevitable if the historic value and character of the building in question is to be maintained. The percentage of the grant is partly dependent on the extent to which costs may be tax deductible (among other factors).

When the owner of an historic building cannot obtain tax relief on costs (for example, from foundation, municipalities, church authorities or housing associations) the basic percentages referred to above are raised by 30%.[39]

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[38] op cit. Pearce, M., 1988, p.36.

[39] Hengeveld, J., 'Housing Associations and Public Funds in Amsterdam', Funding the Architectural Heritage, reports and studies, nº8, Council of Europe, Strasbourg, 1986, p.79.

Owners who can deduct costs from tax may be eligible for a restoration mortgage instead of an increased grant. Such mortgages are provided on very favourable terms and also cover up to 30% of the eligible restoration costs. They are provided by the National Restoration Fund under arrangements made with the central government to provide grants to the owners of historic buildings who can offset costs and interest paid against tax.[40]

These associations can also receive financial support from the Ministry of Housing on condition that they restore historic buildings in such a way that these can be rented by the lower income classes of the population. That is, the Authority guarantees the payment of interest and repayments of the loan so that the terms can be more favourable. The difference between the cost price rents and the social rents is then paid yearly by the Ministry of Housing to the Housing Association. In these cases, the Ministry of Cultural Affairs only pays grants for the restoration of the facades of the historic building.

The Amsterdam Company for Town Restoration Ltd. is basically a Housing Association but at the same time a restoration organisation which works on the same basis as ordinary commercial companies in the Netherlands. The company has been working for the last thirty years on the principle that 'conservation should be made to pay for itself'.[41] An Amsterdam businessman in 1956 approached nine Dutch insurance companies, two shipping companies and two banks. Together they put up a combined share capital of more than 1.1 million guilders worth some £300.00 at that time. As the company is registered as a housing association in the Netherlands, it receives advantageous tax treatment. Today the company boasts 63 shareholders, has an issued share capital of 38 million guilders, (£11.000.000) and the income from rents on the 320 properties owned by 'Stadsherstel' amounts to 5.5 million guilders per annum, (£1.600.000).

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[40] The financial means of the fund are received from the Ministry of Cultural Affairs - 'à fonds perdu' payment without charging interest rate equal to the average interest on recent loans issued by the central government.

[41] op cit, Hengeveld,J., 1986,p.80.

As reviewed above, the economic objective of the rehabilitation programs developed in Europe in a mixed economy society is to get the local economy moving again by encouraging private participants to invest money into the district in the hope that the cumulative effect of individual decisions will halt the depreciation of the district with its concomitant decay. The social objective is to allow the residents of the district (who most of the times have economic difficulties) to enjoy better living conditions. It seems that the most supportive way is the taxation system of the extra costs of maintaining an old house.

In 1985 'The Granada Convention' stated that: 'resort is necessary to fiscal measures to facilitate the conservation of this heritage'. Therefore, a special tax system for cultural assets should be developed because of its double character, public and private, and because it is not equitable that someone who owns part of a property should pay the full ownership to the other owner, namely the state. The State must realise that it does not lose revenue as a result of receiving less tax on those issues, because when the investment in cultural assets is encouraged and public co-operation is involved the main public objective will be achieved. A better and more favourable tax system leads to an efficient use of resources for cultural purposes which benefit the public interest.

In the US the system shows what can be achieved by harnessing the interest and capital of the private sector. The Netherlands demonstrates what can be done by enlisting the support and participation of the local authorities. A common factor is the existence of a comprehensive system of tax incentives in favour of conservation. The State makes the initial financial investment and receives the benefit of increased income which comes from the increased economic activity and a reduction of unemployment. The British experience shows the existence of numerous organizations contributing to the heritage conservation, although they are deeply dependent on central government grants.

For the Baixa Pombalina project there will be a need for a strong position from the City Council concerning administration and implementation, but in cooperation with the private sector. The City Council must persuade the private sector to take a risk on conservation policy and if necessary the Council should give the lead. Usually Local Authorities are not empowered to take risks. On the other hand, the developer has the

inclination and the ability, as well as the resources to evaluate and shoulder the risk and to bring these various ingredients together in the initial stages. The investor should always play safe and only invest in or develop prime properties.

There is a general political aversion to the idea of developers or entrepreneurs but they are an important part of the development process of any major scheme. Therefore the Local Authority should develop and promote schemes within the city and invite developers working on conservation. The Local Authority can present an amount of incentives by way of grants or tax allowances which will encourage the developers to take a property into their portfolio even if it does not belong to their normal area of activity. To achieve this goal, the Local Authority must have the power to organize, administer and promote actions, and has to be more independent from the Central Government. The Local Authority should be able to show the developers that by financing a conservation project they can be buying an image which arouses and holds public interest. This positive image is an important value especially in view of the change in the real estate market, which has become more aware of the values inherent in old structures.

Private finance has always been available for schemes promoted by the public sector so it does not seem impossible that the private sector would invest in conservation. The first ingredient is local and central government awareness of the need for a conservation scheme which would justify some economic discipline. The second ingredient is to have a profitable scheme, the third is to reach an agreement between the landowner, the developer, the financier, the contractor and the tenants. Co-operation between the public sector and private finance must be established on a consistent basis with ground rules to cater for all situations and, must be built on trust.

Local Authority as a commanding element in the conservation programme must adopt a determined strategy to be flexible and open to any outside proposal. Although there has to be a strict policy on land uses in order to achieve a more pleasant city centre where it would be possible to live, flexibility may be needed when applying housing policy as well as the criteria for grant aid and tax incentives. They should be able to present ideas and specific projects at no charge to the owners of buildings which can

help them to visualise the potential of their properties and therefore aliciate them to take any kind of action. However, results can only be achieved when there is a specific group of people working as a conservation team. A conservation officer should be employed in order to establish connection between the Town Hall and the people concerned, and a consultant architect who should give stature to the conservation viewpoint and create trust on all sides of the conservation team.

From this analysis there are several conclusive aspects to be underlined for this proposal:

The first aspect is the need for the Local Authority to declare and publicise a clear policy for the area in order to instill a sense of security among residents and users and to create the right atmosphere for action. A conservation programme should be part of an overall planning policy, and there should be an understanding of the whole city on its own and in its regional and national context. There are benefits in devolving the administration of conservation as much as possible from Central Government to Local Government and from Local Government to private consultants and approved organisations from the voluntary and private sectors.

There is a large amount of work to be done on the Pombaline buildings, for their conservation and maintenance, but above all for the introduction of new uses. The rehabilitation will be very expensive and there is a need for a partnership between public and private sectors because there are advantages in using public sector legislation and finance to achieve leverage on private sector funding and initiative. The use of tax incentives has proved to be an instrument of encouragement to the private sector, therefore they should be developed. Specific funds will be needed to initiate programmes, however they should be developed in a way which attracts private money, in order to achieve a significant impact without causing the Local Authority to exceed its spending targets. Because each block includes many buildings, (and although the conservation will be fully achieved only when the whole block is finished) it could avoid the necessity for massive finance which would be required by one large building operation. Therefore, specific parts of the project could be developed by an independent housing agency, if necessary.

Insurance companies and banks happen to be the major owner of these buildings. Throughout past years they have been buying property in an obsolete state of maintenance at relatively low prices for the central area, mainly because the buildings tended to be owned by different landlords, and the property is rarely free of tenancies at the same time. What has occurred is the closing down of some floors while waiting for the others to deteriorate and for the market to decrease. The Local Authority could adopt this situation to provide incentive for companies and banks who are in a better financial situation than others, in order to promote conservation schemes which then could be of benefit for their own use, or to sell on the market. The situation of those buildings that are owned by several owners for whom the mere maintenance of the building is impossible must still be considered. However, the Local Authority must be prepared to purchase these buildings in order to give a good example of conservation practices.

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