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**The Development of a Conceptual Framework for Delivering
Socially Beneficial Urban Squares in Guangzhou, China**

by

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Abstract

Since the 1990s, in the context of recent rapid urbanisation, China has experienced an intense period of creating urban squares by new-build and regeneration. Much of this has been widely influenced by interpretations of Western urban morphology (Cao, 2005; Zhang 2006; Chen and Thwaites, 2013). Today, the contemporary urban square has become an essential urban form in the city layouts of Chinese cities, built primarily to display a city's features, promote a city's cultures, and enhance urban recreation life in China, mirroring perceptions of how such urban settings function in the West. However, the real usage patterns of urban squares in China appear to have limited and imbalanced usage by the public which appears to be in contrast to the well-used western urban squares that China has sought to imitate. This is beginning to attract the attention of the built environment professional fraternity who are seeking to develop better awareness of urban square usage patterns in Chinese cities and understand the planning and design implications.

Based on the review of relevant literature and the researcher's practical experiences, the emergence of this issue could be influenced by the following:

- In today's China, there is no national, regional or local level design guidance or policy in existence to provide the practitioners with any industrial standards to follow in the delivery of user-friendly urban squares in the Chinese context.
- Under this circumstance, therefore, the urban squares in China are normally delivered by practitioners who often look to Western influences placing emphasis on visual appearance rather than social functioning. Planning and design decision making processes are therefore heavily biased towards practitioners' own intuitions and preferences, rather than a deep understanding of, and then a response to, the users' needs and preferences in the Chinese context.

In response, this research will contribute towards solving this issue by developing a conceptual framework for delivering socially beneficial urban squares for today's China. Here, Guangzhou is selected as the study city for two main reasons. Firstly, Guangzhou is a representative city of China, clearly reflecting the issue discussed above; and secondly, its advanced experiences and lessons could be referred to by the other Chinese cities, due to its significant influence within China.

The aim illustrated above is achieved by addressing four research objectives. These are: firstly, to investigate the lessons and experiences that can be learnt from the Western context with regards to delivering socially beneficial urban squares for China, taking the city of Guangzhou as a study site; secondly, to uncover the users' usage features, desires, and suggestions on the recreation squares in Guangzhou; thirdly, to discover the concept and criteria of socially beneficial recreation squares that are suited to today's Guangzhou; and finally, to synthesise the outcomes of the previous three steps into a conceptual framework that can offer urban squares the ability to sustain and nourish public urban social life, in Guangzhou.

Finally, this research makes four main contributions to the fields of urban square and urban design including theoretical development and practical application. The first contribution is that it uncovers the evolving pattern of traditional Chinese squares, which can fill the gap that exists within the literature review of Chinese squares. The second contribution is that it reveals and illustrates the concept and criteria of socially beneficial urban squares in the Western context, which can enrich the West's documentary material of urban squares. The third contribution is that it develops two innovative research tools for the fieldwork in China, which contributes towards the development of built environment research methodology. The fourth contribution is that it produces a conceptual framework, which can be used not only in Guangzhou to assist the practitioners to deliver socially beneficial urban squares in practice, but also offers potential for application in other Chinese cities. This implies its significance and contribution to the theoretical and practical developments of Chinese urban squares.

Keywords: conceptual framework, socially beneficial recreation squares, Guangzhou

Awards

UK- China Scholarships for Excellence 2010-2015

The award of British Department for Business, Innovation and Skills (BIS) 2010-2013

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Li, D., (2014a) “The Implementation of Integration of Panorama and GIS Behaviour Mapping - The Exploration of Research Methods on Data Collection of Social Uses of Urban Squares”. In 23rd IAPS conference: Transitions to sustainable societies: Designing research and policies for changing lifestyles and communities. Timisoara, 24 - 27 June, 2014.

Li, D., (2013) “Roaming Design - Liberating Land for More Affordance in Compact Megacities - Wisdom in Contemporary Urban Design”. *Urban Construction Theory Research*, 77: 4 - 6

Li, D., (2012b) “Social Value of Public Urban Squares in Chinese Metropolis: the Development of A New Conceptual Framework for Urban Design in Guangzhou”. In 22rd IAPS conference: Human Experience in the Natural and Built Environment: Implications for Research Policy and Practice, Glasgow, 24 - 29 June, 2012.

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PART 1

FUNDAMENTALITY OF THE RESEARCH

Part 1

Chapter 1 Introduction

1.1 Research Background

Since the 1990's, China has experienced a fifteen-year intense period of creating urban squares by both new-build and regeneration, in the rapid urbanisation process across the Chinese cities. The urban squares in China were built with high expectations and with clear main proposes, which were for displaying the city's features, for promoting city cultures, and for enhancing urban recreation life, based on the study and imitation of the urban squares in the West (Cao, 2005; Zhang 2006; Zhang, 2005). In this thesis, the West refers to Western Europe and America. Today, the Chinese urban squares, which have received a significant amount of professional planning and design input, have become one of the essential urban forms in the city's layout in contemporary China, similar to those in the West. However, they have not attained the indispensable value in the public's urban social life. This issue has been realised and has been hotly debated in China over the last ten years since the urban squares that were planned and designed in the intense period started to be used in China.

The reasons that have caused the issue above could be summarised as follows, based on the analysis of the discussions of the other researchers (Cao, 2005; Zhang 2006; Li, 2012a; Ye and Cai, 2012) and the authors' own practical experience. These are:

1. In today's China, there is no national, regional or local level design guidance or policy in existence, to provide the practitioners with any industrial standards to follow, in delivering users-friendly urban squares in the Chinese context.
2. Under this circumstance, therefore, the urban squares in China are normally delivered by the practitioners, based on the imitations of the West's well-used urban squares, and finalised by the practitioners' own intuitions and preferences.

Furthermore, it has been found that the practitioners' imitations mainly focused on the study of the forms and appearance of the Western urban squares, to a greater extent than their social functionality (Guo, 2002; Cao, 2005; Zhang 2006; Ye and Cai, 2012), which implies an oversight of the existence of the cultural differences between the West and China. The Western urbanists, Moughtin and Mertens (2003, p. 88) have mentioned: "There is some danger in attempting to transfer design concepts which may be effective at one particular time, or in one place or in one culture to a quite different setting". This implies to us that the imitation of the foreign urban squares, with a failure to take into account the Chinese local cultures and situations, could be one of the chief culprits that results in the appearance of a great number of "user-unfriendly" urban squares in today's China.

Meanwhile, an investigation (Chen and Ye, 2002) that was conducted in 2002 in Guangdong province implies to us that another chief culprit could be the existence of a gap between the evaluation criteria of the professionals, and the perceptions and experiences of the public. Furthermore, in that investigation, the public evaluated the "Top Ten Great Urban Squares", as awarded by the professionals, with the satisfaction of merely "OK". This informs us to the existence of the professionals' misunderstanding of the public's usage preferences and usage desires towards urban squares in today's China.

From the discussion above, it can be seen that the current method of delivering Chinese urban squares may not be sufficiently well informed to guarantee the delivery of socially beneficial urban squares in today's China. The key point in the solution to this is to deliver an instruction to the practitioners, which can assist them in; firstly truly understanding the users' usage preferences and aspirations in today's China, and secondly appropriately responding to these usage preferences and aspirations in the delivery of urban squares in today's China.

To date, some relevant research has been carried out by a number of Chinese researchers, and their research outcomes have resulted in a significant number of published papers (Ye, 2002; Li, 2004; Cao, 2005; Sun, 2005; Zhang, 2005; Lu, 2010; Li, 2012a). Based on reading and analysing of these papers, their different opinions and suggestions on delivering urban squares with high

social value in China could be summarised and categorised into three as follows.

- The low social value of current urban squares is caused by the lack of imageability and legibility, therefore offering distinctive imageability and legibility to each squares could significantly improve the social value of Chinese urban squares (Cao, 2005; Zhang, 2005; Zhang 2006).
- The low social value is caused by the lack of a humanised atmosphere due to the universally oversized scale and lack of well-suited internal objects/structures. Therefore, reducing the squares' size to meet a comfortable level for users and offering appreciate internal features/objects for users in China could improve the social value of the Chinese urban squares (Cao, 2005; Li, 2012a; Sun, 2005).
- The low social value is caused by the lack of local identity and local cultures, due to the imitation of the Western squares and the impact of the globalisation (which implies delocalisation and standardisation). Therefore, offering some symbols that can reflect the local identity and local cultures can significantly improve the social value of the Chinese urban squares (Ye, 2002; Li, 2004; Lu, 2010).

From the above, it can be seen that, the current research outcomes relating to the social value of urban squares in China do exist, but are still very limited and not systematic. Therefore, the need in finding a logical and systematic tool to assist the practitioners in delivering urban squares with high social value in today's China, is clearly brought to afore to us. Furthermore, against the backdrop of the increasing price of city land (Wang, 2008; Chen and Thwaites, 2013) and the ever-growing needs for building urban squares in current Chinese cities, the urgency and significance in finding a solution is further highlighted.

Against this background, this research will generate a conceptual framework to assist the practitioners in the delivery of socially beneficial urban squares in today's China.

1.2 Research Aim and Objectives

This research devotes itself to generating a conceptual framework for delivering socially beneficial urban squares in a Chinese city - Guangzhou.

The aim above is addressed by achieving four objectives as follows:

- To investigate the lessons and experiences that can be learnt from the Western context with

regards to delivering socially beneficial urban squares for China.

- To uncover the users' usage features, desires, and suggestions with regards to recreation squares in a Chinese context - today's Guangzhou
- To discover the concept and criteria of socially beneficial recreation squares that are suited to a Chinese context - today's Guangzhou
- To synthesise the outcomes of the previous three stages into a conceptual framework that can assist practitioners to deliver urban squares with greater capability to stimulate and nourish the public's social life in a Chinese context - today's Guangzhou.

1.3 Research Procedure

To accomplish the research objectives set out above, six key milestones in the research process are identified and used as the way-makers within this research. These are specified as follows:

1. To produce a developed definition and a developed typology of urban squares, which are suited to contemporary China, based on the literature review of urban squares in both China, and the West.
2. To produce the conceptual model of socially beneficial urban squares, which includes the concept and criteria, from the Western literature review.
3. To identify the study city and sites for the fieldwork, based on particular rational criteria of selection.
4. To collect data on the current usage patterns of the recreation squares, and the users' insights, thoughts, and suggestions on the recreation squares, from the selected sites in Guangzhou, for uncovering the users' usage features, desires, and suggestions on the recreation squares in today's Guangzhou.
5. To generate a concept and a set of criteria for delivering socially beneficial recreation squares that are applicable to the Chinese context - Guangzhou, based on the previous procedure.
6. To refine and interpret the findings from the above (stages 1, 4 and 5), into a conceptual framework that can have the significant benefit of helping in the delivery of socially beneficial urban squares in a Chinese context.

1.4 Potential Research Contributions

The outcomes of this research offer five potential contributions to the development of the theory

and practice of urban squares and urban design studies, across both China and the West, but with an emphasis on China. These are as follows:

- This research discloses the evolving pattern of Chinese traditional squares, which not only fills a gap in the literature on urban squares in China, but also corrects a common misconception that China hasn't had squares and squares' life in the past.
- This research reveals the concept and criteria of the socially beneficial urban squares which are applicable to the Western context. This can enrich the research documentary material relating to urban squares and urban design studies of the West.
- This research develops the research tools of non-participant observations and semi-structured interviews to enable them to be applicable to the specific Chinese context. This outcome can firstly have benefits for other researchers in the practical research, and secondly can enrich the documentary material of research methodology.
- This research produces a concept and criteria for creating socially beneficial recreation squares in Guangzhou, which can be used as a technical tool for the planners and designers in delivering recreation squares with a high social value in practice, in Guangzhou. This research outcome can be developed to become a design guideline of urban squares in Guangzhou after refinements. Meanwhile, the conceptual framework that is generated in this research can not only be used in Guangzhou, but also can be applied in the other Chinese cities after some appropriate adjustments in line with their local conditions. This implies the significance of this ultimate outcome of this research to the theoretical and practical development of Chinese urban squares.

1.5 Thesis Structure

This thesis is structured into three parts with 9 chapters. In general, Part 1 which includes Chapter 1 and Chapter 2 discusses the fundamental basis of this research; Part 2 which includes Chapter 3 explores the relevant theoretical underpinning of this research; and finally, Part 3 which consists Chapter 4 through to Chapter 9 addresses the research outcomes. These are further detailed below.

Chapter 1 (introduction) is the introductory chapter of the whole thesis. It firstly introduces the background and motivation for this research; secondly states the research aims, objectives, and research procedures which are addressed in the following chapters; thirdly, outlines the potential contributions of this research; and finally, briefly outlines the overview of the whole thesis.

Chapter 2 (research methodology) is the introductory chapter for the research methodology which

demonstrates the research methods used to carry out this research. It firstly indicates a methodological framework for the whole research; and secondly indicates the selection and design of the data collection and analysis methods that are applied in the following chapters.

Chapter 3 (literature review) indicates the theories relating to the research, which particularly focuses on the following three issues. The first is to outline the evolving pattern of urban squares and squares' life in China; the second is to outline the evolving pattern of urban squares and squares' life in the West; and the final is to identify the value, aspects, and the ways in which China could learn from the West. These achievements lay the foundation to carry out the work in Chapter 4, which contributes towards achieving research objective 1.

Chapter 4 (outcomes of Chapter 3) is the first outcome chapter of this thesis, which is produced based upon Chapter 3. In general, two main research outcomes are produced on the basis of the study of literature. These are the developed definition and classification of urban squares suited to the current Chinese context, and the concept and criteria of socially beneficial urban square which are applicable to the Western context. This chapter directly achieves research objective 1, and contributes towards achieving research objective 2.

Chapter 5 (fieldwork sites introduction) demonstrates the criteria for the site selection and introduces the three selected sites. These are Hero square, Water Fountain Square and Lighting Square in Guangzhou. This chapter lays the foundation for carrying out the fieldwork, which contributes to achieving research objective 2.

Chapter 6 (research findings) reveals the main findings that were obtained in the fieldwork (the non-participant observations and semi-structured interviews). The findings are presented with five themes. These are: the diversity of users in the recreation squares in Guangzhou; the diversity of behaviours in the recreation squares in Guangzhou; the main usage and their participants in the recreation squares in Guangzhou; the usage situation and users' perceptions of urban squares in Guangzhou; and the users' main usage purpose and the satisfaction degree of current urban squares in Guangzhou. This chapter directly contributes towards addressing research objective 2.

Chapter 7 (research discussions) discusses the research findings obtained in Chapters 4 and 6. This chapter draws together the results based on an integrated analysis of those findings with two themes. These are firstly the discussion of the research outcomes regarding the usage of urban squares in Guangzhou, which includes the users' awareness and satisfaction of urban squares, the public's usage features and desires for recreation squares in Guangzhou, and the suggestions for the concept of socially beneficial recreation squares and its criteria in Guangzhou; and secondly, the discussion of the research methods applied in the fieldwork. This chapter directly achieves

research objective 2 and 3.

Chapter 8 (delivery of conceptual framework) produces a conceptual framework for delivering socially beneficial urban squares in Guangzhou, based on the research outcomes obtained from the former chapters. It mainly contains two themes sections. These are firstly, the developed definition and classification of urban squares for contemporary China; and secondly, the current usage features and usage problems of urban squares in Guangzhou and the corresponding suggestions for a solution. This chapter directly achieves research objective 4.

Chapter 9 (conclusion) summarises the whole research, reviews the main research methods and research outcomes discussed in the former chapters, lists the limitations of this research, and finally discusses the scope for future work. This chapter offers a conclusion to this thesis.

Part 1

Chapter 2 Research Methodology

To achieve the research aim successfully and efficiently, generating an appropriate research methodology for this research is identified as the primary work. Therefore the exploration of the research methodology was carried out first. This chapter is arranged to outline and illustrate the design process and outcomes relating to the research methodology, which were obtained in the exploration, with two subchapters as follows.

Firstly, in Chapter 2.1, the author reviews the scope of the whole research, and explains the designed framework of research methodology that is used to guide this research. In general, this research framework contains three stages' work with the application of a diverse range of qualitative research methods, which is determined according to the research needs and characteristics.

Secondly, in Chapter 2.2, the author explains the main research methods that are applied in this research, which mainly include literature review, content analysis, non-participant observation, and semi-structured interview. In this section, an emphasis on the discussions of the research methods of non-participant observation and semi-structures interview is offered. This is because the author develops these two research methods with innovations to ensure that they can be successfully applied in the specific Chinese context.

2.1 The Scope of the Whole Research and Research Methodology Framework

As clarified in Chapter 1, the aim of this research is to generate a conceptual framework for delivering socially beneficial urban squares in a contemporary Chinese city - Guangzhou.

This aim is addressed by achieving four research objectives as follows: firstly, to investigate the lessons and experiences that can be learnt from the Western context with regards to delivering socially beneficial urban squares, for China; secondly, to uncover the users' usage features, desires, and suggestions with regards to recreation squares in a Chinese context - today's Guangzhou; thirdly, to discover the concept and criteria of socially beneficial recreation squares that are suited to a Chinese context - today's Guangzhou; and finally, to synthesise the outcomes of the previous three stages into a conceptual framework that can assist practitioners to deliver urban squares with greater capability to stimulate and nourish the public's social life in a Chinese context - today's Guangzhou.

According to the research objectives and features, a framework of research methodology (see figure 2.1) is established to ensure that the whole research can be processed logically, smoothly and productively.

In summary, this research is structured into four stages with the application of qualitative research approaches, due to the characteristics of this research. As Gehl and Svarre (2013, p. 22) suggested: "A single tool is rarely sufficient. It is usually necessary to combine various types of investigation tools". Therefore in this research, the author adopts diverse research methods which mainly belong to the category of qualitative research approaches in this research, in the following three stages:

In stage one, the research methods of literature review and document analysis are selected and used as the main research tools to achieve three main goals. Firstly, to investigate the lessons and experiences that can be learnt from the Western context with regards to delivering socially beneficial urban squares for China by exploring the evolving patterns of squares in both China and the West. Secondly, to find and produce the appropriate research tools for carrying out this study. Finally, to determine the study sites according to particular criteria based on document analysis and site visits.

By the end of stage one, the first goal is achieved by producing a developed definition and classification of urban squares that are suited to the current Chinese context, and a conceptual model of socially beneficial urban squares that originates in the Western context. The second goal

is achieved by identifying the research tools that are appropriate for this research, which are literature review, document analysis, non-participant observation, and semi-structured interview, and the corresponding adjustments that should be made to these. The third goal is achieved by identifying the three study sites in Guangzhou, which are Hero Square, Water Fountain Square and Lighting Square. The research achievements obtained in the final two steps in this stage lay the solid foundations for carrying out the work in stages two and four.

Secondly, in stage two, the research methods of non-participant observation and semi-structured interview are selected and used as the main research tools to collect data on the current usage patterns of the recreation squares, and the users' inside thoughts and suggestions on the recreation squares from the selected sites in Guangzhou. The analysis of this data uncovers the users' usage features, desires, and suggestions on the recreation squares in today's Guangzhou, which lays the solid foundations for the work in stages three and four.

Thirdly, in stage three, a concept and a set of corresponding criteria of socially beneficial recreation squares which are suited to Guangzhou, are generated, based on the research achievements of stage one (a conceptual model of socially beneficial urban squares that originates in the Western contexts) and stage two (users' usage features, desires and suggestions on the recreation squares in today's Guangzhou.). The research achievements of this stage directly respond to the research objective three.

Finally, in stage four, based on an in-depth consideration of the research achievements obtained in the previous three stages, the components of the conceptual framework for delivering socially beneficial urban squares in Guangzhou are determined. These are: the developed definition and classification of urban squares in contemporary China; the current usage features and usage problems of urban squares in Guangzhou; and the corresponding suggestions for creating socially beneficial urban squares in Guangzhou, which mainly contain the concept and criteria of socially beneficial recreation squares that are suited to Guangzhou. The research outcome of this stage directly addresses the research objective four, and achieves the ultimate aim of this research.

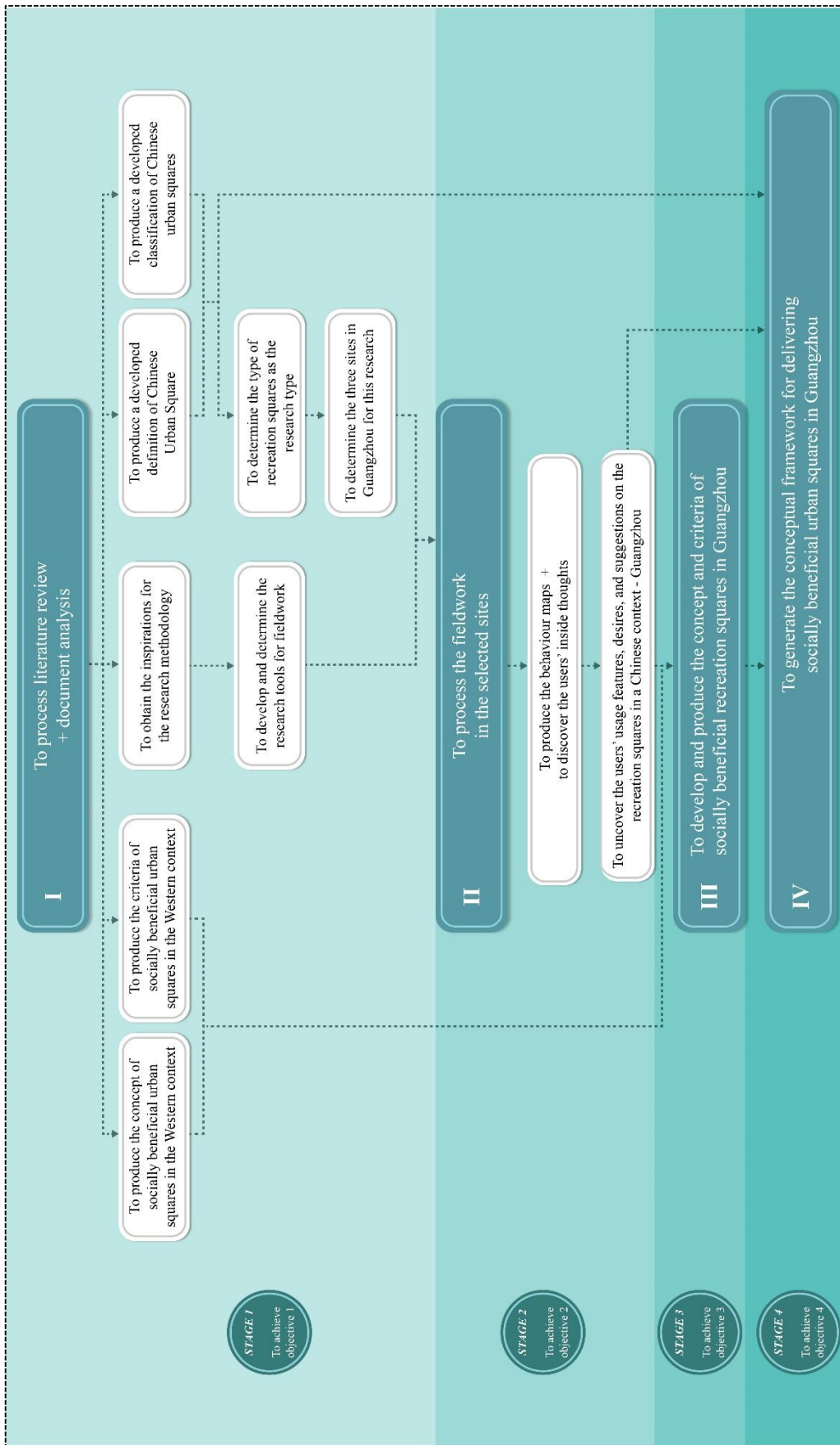


Figure 2.1 Framework of research methodology

2.2 The Selection and Design of Research Methods for This Research

The research methods that have been selected and applied in this study mainly belong to the qualitative research methods, because this study is a social science research that focuses on the investigation of people's needs and desires for urban squares in China. Here, it has been determined to use diverse research methods, based on the needs of this research, and a review of literature on methodology (Sommer and Sommer, 2002; Bryman, 2012; Coolican, 2014) which points out that the application of multiple research methods can reduce and even neutralise the disadvantages and negative impacts that are caused by the usage of only a single, or limited numbers of, research methods.

In this research, there are four research methods that have been identified as the appropriate research methods for this study. These are respectively: literature review, content analysis, non-participant observation, and semi-structured interview. Here, each of these will be addressed separately, but the emphasis will be placed on the non-participant observations and semi-structured interviews, because these methods feature innovations developed by the author, to meet the needs of this research.

2.2.1 Literature Review

As Machi and McEvoy (2009, p. 4) defined, literature review is “a written document that presents a logically argued case founded on a comprehensive understanding of the current state of knowledge about a topic of study”, which can establish convincing evidence to answer the study's question. Today, as a significant research method, literature review has been widely used in various researches, because it is an effective tool in revealing the relevant issues to a research and to lay the foundation for developing new knowledge of a research.

In this research, literature review is selected and used as one of the primary research methods, mainly for two purposes, as below:

- To investigate the lessons and experience that can be learnt from the Western context with regards to delivering socially beneficial urban squares for China.
- To identify the appropriate research tools for successfully and efficiently carrying out this research.

The first purpose is achieved by carrying out a historical and theoretical review of the literature on urban squares, in both China and the West. These were reviewed using; constant comparison analysis, keywords-in-context, componential analysis, theme analysis, secondary data analysis,

and qualitative comparative analysis (Onwuegbuzie et al., 2012), to generate two research outcomes. The first is to identify the value, aspects, and ways that China could learn from the West; and the second is to illustrate the specific lessons and experiences that China could learn from the West. The significant contribution of this step is the generation of a developed definition and classification of Chinese urban squares and a Western conceptual model of socially beneficial urban squares.

The second purpose is achieved by addressing literature view on research methods that have been applied in the urban design studies, especially in the study of urban squares by other researchers, with the analysis methods of constant comparison analysis, keywords-in-context, content analysis, and qualitative comparative analysis (Onwuegbuzie et al., 2012). This significantly assists the author in finalising an appropriate methodology for this research, by notifying the author of the strengths and limitations of the frequently-used research methods in the study of urban squares. Furthermore, the significant contribution of this step is in assisting the author in determining the data collection and analysis tools for the fieldwork, and to provide the inspirations for developing and refining these, to make them suit the specific Chinese context. Here, the development of the research tools of non-participant observation and semi-structured interview with innovations is notable, and is illustrated in detail in the following sections.

2.2.2 Document Analysis

Document analysis, which is also known as “textual analysis” (Charmaz, 2006, p. 35), “ethnographic content analysis” (Altheide, 1987, p. 65), and “mining data from documents” (Merriam, 2014, p. 139), is an effective data collection tool because it is well practiced in collecting standard and official sources, cabinet and other memoirs, diaries and biographies, letters, contemporary writing, images, sound and objects which are stored or distributed either in written format or electronic format (O'Hara et al., 2011), which can function both as the main source, and the supplement information, for the researcher's conclusions (Sapsford and Jupp, 2006).

In this research, the document analysis is applied as one of the primary data collection tools, with the application of the data analysis methods of keywords-in-context, secondary data analysis, and qualitative comparative analysis (Onwuegbuzie et al., 2012), to firstly assist in the work of the literature review, for better achieving the research objective 1, and secondly, to contribute towards achieving the research objective 2 as below:

- To assist in the work of the literature review, for successfully revealing the evolving patterns of squares and squares' life in China. It especially functions in the study of Chinese ancient squares and squares' life, due to the lack of literature that could be found for this period.

- To assist in the work of the literature review, for a better understanding of the current situation and contents of the policy and design guidance that relate to urban squares, in both China and the West. This lays the foundations for firstly generating the conceptual modal of socially beneficial urban squares that are based in the Western context, and secondly, for developing and generating a new definition and classification of urban squares that can suit today's China.
- To assist the author in better understanding the situation of urban squares in today's Guangzhou, by reviewing the relevant official development strategies, reports, plans, statistical records, policies, and photographs of the city of Guangzhou and its urban squares. This directly contributes towards the author preparing the fieldtrips and then determining the study sites for this research.

Here, although the document analysis is one of the effective data collection methods that has been suggested to be used in the qualitative research by a number of scholars (Altheide, 1987; Bowen, 2009; Bosch et al., 2011; de Mello et al., 2012), its disadvantages and limitations still exist, and these have been made aware of by the author. In this research, two limitations associated with using document analysis may exist as follows. Firstly, the data collected here could be biased due to the accessibility to some confidential and updated data, and researcher's selection bias. Secondly, the data's validity and veracity is limited here because the documents were not produced for the purpose of this study, therefore, contents may lack the details which are needed by this research. Therefore, the application of document analysis in this research is conducted mainly as the supplement to the literature review, to a greater extent than simply working as an independent data collection method.

2.2.3 Structured Non-participant Observation

The design and application of non-participant observation in this research

Non-participant observation, which is also known as "direct observation" (Jersild and Meigs, 1939), is a data collection method that is particularly and widely used in social science research which needs the observation of behaviours, events, activities, and interactions, with the aim of gaining a direct understanding of a phenomenon in its natural context (Cooper et al., 2004; Sadovnik, 2006; Liu and Maitlis, 2010; Kumar, 2014). Distinguishable from participant observation, the observer does not "participate directly in the activities, ... but watches and records events through one-way mirrors or with cameras" (Liu and Maitlis, 2010, p. 610), which makes it suitable for use in this research.

In this research, non-participant observation is applied as one of the primary data collection tools, mainly for two purposes, as below:

- To collect the real usage patterns of the recreation squares in today's Guangzhou, which is determined to be illustrated by GIS behaviour maps in this thesis. With the application of the analysis methods of constant comparison analysis, theme analysis, and qualitative comparative analysis of these GIS behaviour maps, the users' usage features of and problems with the recreation squares in today's Guangzhou are revealed, which directly contributes to achieving the research objective 2.
- To contribute towards developing the questions that should be asked in the semi-structured interviews, and also to contribute towards determining the target interviewees for the semi-structured interviews.

From the literature review, two significant limitations of this method have been identified and outlined by a number of researchers. These are observer bias and consumption of time (Croll, 2004; Flick, 2006; Kumar, 2014). These limitations will significantly affect the validity and veracity of the data that is collected by this research tool and the working efficiency of this stage, which will therefore affect the accuracy and efficiency of the whole research. Therefore, to ensure that the validity of the data and the efficiency of the work are both within the research tolerances, a development of the research tool of non-participant observation is explored, to reduce the negative impacts of these limitations.

The exploration of the development of this is carried out from two aspects. The first is the exploration and determination of the recording equipment; and the second is the exploration and examination of the operation method. These are specified as follows.

On the aspect of the exploration of the recording equipment, the camera is selected and determined as the data recording equipment, instead of the traditional recording equipment of eyes, pen and paper (written notes) in this research. This is because the camera presents three advantages on recording matters which can significantly reduce the limitations that are caused by observer bias and time consumption. These three advantages are: firstly, a camera can record the data of behaviour patterns more accurately and factually, which has been demonstrated in Whyte's research (1980); secondly, it is able to record a large amount of data instantly, which is more suited to the sites in the Chinese context; and thirdly, it can provide a permanent and easily-reviewable record of the observed matter, which is more suited to this research (Sampson and Raudenbush, 1999).

On the aspect of the exploration of the operation method, inspired by Whyte's suggestion (2001) and Croll's research (2004) which indicate that the details of operation should be determined if a research is trying to "conceive an ideal device for studying people's behaviour in public space"

(Whyte, 2001, p. 102), the author decided to upgrade the data collection tool of non-participant observation to be “structured” non-participant observation by offering definite and designated operation details. Here, the method of pilot study (Yin, 2003) is applied to test the proposed equipment, and to explore and refine the proposed operation details for finalising the practical operation method for the formal non-participant observations in the selected sites in Guangzhou.

Following the pilot studies, the formal field observations were carried out at the beginning of 2013, based on the research outcomes of the two pilot studies. The schedule for the formal field observations was finally determined as follows:

- To carry out six days observations on each square, including, both weekdays and the weekends (every Tuesday, Thursday and Saturday of a week).
- To record the behaviours that occur in the chosen squares every hour from 7:00 to 24:00 on each observation day, by using the recording methods of “Behaviour Panorama” and “Behaviour Closeshot”. There were some exceptions to the recording times, which were determined based on the research outcomes of the pilot studies.

By the completion of the formal structured non-participant observations on site, 414 Behaviour Panoramas were collected with a set of corresponding Behaviour Closeshots, which were used as the foundation for producing GIS behaviour maps at the data analysis stage. The relevant contents of the pilot study and analysis methods are specified in the following sections.

The pilot study and formal non-participant observations

The pilot studies for the non-participant observations in this research were carried out twice at the end of 2012 for testing the equipment, determining the recording medium, identifying the recording period and frequency, and finalising the exact recording method. These were firstly conducted in Hero Square, and later in Water Fountain Square and Lighting Square.

Due to the first main purpose of conducting non-participant observations, which is to record the “actual” usage behaviours in the three squares, the recording media of photography and filming are short-listed, because Gehl and Svarre (2013) once mentioned that photography is a good tool for freeze-framing situations for later documentation and analysis, especially within a complex environment which is difficult to fully comprehend with the naked eyes; while Whyte (1980) using his successful experience announced that filming is a good tool for recording the public’s urban life for behaviours’ study. In this research, the size (large) and locations (complex and isolated by the city’s roads) of the three study sites make the application of video (filming) difficult, but highlights the superiority of photography; therefore photography is identified as the

appropriate recording medium for the non-participant observations in this research. Meanwhile, the Nikon D90 is tested, and determined, to be used as the appropriate recording equipment for this research.

Due to the emphasis on the non-participant observations in this research, to capture “what really happens” in the selected squares as precisely as the research can, the concepts of “Behaviour Panorama” and “Behaviour Closeshot” are devised by the author, as an innovative development of the research method of non-participant observation. “Behaviour Panorama” (see figure 2.2) is a photograph, which can record and present the behaviours that occur at a particular moment in a square, truthfully, accurately, and completely. This concept is created based on the inspiration of the concept of landscape panorama and Gehl and Svarre’s idea of “momentary picture” (2013, p. 56). While “Behaviour Closeshot” (see figure 2.3), is a photograph, which is taken at a particular time in a particular sub-area of a square, that can record and present the behaviours that occur at that moment, in that sub-area truthfully and accurately. The “Behaviour Closeshot” is the effective supplement to the “Behaviour Panorama” when the behaviours cannot be identified precisely in the “Behaviour Panorama” either due to camera angle or weather conditions. The concept of the “Behaviour Closeshot” is created, inspired by the research of Holland et al. (2007) and the research of Goličnik (2005). Their findings have inspired the author to: divide the site into a number of “micro-sites”, and take instant closeshot photographs of those specific micro-sites due to the need, to record the clear behaviour patterns for those micro-sites. The combination of these two recording methods can make the scene of a particular moment of a square reappear truly and accurately, which is particularly well suited to scenarios where there is: either a large scale site, and/or a complicated observation situation, and/or the need for extreme accuracy of recoding.



Figure 2.2 Example of “Behaviour Panorama” (taken by the author)



Figure 2.3 Examples of “Behaviour Closeshot” (taken by the author)

During the pilot studies, the micro-sites for the Behaviour Closeshots for each square were scheduled and tested to ensure that they are operable and practical. Finally, due to the specified situation of each square, it is determined that, in Hero Square, there are five micro-sites for taking

Behaviour Closeshots; in Water Fountain Square, four, and in Lighting Square, five.

Apart from determining the recording equipment, medium, and method, the determination of the recording period and frequency is another issue that was explored in the pilot studies. Based on the observations in the pilot studies, and the consideration of the schedule of Chinese routine life, the recording period and frequency is decided to be every hour, on the hour, from 7:00 to 24:00 throughout the day, with some exceptions, due to any special situations in the squares, e.g. the performance times of the music fountain in Water Fountain Square.

In conclusion, a structured non-participation observation method with operation details is finalised, based on the pilot studies. While, based on the research achievements of the pilot studies, the formal field observations were carried out in Hero Square on January 8th, 10th, 12th, 15th, 17th, and 19th 2013, and in Water Fountain Square and Lighting Square on January 22nd, 24th, 26th, 29th, 31st, and February 2nd 2013. On each observation day, a Nikon D90 camera was used as the equipment and located at the centre point of each square, and the recording methods of “Behaviour Panorama” and “Behaviour Closeshot” were used to record the real usage patterns at each pre-set time for each square. At each instance, 12 photographs for each square were taken, to be used for generating one final “Behaviour Panorama” for that particular time. In total, 4968 photographs were collected from the three squares for generating 414 Behaviour Panoramas for those three squares, which are used as the foundation to produce the digital behaviour maps for the data analysis, with the assistances of a set of Behaviour Closeshots of the three squares.

The compilation and analysis of data obtained from the structured non-participant observations

In this research, the compilation and analysis of the data collected from the structured non-participant observations involves four steps, as follows.

The first step is to integrate a group of single photographs into one “Behaviour Panorama” by using the software of “Panorama Maker” from Arc Soft, for the three squares. The second step is to identify the users’ codes according to the initial analysis of the Behaviour Panoramas and Behaviour Closeshots of the three squares. The third step is to transfer the behaviour patterns from the Behaviour Panoramas (with the supplement of Behaviour Closeshots) into GIS software by using the behaviours’s codes and users’ codes, to generate GIS behaviour maps for the three squares. Finally, the fourth step is to analyse these GIS behaviour maps according to certain themes, to reveal the real usage features of Chinese recreation urban squares, which not only directly achieves the research objective 2, but also contributes towards refining the interview questions and informing the author as to the target interviewees.

In detail, in the coding step, the users who appear on the Behaviour Panoramas and Behaviour Closeshots are coded with three themes, which are gender, age and participating group. In the theme of gender, the users are coded into two categories, which are male and female. In the theme of age, the age is classified into six categories, which are 0-3 year olds, 4-12 year olds, 13-18 year olds, 19-23 year olds, 24-65 year olds, and 65+ year olds, based on the literature review of the Chinese national census of population (2012) and the observation of the Behaviour Panoramas and Behaviour Closeshots. In the theme of participating group, the users are coded into four categories, which are by single, by couple, with friend(s), and with family, based on the observation of the Behaviour Panoramas and Behaviour Closeshots. When the coding system of the users is determined, the GIS input work of the observation data can take place.

Here, GIS behaviour maps are generated and used instead of the traditional noted behaviour maps, in this research, because with GIS behaviour map, it is possible to input more specifications with regards to the behaviours, at once, by layers and attributes, and output the behaviour maps through overlapping different layers and attributes to present the data in diverse ways to “give the reader a better understanding of the individual and collective patterns of use that emerge in a place” (Goličnik, 2011, p. 44). This advantage of GIS behaviour map has been made aware of by the author and therefore it is used in this research to contribute towards obtaining a more productive and efficient analysis of the observation data. During the GIS input process, every behaviour on the “Behaviour Panorama” photographs and “Behaviour Closeshot” photographs is identified with three factors which are the behaviour type, its user type and its occurring time. These factors are presented with their corresponding attributes in the GIS file, which are set and inspired by Goličnik and Thompson’s research (2010) and Goličnik’s research (2011) (see figure 2.4), to demonstrate the exact usage patterns of the three squares by public.

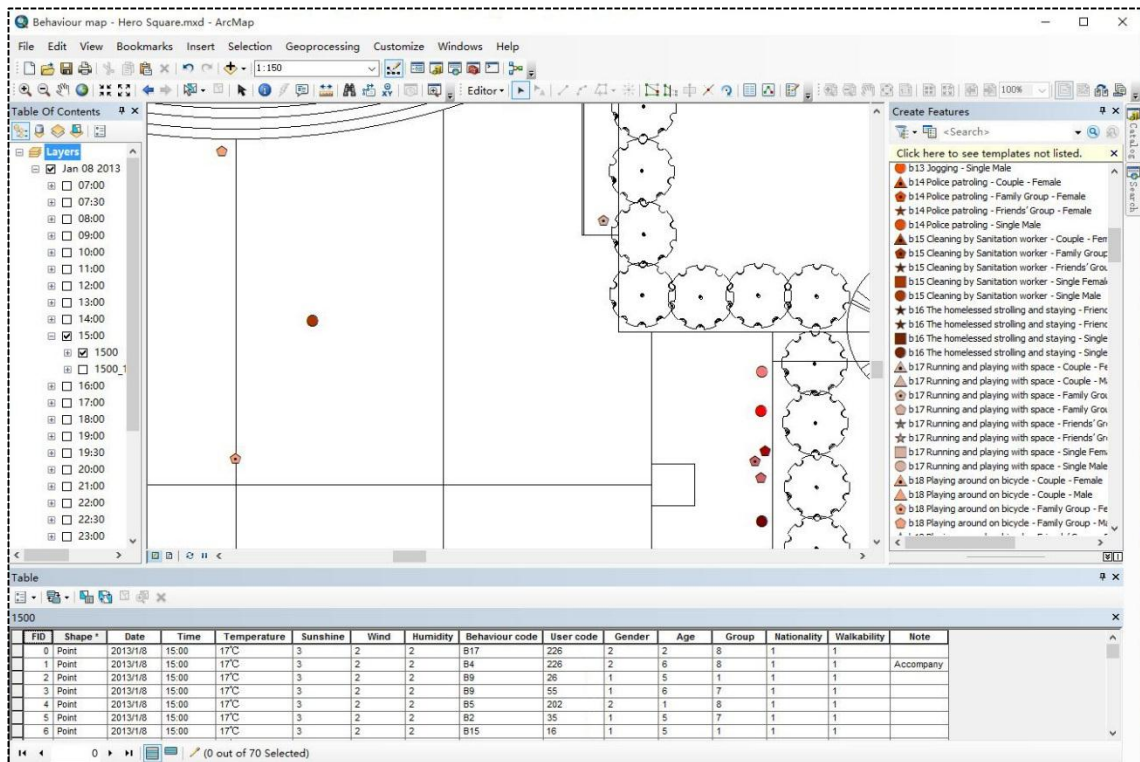


Figure 2.4 Screenshot of GIS working interface

In the analysis of these behaviour maps, the analysis methods of constant comparison analysis, theme analysis, qualitative comparative analysis (Onwuegbuzie et al., 2012), and interpretative analysis (Thwaites and Simkins, 2007) are used. In detail, the analysis of the behaviour maps follows three main themes, which are the diversity of users, the diversity of behaviours and the main usage and their participants in the three recreation squares. For the analysis of the diversity of users, a series of curve's diagrams (see figure 2.5) are generated, based on the GIS data with the assistance of Excel software, with three sub-themes. These are by gender, by age, and by participating group, respectively.

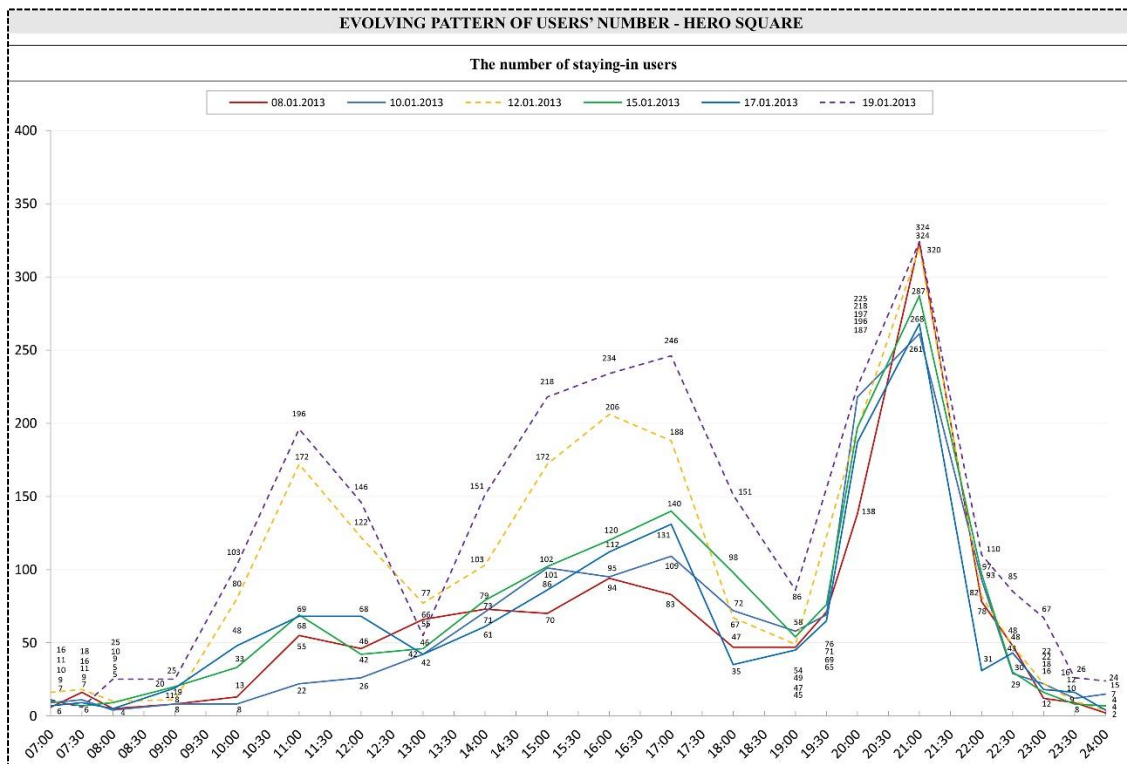


Figure 2.5 Example of the comparison curve’s diagrams

For the analysis of the diversity of behaviours, behaviour lists (see figure 2.6) and behaviour maps (see figure 2.7) are used to reveal the features of the usage behaviours by two sub-themes which are respectively by behaviour types and by behaviours’ distributions. For the analysis of the main usage and their participants, a set of tables (see figure 2.8) which summarise the top three and dominant behaviours for each observation time for each square are generated. The findings that are obtained based on the analysis of the observation data are illustrated in Chapter 6.1.

| BEHAVIOUR LIST - WATER FOUNTAIN SQUARE | | |
|----------------------------------------|--------------------------------------------------------|------|
| NO. | BEHAVIOUR | CODE |
| A Passing-through | | |
| 1 | Passing through on foot | a1 |
| 2 | Passing through by bicycle | a2 |
| 3 | Passing through by vehicle (square security) | a3 |
| B Staying-in | | |
| 4 | Sitting and reading | b1 |
| 5 | Using/ playing with phone or personal business | b2 |
| 6 | Sitting and smoking in a daze | b3 |
| 7 | Sitting and watching (people, plants, water fountain) | b4 |
| 8 | Sitting with a pram | b5 |
| 9 | Sitting and eating | b6 |
| 10 | Standing and watching (people, plants, water fountain) | b8 |
| 11 | Standing with a pram | b9 |
| 12 | Strolling with a pram | b11 |
| 13 | Strolling with a dog | b12 |

Figure 2.6 Example of the behaviour lists

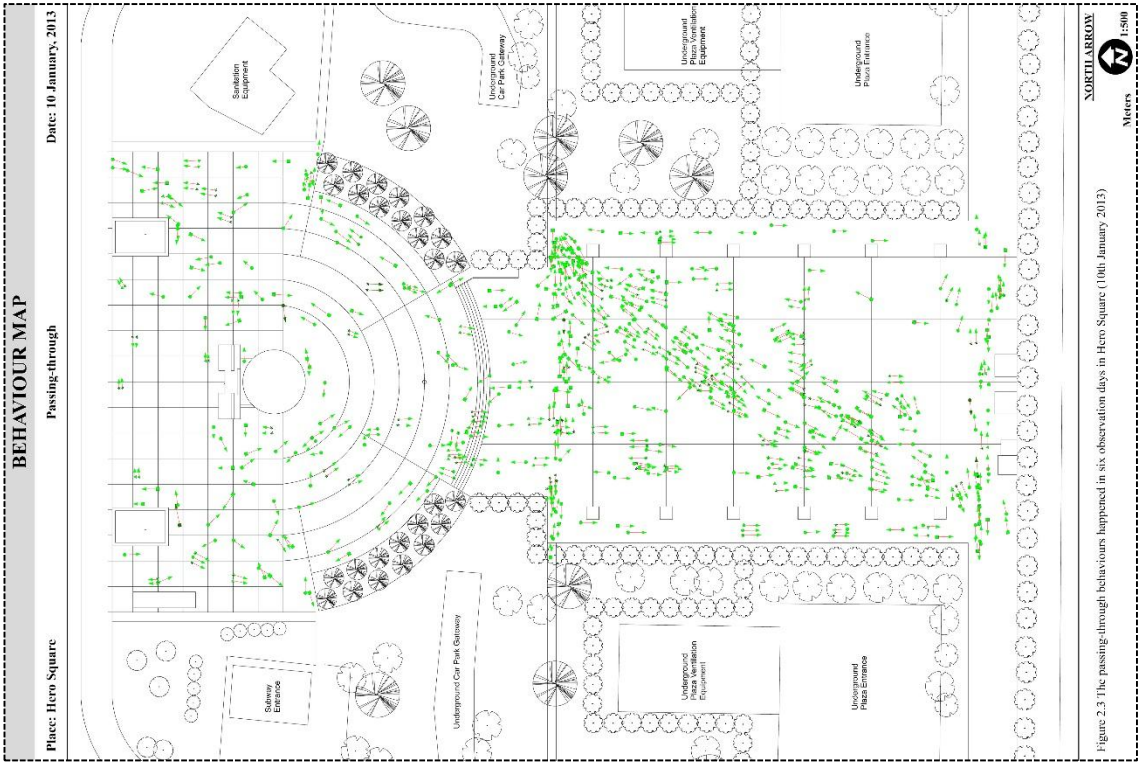


Figure 2.7 Example of the behaviour maps

| HERO SQUARE - WEEKDAYS | | | | | | |
|------------------------|-------------------------------|------------------------------------------------------------------------------------|--------------------------------------------|--------------------------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------------|
| Time | Passing-through Vs Staying-in | Top three main typical staying-in behaviours | Corresponding users by participating group | Corresponding users by age in the participating group | Corresponding users by gender in the participating group | Dominant behaviours |
| | | - Doing exercises (morning) (8 th , approximately 67%, 4/6) | Single (4/4) | 65+ year olds (100%) | Female (2), Male (2) | - Passing through on foot - Doing exercises (morning) |
| | | - Square patrolling (8 th , approximately 33%, 2/6) | Single (2/2) | 25-64 year olds (100%) | Male (2) | |
| | | - Doing exercises (morning) (10 th , approximately 67%, 6/9) | Single (6/6) | 65+ year olds (100%) | Female (2), Male (4) | |
| | | - Square patrolling (10 th , approximately 22%, 2/9) | Single (2) | 25-64 year olds (100%) | Male (2) | |
| | | - Square cleaning by sanitation worker (10 th , approximately 11%, 1/9) | Single (1/1) | 25-64 year olds (100%) | Female (1) | |
| | | - Doing exercises (morning) (15 th , approximately 50%, 5/10) | Single (5/5) | 65+ year olds (100%) | Female (2), Male (3) | |
| 07:00 | Similar | - Sitting and chatting (15 th , approximately 20%, 2/10) | Friends (2/2) | 25-64 year olds (approximately 50%) 65+ year olds (approximately 50%) | Female (1) Female (1) | |
| | | - Square patrolling (15 th , approximately 20%, 2/10) | Single (2/2) | 25-64 year olds (100%) | Male (2) | |

Figure 2.8 Example of the tables of the main usage and their users

2.2.4 Semi-structured Interview

The design and application of semi-structured interview in this research

Semi-structured interview, a type of in-depth face to face interviewing method, is open, allowing new ideas to be brought up during the interview, as a result of what the interviewee says (Gomm, 2004; Miles and Gilbert, 2005; DiCicco-Bloom and Crabtree, 2006; Harrell and Bradley, 2009). It is suggested for use in the research “where depth of meaning is important and the research is primarily focused in gaining insight and understanding” (Ritchie and Lewis, 2003, p. 138), while Bernard (1988) has suggested that it is best used when the interviewer won't get more than one chance to interview someone, and are often preceded by observation.

This qualitative data collection method is applied here for one purpose: to collect the data that can reveal the users' in-depth thoughts, desires, and suggestions on their usage of Urban Square in Guangzhou. The data obtained here is the crucial supplement to the data obtained from on-site observations, to achieve research objective 2 stated above.

This data collection method is selected here, mainly for three reasons. Firstly, it allows the researcher to prepare relevant and meaningful questions in terms of the research objective ahead of time, which ensures that the interview can proceed effectively and in a controllable manner (DiCicco-Bloom and Crabtree, 2006). In addition, it can help to ensure that the data collected is more comparable (Harrell and Bradley, 2009). Secondly, it offers moderate flexibilities for both the interviewer and interviewee and it makes the exploration of the interested topics that emerge in the interview possible, which can reduce the limitation caused by the questions being set in advance (Denscombe, 2007). All these make the collected data more informative and reliable. Thirdly, it offers the interviewee the freedom to express their views in their own terms, which makes the interviewee more relaxed and talkative, and this in turn can make the interview process run more smoothly and productively (Cohen and Crabtree, 2006).

To ensure the advantages of the semi-structured interview can be positively reflected in the data collection process of this research, the design of the semi-structured interview questions is structured with two principles. The first is a mixed use of close-ended and open-ended questions, which can strike a balance between the issue of the interview time and the informative richness of the data, while it also benefits towards reducing the bias caused by the researcher (Sommer and Sommer, 2002; Cohen and Crabtree, 2006). The second principle is to use a diverse question style which includes single-choice and multiple-choice, meanwhile some questions are posed with images, to make sure that the interview questions are more visualised and easier to be understood by the interviewees.

In detail, to ensure that the semi-structured interviews are able to collect complete and consistent information that is received across the different interviews, the questions within it are structured and prepared in advance. The questions are conceived and structured according to four themes, to achieve research objective 2. These themes are established based on the research outcomes of the literature review and non-participant observations. The first theme is to investigate the users' usage experiences, usage purposes, and satisfaction of urban squares in Guangzhou; the second theme is to investigate the users' satisfactions, thoughts, and suggestions on recreation squares in Guangzhou; the third theme is to investigate the users' usage features and suggestions on a particular recreation square in Guangzhou; and the final theme is to investigate the interviewees' personal background and additional information.

In Theme One, ten questions are designed to investigate the users' usage perceptions, usage purposes, and satisfaction of urban squares in Guangzhou. Here, the mixed use of single-choice and multiple-choice questions is applied to meet the research needs.

In Theme Two, five questions (from Q2.1 to Q2.5) are set to investigate the users' satisfactions, thoughts, and suggestions on recreation squares in Guangzhou. Amongst these, Q2.4 applies images as the answer options to present the question in a more visualised manner. Q2.5 uses a five-point Likert scale (Vagias, 2006) to investigate the public's thoughts and suggestions on the factors that could affect their usage decision and experience of recreation squares in Guangzhou.

In Theme Three, seven questions are designed to investigate the users' usage features and suggestions on a particular recreation square in Guangzhou (either Hero square, Water Fountain Square, or Lighting Square). This theme is structured with factual questions and opinion questions, to firstly investigate the usage features of the different recreation squares, and to secondly discover the users' thoughts and suggestions on that particular recreation square. All these inform the author of the reasons that create the different usage patterns in the different recreation squares. This directly benefits the generation of the concept and criteria of socially beneficial urban squares in Guangzhou.

In Theme Four, four questions are included on the finalised questions sheet, which are set to investigate the interviewer's gender, age, ethnicity and the availability to be interviewed further. The structure of this theme aims to help the researcher in tracing the relationship between the users' behaviour and their background.

Pilot study and amendments of interview questions

The pilot study was applied in this research in December 2012, to check the feasibility of carrying

out questionnaires followed by interviews, to develop the questions to be asked, to test the response possibilities of the interviewees, and to investigate the required time to conduct a complete interview. In this research, the pilot study was carried out twice to ensure that the design of semi-structured interview is feasible and effective to achieve the research objective 2.

Based on the pilot studies, a number of amendments were made which included the adjustment of the structure of the interview questions, contents, and their expression, to make it more practical, logical, and straightforward. In detail, four issues are found in the pilot studies and are improved as follows:

- For the improvement of the structure, the author combined the questionnaire and interview to generate a “questionnaire” style semi-structured interview, which includes both open-ended and close-ended questions, to reveal the users’ inner-most thoughts more precisely, deeply, and time-efficiently.
- For the improvement of the contents and expression of the questions, four adjustments were made, as follows:
 1. For the question: “How many different types of urban squares, categorised below, in Guangzhou have you used?”, images were added in the answer options to make it more visualised and easier to be understood.
 2. For the question: “The following diagrams show different ways that people sometimes gather in a square. Can you please rank them according to the degree of attractiveness for you to join in, in the use of this square?”, it was deleted due to its complexity to be understood and then be answered instantly. In addition, the answer to this question can be found through the analysis of the observation data.
 3. For the questions that use the Likert scale in the answer options, the Likert scale was restructured to make it more straightforward and concise.
 4. For the question: “Do you have a favourite urban square in Guangzhou? And if yes, which one is it?”, it was decided to be added to the question list after the pilot study, because the relevant contents had been mentioned many times by the interviewees during the pilot study.

Selection of respondent samples and sample size

The main purpose of sampling is to reduce the need for empirical operations which entail labour and cost (Babbie, 1990). Sample size should be considered according to the needs and reality of a research (Baker and Edwards, 2012), and the validity and quality should be considered more than the quantity in the sampling (Babbie, 1990).

It would appear that there is no formula to determine the appropriate size of a non-probability sample (Routio, 2005). In this research, both the selection and the size of the semi-structured interviews are determined based on research outcomes of the non-participant observations. Finally, 39 semi-structured interviews are decided upon, and are carried out across the three sites.

Limitations of semi-structured interview

In applying semi-structured interview as a data collection method in this research, a number of limitations are identified and briefly outlined as follows:

- Bias of interviewer and interviewee

As Patton (1990, p. 279) stated: “The quality of the information obtained during an interview is largely dependent on the interviewer”, the data collected during interviews in this research should account for the limitations that are lead to by the interviewers’ and interviewees’ bias due to their education level, cognitive competence and personal preferences.

- Time and cultural issue

Due to the budgetary constraint, the researcher is unable to employ more interviewers to carry out parallel interviews. Meanwhile, people are more likely to reject the in-depth interview inquires in China, due to the social cultures. In the limited time, it is found that completing a large number of semi-structured interviews is a challenge. In this situation, carrying out the “questionnaire” style semi-structured interview is determined because it is found that it could effectively reduce the limitations that caused by the time and cultural issue in the Chinese context.

- Validity

The researcher has no real way of knowing if the respondent is lying. The interviewee may not consciously lie, but may have an imperfect recollection of events, which may result in the limitation of the data’s validity. Therefore, the diverse nature of the questions is designed in order that they can corroborate each other to benefit towards reducing this limitation.

The compilation and analysis of data obtained from semi-structured interviews

In this research, the compilation and analysis of the data collected from the semi-structured interviews refers to McCracken (1988) 5-step analysis approach, which is appropriate for long interview’s analysis. In general, the analysis methods of constant comparison analysis, keywords-in-context, word count, theme analysis, qualitative comparative analysis, and narrative analysis have inspired and assisted the author in positively revealing the users’ innermost thoughts, desires, and suggestions on recreation squares in Guangzhou.

In this research, the transcribing and analysis work of the semi-structured interviews is structured into four steps as follows. The computer support (Google Forms and NVivo software) runs throughout the whole transcribing and analysing process because Flick (2006) suggested that using computers as an aid can improve the efficiency and richness of the research outcome of semi-structured interview analysis.

In detail, the first step is to transcribe the interview's answers from margin notes, into formal transcripts with Google Forms in Chinese, which is the interviewees' native language, because Tools4dev (2014) has stated that it is wise to transcribe the contents in the original language before it is analysed. The memos which are derived from the field notes and subsequent thoughts that the researcher have had about the respondents, respondent's answers, and interviews since the date of the interviews, are also input into Google Forms at this time. This step is conducted with the attitude that "the interviews have been transcribed with the required degree of accuracy" (Flick et al., 2004, p. 254) to prepare the foundation for the following analysis steps.

The second step is to review the transcript of each respondent and use "open coding" (Berg, 2007, pp. 317-320) to manage them, with the assistance of the NVivo software. The reading and reviewing of each interview transcript is carried out twice; the first time, for content understanding; the second time, breaking down the long respondent's long soliloquies into short bullet-points according to its main idea-meaning unit (Burnard, 1994). Then, the initial coding is conducted in a broad sense, according to the themes that were set when the author designed the interview questions. This process is conducted to "...consider whether the interviewees actually took in these terms, what the terms mean to them, which aspects they supplement, which they omit and what new topics, which were not foreseen in the guide, actually turn up in the collected data" (Flick et al., 2004, p. 254). Observations made at this stage are extended until the "implications and possibilities are more fully played out" (McCracken, 1988, p. 45).

Sequent to this, in the third step, a list of analytical categories (Glaser and Strauss, 1967; Burnard, 1994) is surveyed by the author, based on the outcome of the open coding and the consideration of the research objective 2. Then these categories are grouped together to conduct the final analysis themes.

In the fourth step, according to the analysis themes set above, the responses of the close-ended questions and open-ended questions of all transcript files, which are respectively in the Google Forms and NVivo software, are organised together. This step produces an organised and logical data pattern for the final analysis.

Finally, the author begins to look at the data patterns obtained from step four and offers the

explanations and discussions on these patterns, and translates the relevant contents from Chinese into English to finalise the solid research outcomes. The research outcomes that are obtained in this step directly contribute towards achieving the research objective 2, which is specified in Chapter 6.2.

PART 2

URBAN SQUARE

Part 2

Chapter 3 Urban Squares in China and the West

3.1 The Evolving Pattern of Urban Squares and Squares' Life in China

This chapter provides a historical review of the evolving pattern of urban squares, square life and the drivers of change in China. In general, the thousands of years of development of squares in China could be divided into three periods in terms of its feature in chronological order, based on the analysis of the literature review. The first period is the Ancient Square Period (170BC to 1840) which records the emergence and development of traditional squares (ancient squares) in China. This covers the Slave Society and the Feudal Society. The second period is the Modern Square Period (1840 to 1949) which witnesses the transformation period from the traditional squares to the modern squares in China. The third period is the Contemporary Square Period (1949 to the present) which records the emergence and development period of the contemporary square in China.

The main informative sources of reference on the development of Chinese urban squares are available only in the original Chinese language. Consequently the content of this chapter is produced based on the author's understanding of these and the interpretation of these to be expressed in English. The original Chinese characters are reproduced at intervals where there are

specific references to relevant urban squares. The details are discussed and illustrated in chronological order as follows.

1. The Ancient Period-Traditional Square

Historically, the period before 1840 is treated as ancient times of China. During this period, China experienced the Primitive Society, Slave Society and the Feudal Society (Zhang, 1991), and the traditional squares in China experienced their periods of appearance, development and recession. There is a lack of literature that directly illustrates the development of Chinese traditional squares, but a number of archaeological records and indirect records offer the author a foundation in the collection of information on the development of traditional squares in ancient China, and then tease out the evolving pattern of it as follows:

Before 170BC, China was in a Primitive Society, and at that time, the traditional squares began to sprout. This view is supported by the Jiangzhai ruins and the Banpo ruins in Shaanxi province, which are both typical and relatively intact ruins of the Yangshao Culture from the Neolithic period. The layouts of these (see figure 3.1 and 3.2) are similar, taking the form of a wide outdoor open space being surrounded by a few individual private buildings, and with a public building at its centre or at the edge (Shaanxi Local Records Institute, 1999). This wide open space served as the clan's gathering place for discussing the clan's important political affairs and for holding important religious activities, e.g. fetes (Wang, 1980). This is identified as the origin of Chinese traditional squares (Cao, 2005).

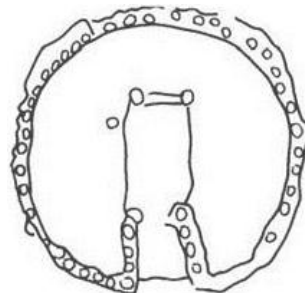
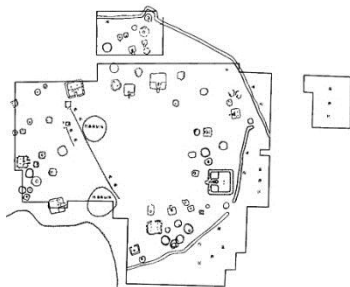


Figure 3.1 Layout of the Jiangzhai Ruins (Shaanxi Local Records Institute, 1999, p. 319) (left)

Figure 3.2 Layout of the Banpo Ruins (Shaanxi Local Records Institute, 1999, p. 320) (right)

From the narration above, it can be surmised that, Chinese traditional squares originated from the clan's needs for gathering together to hold political or religious activities. At this time, square form appears to be fairly organic, and is normally located in the centre of the layout of a clan's village. It would have a number of individual buildings coarsely surrounding it, and a public building placed at its centre, or at its edge. The square's life at that time mainly involved collective activities for political and religious affairs, such as public meeting, fetes and so on.

The Primitive Society in China lasted until the emergency of the Xia Dynasty. Subsequently, China progressed into the Slave Society, which covered the dynasties of Xia, Shang, Western Zhou, and the Spring and Autumn period. During this period, the Chinese traditional squares started to develop. This was marked by the appearance of the types of “Temple and Altar Square” and “Palace Square”.

As one of main characteristics of the Slave Society, the emperor emerged as the imperator of the society. Ancestral Temple, which served as the place for the emperor to work and for the public to make sacrifices to the imperial ancestors and the deities (Xu, 2004), became the significant building form in this period. This building has been discussed and considered to be the inheritance and development from the clan’s public building, and it is speculated that the wide open space surrounded the Ancestral Temple is the development of the rudimentary squares which appeared in the Primitive Society (Cao, 2005).

Later, from the Spring and Autumn period, with the promotion of the imperial power, the building form of Ancestral Temple experienced a significant evolution and its functions also evolved. Firstly, “Palace” appeared, to inherit the first function of the Ancestral Temple which was used as the specific work-place for the emperor; and secondly “Temple” and “Altar” appeared to inherit the second function of the Ancestral Temple which was used as the place for the public to make sacrifices to the imperial ancestors and the deities (Yang, 2003). Although, there is no literature which directly identifies the space around the “Palace” and the “Temple and Altar” as being called “Palace Square” and “Temple and Altar Square” at that time, based on the understanding of the evolutionary pattern of Chinese traditional squares and the records from later generations, e.g., “Kao Gong Ji Yi Zhu (Kaogongji annotation)” (Wen, 2008), “Han Shu (History of the Han Dynasty)” (Ban, n. d., cited in Ban, 2012), the author chooses to identify that the types of “Temple and Altar Square” and “Palace Square” had appeared during this period (Slave Society). Although there are no ancient Chinese prose that formally record these two types of squares and the squares’ life during this time, in line with the functions of the building that dominated the squares, the author daringly infers that, at this time, the squares’ life was similar to that of the Primitive Society’s which was mainly the gathering for the political and religious affairs.

When China progressed into the period of Feudal Society, which covered the dynasties from Zhanguo (the Warring States Period) to Qing, the traditional squares experienced a significant development. This period lasted for nearly a thousand years and was the key period for the traditional squares, because it witnessed the appearance, development, and recession of the different types of traditional squares in China. In terms of the square’s main functions and their origins, the author classifies the traditional squares which appeared during this period into three types. These are “Palace Squares”, “Temple and Altar Squares”, and “Market Squares”. Their

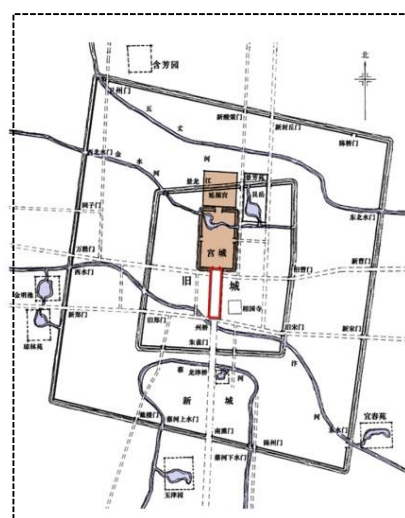
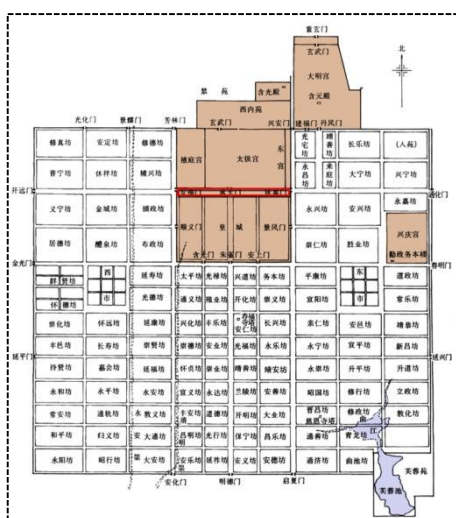
evolving patterns are illustrated below.

Palace Square

Since the Eastern Han Dynasty, imperial power had been further enhanced. Meanwhile the layout of the capital changed to be in a north-south direction to facilitate the officers' gatherings for worshipping the emperor which was called "Chao Hui" (Zhou, n. d., cited in Xu and Chang, 2014), and for conducting large-scale royal celebrations.

During the Han Dynasty, the magnificent Palace was built to hold the activities mentioned above, and "Palace Square" which is the open space in front of the Palace was built to assist in holding these activities, e.g. "Yuan Hui Yi" (Wu and Hou, 1977).

Later, during the Tang Dynasty, the layout of the capital was changed to a new style and it influenced the development of city layouts over the subsequent centuries in China. The main feature of this new capital layout was that a city contained three zones with the north-south axis, which were "Palace Zone", "Royal Zone", and "Outer Zone". At this time, Palace Square was placed in front of the entrance to Palace Zone (the group of palaces) and encompassed the whole east-west area (Wu and Hou, 1977) (see figure 3.3). This was 440 meters wide and was used to hold the significant royal political activities, royal entertainment activities and civil festival celebrations (e.g. receiving diplomatic envoys, sending off military expeditions, announcing edicts, entertaining ministers (Ya, 2007), or celebrating the Lantern Festival (Liu and Shen, 1975, cited in Liu and Shen, 2013). As seen from the capital's layout (figure 3.3), Palace Square during the Tang Dynasty presented a liner shape (in an east-west direction) and was surrounded by a number of government offices.



Legend:
 Square Area

Figure 3.3 Layout of Chang'an - the capital of the Tang Dynasty, derived from (Hou, 2002, p. 49) (left)
 Figure 3.4 Layout of Dongjing - the capital of the Song Dynasty, derived from (Li, 2012b, p. 53) (right)

Subsequently, during the Song Dynasty, the layout of the capital changed again, and Palace Square was changed to be aligned in an east-west direction, which was surrounded by the stoas on both the east and west sides (Wu and Hou, 1977) (see figure 3.4). From the records of ancient Chinese prose “Dongjing Meng Hua Lu (The record on life in Kaifeng)”, (Meng, 1127, cited in Meng, 2013), two issues are found with regards to Palace Square at that time. Firstly, the market was placed along the two sides of Palace Square and engaged the stoas’ space, and secondly landscaping started to emerge within Palace Square (Meng, 1127, cited in Meng, 2013).

The square’s life in the Song Dynasty inherited the similar pattern to that of the Tang Dynasty, which included the royal political activities, royal celebrations and civilian festival celebrations. However, at this time, access to the centre part of the square was prohibited to ordinary people, which was recorded in the ancient Chinese works “Dongjing Meng Hua Lu The record on life in Kaifeng” as: “中心御道，不得人马行往，行人皆在廊下朱杈子之外” (Meng, 1127, cited in Meng, 2013). This implies that the access to Palace Square started to be limited to the civilians, and Palace Square gradually transformed into a semi-public space during this dynasty, which is different to that of previous dynasties.

During the Ming and Qing Dynasties, as Meng Fanren (2010) discussed, Palace Square started to be placed in front of the Royal Zone instead of the Palace Zone (see figure 3.6-3.8), and presented a “T” shape. During this period, the layouts and the functions of the buildings along the east side of Palace Square did not appear to obviously change. The layouts and the functions of the buildings along the west side of Palace Square only appeared to experience some minor changes due to the transformation of the official system. As discussed by Wu Liangyong and Hou Renzi (1977), Palace Square during these dynasties, had become a totally exclusive area for the royal’s usage, which was only open to the emperor, imperial clans and officials. The celebration events (activities) that occurred in Palace Square changed from the style of “happiness with people together” that had occurred in the previous dynasties, to the style of “celebrating only by the emperor and his clans” (Wu and Hou, 1977). From this time, the celebration places for the royals and the civilians had started to present a clear differentiation. The image below (see figure 3.5) presents the usage pattern and characteristic of the Palace Square in Qing Dynasty, which is serious and solemn.

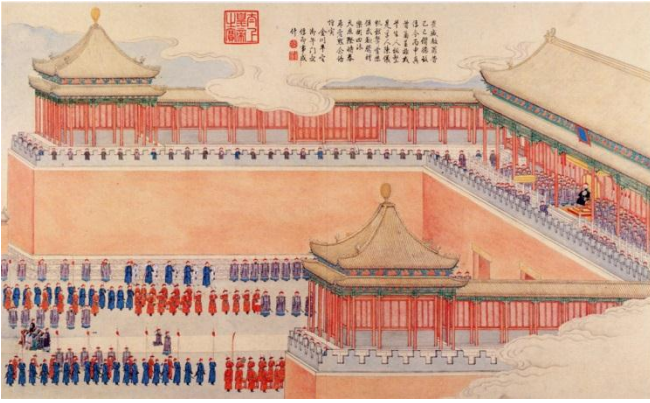


Figure 3.5 Traditional Chinese painting of Palace Square- Gathering for political activity-“Shou Fu” (Giuseppe Castiglione, n.d.)



Legend:
 Square Area

Figure 3.6 Layout of the capital of the Ming Dynasty (Nanjing), derived from (Hou, 2002, p. 127) (left)

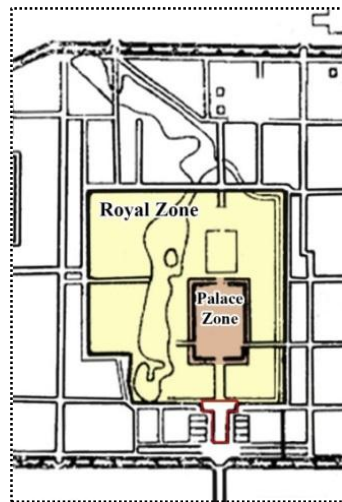


Figure 3.7 Layout of the capital of the Ming Dynasty (Beijing), derived from (Hou, 2002, p. 129) (middle)

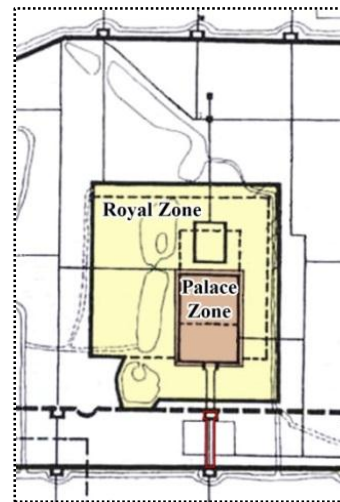


Figure 3.8 Layout of the capital of the Qing Dynasty (Beijing), derived from (Liu, 2013, p. 290) (right)

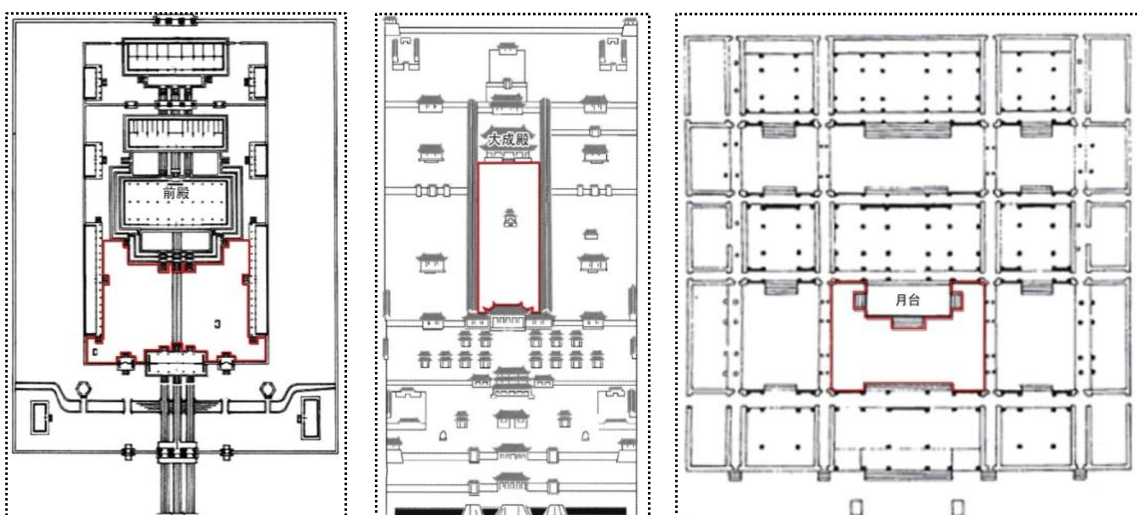
Temple and Altar Square

As mentioned above, since the Slave Society, the building forms of “Temple” and “Altar” appeared, to inherit the second function of the Ancestral Temple which was used as the place for the public to make sacrifices to the imperial ancestors and the deities. The first written record to imply that the open space in front of the “Temple” and “Altar” was “Square”, appeared during the Warring States Period in the works “Meng Zi (Meng Zi)” as “子贡反，筑室于场” (Meng, n. d., cited in Wang, 2004). Later, the written records that formally and clearly identified the open spaces in front of the “Temple” and “Altar” as “Square” appeared in the dynasty of Qing, in the works “Yu Zhi Bing Xi Fu (Poetry and rhapsody of play on ice)”, as “如祭则受福申明誓兮，众听无哗陈广场” (Qian, 1745).

From the Warring States Period to the Qing Dynasty, temples came to be built mainly for offering sacrifices to the ancestors, and altars were built mainly for offering sacrifices to the deities. In this development process, Temple Square and Alter Square both appeared with hierarchical differentiations due to the hierarchical differentiations amongst the temples and altars that dominated them. This is because the rules of etiquettes became ever stricter.

In detail, with regards to the hierarchy of the temples, there were three levels. Among these, the temples for the sacrifices to the imperial ancestors were ranked first; the temples for the sacrifices to the deceased great people were ranked second; and the temples for the sacrifices to a particular clan were ranked third (Cai and Lu, 2006, pp. 35-40). During this period, the royal Ancestral Temples and their squares which were used for the sacrificial rites to the imperial ancestors were only open to the emperor and the ministers (Wu and Hou, 1977); the memorial temples and their squares which were used for the sacrificial rites to martyrs and great people were open to all (Cao, 2005); and the clannish temples and their squares which were used for the sacrificial rites to the clan's ancestors were only open to the clans' male members (Lou, 2009).

Due to the impact of the gradual introduction of strict rules of etiquettes, the sacred activities that occurred in the temple squares during this period had become distinguishable from the spontaneous and natural sacred activities that occurred during the Primitive Society and the Slave Society (Cao, 2005). From the analysis of the layouts of "Temple Squares" (see figure 3.9-3.11) it is found that, during this period, regardless of the hierarchy of the temples and their squares, these squares presented a "courtyard style" on form. Furthermore, it was surrounded by the main building of worship to its north, the main entrance to its south, and the accessorial buildings on its east and west sides.



Legend:

□ Square Area

Figure 3.9 Layout of the Qing Imperial Ancestral Temple, derived from (Hou, 2002, p. 139) (left)

Figure 3.10 Layout of the Confucian Temple in Shandong, derived from (Huan, 2011) (middle)

Figure 3.11 Layout of the Chen Clan Ancestral Hall, derived from (Ou, 2014) (right)

The altars, which were built without roofs, for offering sacrifices to the deities, also appeared with hierarchy. The altars that were used by the emperor to worship the deities such as heaven, earth, moon, and harvest were ranked first; and the altars that were used by the civilians to worship the folk deities were ranked second. During this period, the top hierarchy of altars and their squares had strict restrictions to the users and were only open to the emperor and his ministers (Lou, 2009). Due to the set of etiquettes, this class of altars and their squares possessed a grand and solemn form. Furthermore, based on analysis of the surviving altars and altar squares in the top hierarchy (e.g. The Altar/Temple of Heaven (see figure 3.12) and The Altar/Temple of Moon (see figure 3.13), it can be summarised that, on form, the top hierarchy Altar Square was a regular shaped open space with the altar at its centre. It can be deduced that the activities that occurred in the altar squares of this hierarchy were solemn and stylised sacrifices to the deities, based on the study of the ancient Chinese written records “Libu Zhi Gao (Libu records)” (Yu, n. d., cited in Ji, 1987). The image below (see figure 3.14) presents the usage characteristic of the Temple and Alter Square in Qing Dynasty.

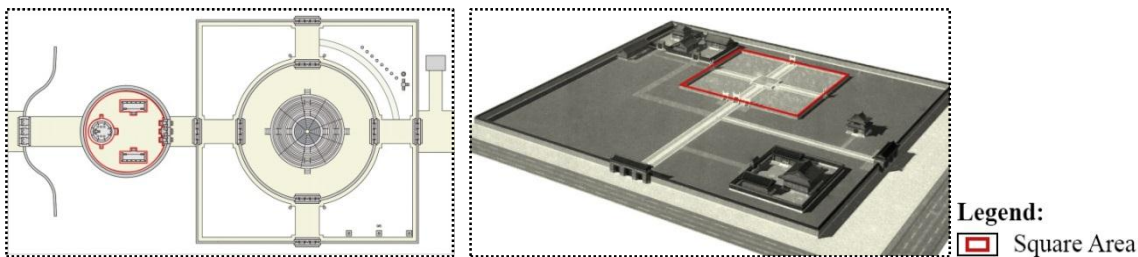


Figure 3.12 Temple of Heaven, derived from (Liu, 2013, p. 352) (left)

Figure 3.13 Temple of Moon, derived from (Qi, 2007) (right)



Figure 3.14 Traditional Chinese painting of Temple and Alter Square -
The worshipping ceremony of the emperor during the Qing Dynasty (Chen, n.d.)

While, for the second hierarchy Altar Square, which was used by the civilians to worship the folk deities, it presented a reduction in scale compared to the first hierarchy Altar Square (Cao, 2005). Based on the analysis of the relevant ancient records, it is found that the main activities which took place in the civilians’ altar squares were civilians’ prayer and the corresponding dancing performances. These were more freely and lovingly performed than those that occurred in the royal altar squares (Yang, 547, cited in Shang, 2012; Meng, 1127, cited in Meng, 2013; Tuo, 1344, cited in Tuo, 2008).

Market Square

The appearance of “Market Square” in China could be dated back to the Spring and Autumn period (Cao, 2005). However, the period that can provide the first solid evidence of the existence of “Market Square” is the Qin Dynasty, which has been recognised based on the archaeological discovery and subsistent written records “Kao Gong Ji Yi Zhu (Kaogongji annotation)” (Wen, 2008). The archaeological discovery of Zaiyong, which was the ruins of the capital of the Qin Dynasty, reveals that there was a market square at that time, and it was located in the north-east of the capital. It covered an area of approximately 30,000m² (160m x 180 m (east-west)) and was bounded by the walls on its four sides (The Institute of Archaeology CASS, 2004; Xu, 2004, p. 65). Due to the ancient Chinese records (Sima, n.d., cited in Sima, 2007, vol 75; Yuan, n. d., cited in Yuan, 2013), it can be deduced that, at this time, Market Square was an enclosed outdoor market with fixed opening times and market administrative staff.

Later, during the Western Han Dynasty, the city layout and the structure of the market inherited those of the Qin Dynasty, but were a further development of those (Zhang, n.d., cited in Zhang, 2011). Chen Zhi’s records (1981) revealed that, during the Western Han Dynasty, nine markets emerged. There were six street markets which formed the market zone in the west called “West Market”, and there were three street markets which formed the market zone in the east called “East Market” (see figure 3.15). This market layout with “East Market” and “West Market” in a city influenced the city planning in the following thousand years, and achieved its most prosperous period during the Tang Dynasty and came to an end during the Song Dynasty.

During the Tang Dynasty, the planning structure of a city with “Residence Zone” and “Market Zone” dominated the city planning, which meant that the market layout of “East Market” and “West Market” was further strengthened. Meanwhile “East Market” and “West Market” became the commercial centre of Chang’an (the capital of the Tang Dynasty) not only for national trade, but also for international trade (Hou, 2002, p. 49). In plan, the “East Market” is approximately 1000m (north-south) by 924m (east-west), with two entrances on each of its four sides, with wide traffic roads connected these internally. Inside the market, the whole space was divided into nine rectangular areas, with the official management office at its centre, which was recorded by Song Minqiu in his “Chang’an Zhi (Records of Chang’an city)” (Song, 1076, cited in Song, 2013) (see figure 3.16). Compared to the former dynasties, the significant change for “Market” was that it gained the ability to hold cultural recreation activities (e.g. the acrobatic performances) (“Liu Bingke Jia Hua Lu (Liu Bingke’s words)” by Wei Xuan (Wei, n. d., cited in Ji, 1987), “Yang Tai Zhen Wai Zhuan (Historical biography of Yang Yuhuan)” by Yue Shi (Yue, n. d., cited in Lu, 2006)).



Legend:

□ Square Area

Figure 3.15 Layout of Chang'an, the capital of the Western Han Dynasty, derived from (Liu, 2013, p. 43) (left)

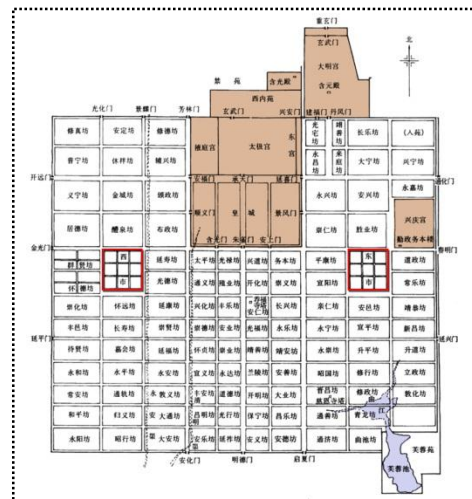


Figure 3.16 Layout of Chang'an, the capital of the Tang Dynasty, derived from (Hou, 2002, p. 49) (right)

Later still, in the Song Dynasty, due to the reforms in city planning, “Market” evolved from an enclosed style to an open style, and became an open “Street Market” rather than an enclosed “Market Zone” (Yang, 2003). This change not only broke the previous shape and structure of the market layout, but also created a more vibrant market atmosphere, which impacted upon the layouts of “Market” in the following thousand years in China. Later, during the Ming Dynasty, this style of Market was developed further. It became more freeform and larger; meanwhile some celebrations for special festivals were moved into open “Street Market”. This can be deduced from the records and descriptions in the book “Di Jing Jing Wu Lue (Teikyo scene slightly)” (Liu and Yu, 1635, cited in Liu and Yu, 2001).

Furthermore, the discussion of Cao Mingde (2005) revealed that “Street Market” functioned as a place for trade during normal days, but functioned as a recreation square during festival days where it would have been possible to watch performances of opera, to chat, to play chess, and so on. From this, it can be deduced that “Market” started to become more like “Market Square” since the Ming Dynasty, because since then, it not only carried out the commercial activities, but also the social cultural activities. The painting below (see figure 3.17) outlines the scene of the commercial and recreational usage of Market Square in the traditional period (Qing Dynasty). Apart from the commercial trade and civilians’ recreation, sometimes “Market Square” was also used as the place for displaying executions (see figure 3.18) which continued right up until the 20th Century.



Figure 3.17 Painting of Market Square – Commercial and recreational activities during the Qing Dynasty (Ansichten, n.d.) (left)

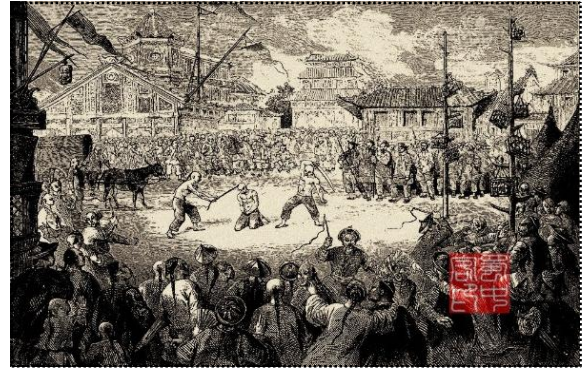


Figure 3.18 Drawing of Market Square – Displaying execution during the Qing Dynasty (Vaumort, 1861) (right)

2. The Modern Period (1840-1949) - Modern Square

The First Opium War (1840-1842), which happened at the end of the Qing Dynasty, heralded the beginning of the modern period of China (Zhou, 1995). Due to the two Opium Wars and the ensuing invasion by Western countries, China gradually transformed from being a feudal society to being a semi-colonial and semi-feudal society (Xu, 2013). Since then, a number of cities with territories leased to the Western countries started to appear. However, the Western urban squares had not yet been imported into China (Cao, 2005), because those leased territories were loosely located in the different cities which limited the possibility of their regeneration.

However, this situation changed after the Sino-Japanese War (1894). After this War, a number of Chinese cities, e.g. Qingdao, Dalian, Harbin, became completely leased cities, which were totally taken over and occupied by the colonial countries (some Western countries and Japan). This provided the colonial countries with the opportunity to carry out large scale regenerations of the colonial cities. As recorded in “Zhongguo Cheng Shi Jian She Shi (The urban planning history of Chinese cities)” (Dong, 2004), at this time, those colonial countries mainly adopted their typical Western city layouts in the regenerations of those leased cities (Dong, 2004). Thereupon, the concept of “Urban Square” and their forms which originated in the other Western countries were imported into Chinese leased cities and flourished, which has influenced the squares’ development in China since then.

In contrast, the Chinese traditional urban squares fell into decline, either due to the change in their social functions or the impact of the typical Western square layouts. Their decline was highlighted by the disappearance and transformation of the “Palace Square” and royal “Temple and Altar Square”, and the decline of the traditional “Market Square”.

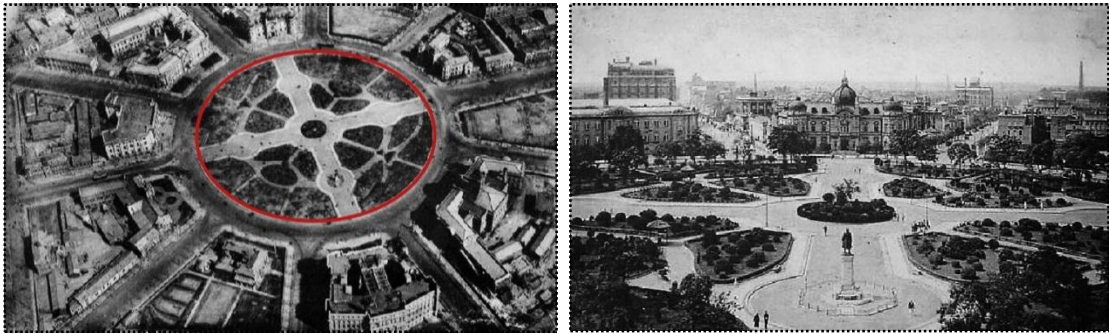
In detail, since the establishment of the Chinese republic (1912-1949), the royal power was

overturned. Therefore, “Palace Square” which exclusively served the royal hierarchy lost its significant reason for existence and showed significant transformation. In 1913, the Palaces in Beijing were opened to the public; and in 1925, the Forbidden City was completely changed and became a Palace Museum (Xiang and Han, 2001). The “Palace Square” was regenerated into an “Urban Square” that was opened up to the public as a whole in 1915, which was planned and managed by a German architect Curt Rothkegel (Osvald, 1985). Meanwhile, since 1914, the royal temples, altars and their surrounding squares were successively regenerated into public parks (Dong, 2004). While traditional “Market Square” which mainly served the civilians were also affected by the wars and showed significant decline, which was detected by the records “Gu Du Jian Wen Lu (Memoirs of Beijing: temple fair)” (Di, 2002), “Shi Lun Miao Hui Huo Dong De Gong Neng, Yan Bian Ji Qi Guan Li (Discussion of the Chinese temple fair activities' function, evolution and management)” (Sai, 1992) and “Jiu Du Wen Wu Lue (Old relics are slightly)” (Tang, 2000).

During this period, the application of the exotic concepts and forms of “Urban Square” in Chinese cities was presented in two ways. The first was new-build in the leased cities by the colonial powers according to the new city planning; and the second was the regeneration in the non-leased cities based on the imitations of the Western squares by the Chinese national government, as follows.

In the leased cities, e.g. Qingdao, Dalian and Harbin, the planning and creation of new urban squares followed the new planning of these cities. As discussed in “Zhongguo Cheng Shi Jian She Shi (The urban planning history of Chinese cities)” (Dong, 2004), in Qingdao, the city’s regeneration was carried out by Germany following their Western style city planning in 1900. In line with this, a city centre square was built and located in front of the Supreme Administrative Centre of the colonial government (Today’s Qingdao Municipal People's Congress office), surrounded by a number of government buildings with six city roads radiating out from it. In Dalian, Russia scheduled the new city layout based on the city planning of St. Petersburg, which was deeply inspired by Paris’s urban planning in 1900. Therefore, the city layout of Dalian, built by them, presented a similar city layout to that of Paris. This involved an emissive single-core pattern with a number of either big or small squares located at the nodes of the grid. The representative square, built by Russia, in Dalian was “Nicholas Square” which was renamed to Zhongshan Square in 1945 in honour of Mr. Sun Yat-sen (Cao, 2005). It formed a circular shape with the diameter of 123m, which had ten traffic roads radiating out from it and was surrounded by a number of Western style government buildings, opera theatres and other commercial buildings (see figure 3.19). In Harbin (Nan Gang District), Russia conducted the regeneration of the Nan Gang District with similar Western urban planning method to that applied in Dalian. Therefore, regardless of the layout of the city, the urban squares that were newly built all presented

a similar form to those of Dalian, which were all Paris's style.



Legend:


 Square Area

Figure 3.19 Plan and Aerial view of Nicholas Square in Dalian, China (Qing, n.d.)

In the non-leased cities, e.g. Beijing, Nanjing, in the period before the establishment of the Republic of China, the emphasis of learning from the West was on enriching the country and increasing its military force (Zeng, 2011) above other affairs. Therefore, the non-leased cities' planning still continued to use the Chinese traditional style. However, this changed after the establishment of the Republic of China in Nanjing. While, between 1927 and 1937, the national government started to conduct the regeneration of non-leased cities. The project of "Shou Du Ji Hua (Capital plan)" for Nanjing (Guo Du She Ji Ji Shu Zhuan Yuan Ban Shi Chu, 2006) and the project of "Policing Shanghai 1927-1937" for Shanghai (Frederic Wakeman, 2004) were the most influential urban planning projects at this time in China. From the discussions of Cao Deming (2005) and Tan Zongbo (2005), it is clarified that both of these planning projects referred to the Western style. Furthermore, the project for Nanjing referred to the American urban planning style, and the project for Shanghai referred to the European style. From this, it can be deduced that the build of urban squares in the Chinese non-leased cities were naturally influenced by the Western concepts and forms of "Urban Square".

After the eight years Anti-Japanese War (1937-1945), the national government had scheduled some long-term urban planning for a number of cities, such as Nanjing, Chongqing, Tianjing, Changsha, and so on; however due to the civil war, these had not been implemented (Cao, 2005). During the period of the Republic of China (1912-1949), few large-scale and influential urban squares were built in China due to social unrest.

From the discussion above, it could be summarised that in the modern era (1840-1949), the Chinese traditional urban squares either disappeared or gradually declined due to social changes, multiple wars, and the application of the exotic concepts and styles of "Urban Square". Meanwhile the newly built squares in this period either by new-build or regeneration all were influenced by the Western style of urban squares. This period was the transformational period for

Square in China, which witnessed the decline of the traditional squares and the application and the flourishing of the Western urban squares.

3. The Contemporary Period (1949-Present) - Contemporary Square

Since the establishment of the People's Republic of China in 1949, the development of squares has experienced four periods. These are: the early days of New China (1949-1965), the Cultural Revolution (1966-1976), the early days of reform and opening-up (1977-1995) and the development of reform and opening-up (1996-present).

During the early days of New China (1949-1965), urban squares only existed in few significant cities, which had experienced the large-scale regenerations either by the colonial countries or the national government (Nanjing) before the establishment of New China, e.g. Beijing, Nanjing, Dalian, and Harbin. Due to the needs for large squares for the people's celebrations of the establishment of New China, for reflecting the new look of New China, and for commemorating the heroes who were sacrificed in the wars, the new people's government (Beijing) decided to plan and built a series of large-scale urban squares (Cao, 2005). This aim was achieved in two ways. The first was to regenerate a number of large semi-public open spaces into public urban squares, such as regenerating the old Shanghai Race Club into People's Square and Cultural Park in Shanghai (Huang, 2000), regenerating the old Qingdao Racecourse into People' Square (Qingdao City Local Records Institute, 1999), and regenerating Tiananmen Square into a more grand and open square (Wu and Hou, 1977). The second was to build a number of new public urban squares in combination with municipal facilities, such as Wuyi Square in Changsha, Haizhu Square in Guangzhou, Bayi Square in Nan Chang, and so on. These regeneration and new-build squares all followed Paris's style, which was represented by a circular shape with emanative city roads within a grid city layout. At this time, the squares mainly pursued the grand and aesthetic perception on form to a greater extent than other matters. Later, this trend was queried and eradicating formalism came to be advocated due to the economisation of land resources (Du, 1957; Zhao, 1965).

Later still, during the period of the Cultural Revolution (1966-1976), due to the internal class struggles, few squares were built, except for a very limited number of urban squares, which were built for worshipping Mao Zedong (the first president of New China), such as Tianfu Square in Chengdu (see figure 3.20). These limited number of urban squares normally presented a grand scale and regular shape, with monument(s) inside.



Figure 3.20 Photograph of Tianfu Square in Chengdu in 1985 (Huang, 2008)

After 1978, Chinese society experienced a significant change in national development policy (the policy of reformation and opening) which determined that the development emphasis of China was changed to the development of the economy, rather than conducting class struggles (Li and Zhen, 1993). This facilitated the further study of the Western developed countries and significantly influenced the development of urban squares in China.

Due to the change in the development emphasis of Chinese society, the needs for political rallies significantly reduced, and the needs for facilitating the economic development and the public's social life were raised and gradually became more important. Thus, people's attention shifted away from the needs of the urban squares mainly for supporting political rally and memorial activities for the martyrs and great men, to the needs for supporting the public's urban economic life and social life. Against this background, the development of urban squares stepped into a new development period, which was distinguishable from previous periods. These new urban squares were created in three ways: by regenerating the old political squares and memorial squares to become recreation squares; by building a series of new commercial squares; and by building a number of new recreation squares. During the same period, accompanying this change, some traditional squares' life started to reappear.

In detail, during the 1980s, the regenerations of the old political squares and memorial squares dominated the development of the urban squares, (e.g. People's Square in Dalian, Wuyi Square in Taiyuan, Huiquan Square in Qingdao, and Dongfanghong Square in Lanzhou) (Li, 1988; Cao, 2005). This regeneration was mainly manifest in the form of demolishing the rostrums and increasing the greenery.

Since the 1990s, "Urban Square" came to be officially identified and classified. In the national Code -"Cheng Shi Yong Di Fen Lei Yu Gui Hua Jian She Yong Di Biao Zhun GBJ137-90 (Code for classification of urban land use and planning standards of development land GBJ137-90)" (1990, p. 6) which was issued in 1990, "Urban Square" was first identified as one type of urban land use in China, which only included the public square spaces and excluded the exclusive square

spaces that belonged to any particular organisations. Urban squares were classified into two types by functions, which were “Traffic Square” and “Recreation and Rally Square”. “Traffic Square” represents the squares which are mainly for the traffic’s gathering and dispersal; and “Recreation and Rally Square” represents the squares which are mainly for recreation, commemoration occasions, and gatherings.

Since this time, a number of political squares and memorial squares were demolished, and the building of “Recreation and Rally Square” for the public became a trend and dominated the development of the urban squares in China (Cao, 2005; Zhang 2006). Amongst these, the group of Bund Squares built in 1992 in Shanghai, Potala Palace Square built in 1995 in Lhasa, and Xiwang Square built in 1995 in Dalian, were the typical representatives of the squares which were built for the public’s urban social life (Chinese Historical and Cultural Cities Research Institute, 1987; Li, 1988; Wang et al., 1999; Cao, 2005). They were all offered a number of elements which could contribute towards the recreation atmosphere, e.g. fountain, sculpture, greenery, and colourful illumination.

Apart from that type, the type of “Commercial Square” also came into existence due to the reorganisation of the commercial value of “Square” (Wang et al., 1999; Niu, 2002; Cao, 2005). Xujiahui Square in Shanghai built in 1993 and Shangxiajiu Square built in 1995 in Guangzhou were the typical representatives of this type of square (Chen, 2001; Li and Zhou, 2008). Meanwhile, the new-build squares also included some memorial squares at the beginning of the 1990s’, such as Luxun Cultural Square in Shaoxing, and Chenyi Square in Shanghai, and so on (Cao, 2005).

Later, marked by the reporting and publicising experience of planning and building urban squares in Dalian by “People’s Daily” from 1996 (Lin, 1996; Wang, 1996; Duan and Liu, 1997; Ma, 1997), the contemporary urban squares in China stepped into an intense development period which lasted for over 10 years. In those ten years, correspondingly, the research into squares was also active.

In these researches, the definitions and developed classifications of urban squares were raised by some scholars. Amongst them, the research of Li Zemin (1988), the research of Wang Ke et al. (1999), and the research of Li Dehua (2001) into the definition and classification of Chinese squares are the most influential works and are still being used to date.

In detail, Li Zemin was the first person who developed the definition and classification of squares based on the official identification and rough classification in contemporary China, in his works “Cheng Zhen Dao Lu Guang Chang Gui Hua Yu She Ji (Planning and design of town streets and squares)”. He (1988, p. 165) defined the “square” as below:

“Town Square is the public space which has not been occupied by buildings and has access to the city roads in the layout of a city. It does not only play an important role in the public traffic system as a traffic gathering and dispersal hub for vehicles and pedestrians, but also acts as the society hub for the public’s cultural and political life” (Author’s translation).

He (1988, p. 166) classified the squares into four types by functions which are respectively “Commercial Square”, “Memorial Square”, “Traffic Square”, and “Relaxation and Recreation Square”.

While the definition and classification of squares by Wang et al. are widely accepted and applied in China. It can be said that, up to today, their version of squares’ classification are the most detailed, influential and recognised classification of squares in China. They (1999, pp. 3-10) defined square as:

“Urban Square is built for diverse urban social life, which is constituted with various soft and hard landscape elements and enclosed by buildings, roads, landscape, landforms and so on. It is the node of urban public social life serving the pedestrian users, which should have a certain theme and scale” (Author’s translation).

They suggested the squares could be classified into five types by their functions as: “Municipal Square”, “Memorial Square”, “Traffic Square”, “Commercial Square” and “Relaxation and Recreation Square”. Also, the squares could be classified into two types by their forms as: “Sole-shape Square” which includes regular and non-regular single shape square, and “Composite-shape Square” which includes “In-ordered Composite-shape Square” and “Non-ordered Composite-shape Square”.

In practice, the type of “Recreation Square” which were normally named as “Cultural Square” in China and commercial urban squares were built, significantly, by the regeneration of the older squares or new-builds in Chinese cities with references to the Western experiences. Amongst these, the cities of Dalian, Qingdao, and Guangzhou stood out. In Dalian, during those ten years, Xinghai Square, Haizhiyun Square, Lvzhimeng Square, Haijun Square, and a further 42 urban squares were newly-built; while the People’s Square, Olympic Square, Xiwang Square and a further three squares were regenerated with the use of trees and recreational facilities e.g. fountain (Dalian Local History Records Office, 1996; 1997; 1998; 1999; 2000; 2001; 2003; 2004; 2002; 2005). In Qingdao, towards the end of 2005, there were over 50 urban squares in the city, which were mainly cultural squares (Cao, 2005). In Guangzhou, based on the existing urban squares, the city’s government prepared a document entitled “The Proposal of the Planning for Urban Squares in

Guangzhou” which set out the proposals for the future planning and building of urban squares (Xiao, 2002). This proposal raised the point that, by 2010, Guangzhou was proposing to have 75 urban squares in total, which included 25 city level urban squares and 50 district urban squares. Amongst the proposed new-build urban squares, there would be nine to meet the needs of municipal administration, seven for memorials, twenty-three for culture, fourteen for commerce, sixteen for recreation and a further six for gathering and dispersal of traffic.

With the development, The Ministry of Housing and Urban-Rural Development of the People's Republic of China (MOHURD) issued a new Code (GB50137-2011) (2011) which re-identified and reclassified the urban land use for planning and design in 2011. In this new code, it made a number of changes to the land uses classification which are relevant to urban squares. In this new Code, squares are categorised from the previous “Road and Square land use” category into the current “Green Space and Square land use” category and it has no sub-categories. Since the issue of this new code, there have been no official or non-official organisations and researchers that have presented their considerations or discussions on the new classification of squares which can reflect the changes made by the new Code. However, a number of researches were carried out on the exploration of how to build user-friendly urban squares in China.

In detail, during that fanatical building period of urban squares in China, a number of a large number of urban squares were built. But in the last ten years when they came into use, a number of usage problems were raised and queried, which could be summarised into three points. The first point is the issue of an oversized scale (Cao, 2005; Zhang, 2005; Li, 2012a); the second point is the lack of a humanised atmosphere (Zhang 2006; Wang, 2007); and the third point is the negative impact upon the traditional city form and city’s culture (Ye, 2002; Li, 2004; Lu, 2010). These have resulted in the phenomenon that, either the urban squares are abandoned by the public or are in a state of imbalanced usage by the public. In other words, the current urban squares especially “Recreation Square” have not achieved their design brief, due to their lacking in socially beneficial value. Therefore during the last few years, this issue relating to urban squares began to be hotly discussed and reflected upon. The reflections by a number of researchers show that the issue of Chinese urban square’s lacking in socially beneficial value has been realised, but the methods which could be used to solve this problem are still in development. In today’s China, city development faces serious land use conflicts, mainly between the use for economic development and the use for public welfare (Cao, 2005; Li, 2012a). In this situation, designating land as urban square in the city regulatory planning (控制性详细规划) should be appreciated, and the benefit and value of the land as an urban square should be well expressed through appropriate site planning (修建性详细规划) and design. However, this has not been adequately delivered in today’s China. This is the background and significant reason for carrying out this research.

In summary, from the discussion above, it could be seen that the development of urban squares in contemporary China experienced its flourishing period between 1995 and 2005, which was deeply influenced by Western urban squares. However, the urban squares built based on the imitations of Western squares have appeared to show either that they are not being used or have an imbalanced usage. This fact has resulted in reflections and discussions which indicate that the practitioners have realised that the imitations are built mainly on form, but without considering the culture-gap. This kind of imitations has resulted in the urban squares lacking socially beneficial value, which has had a significant negative impact on the public's usage, and therefore the Chinese society pursues a solution that could successfully resolve this issue.

3.2 The Evolving Pattern of Urban Squares and Squares' Life in the West

This chapter provides a historical review of the evolving pattern of urban squares, square life and the drivers of change in the West. In general, the development of squares in the West can be divided into six periods in terms of its features in chronological order. These are:

- Ancient Greek period (roughly 750BC-146BC), which recorded the emergence and development period of Agora which was treated as the earliest symbol of squares in the ancient West.
- Ancient Roman period (roughly 753BC-476AD), which noted the decline of Agora, and the emergence and flourishing period of Forum.
- Middle Ages period (roughly 5th Century-14th Century), which witnessed the dying out of Forum and the emergence of Medieval Square.
- Modern period (roughly 14th Century-19th Century), which included Renaissance period and Revolution period and witnessed the evolving pattern of squares through these two periods.
- The contemporary period (20th Century-present), which witnessed the emergence and development period of the Contemporary Square in the West.

1. The Ancient Greek Period - Agora

In Ancient Greece, "Agora" ("Agorá" in Ancient Greek) is the term used to describe the space which is currently called "Square". It originated due to the need for the people within the "polis" to gather together to participate in the democratic political activities. This formed the origins of

urban squares in the West.

Zucker (1959) implied that the development of the Agora could be divided into two periods, which are respectively, the appearance and development period that was in the Archaic Period (750-500BC) and the Classical period (around 500-336BC), and its flourishing development period which was in the Hippodamic and Hellenistic period (336-146BC).

During the Archaic Period and Classical period, as the early Greek towns had irregular layouts, the Agora was laid out irregularly within the town fabric with an irregular shape, and was usually as open as possible with less overall three-dimensional structure. It was normally located in the centre of the polis as the focal point of a town, if topographical conditions allowed. It was surrounded by free-layout structures with a lack of logical spatial configuration. As Zucker indicated: “space was never formed before the Hellenistic times.” (Zucker, 1959, p. 32). Meanwhile, most of their surrounding structures held religious and political functions. This revealed that in the Archaic period and especially the Classical period, the Agora’s common role was mainly to serve as a gathering place for religious activities, political activities, and legislative assemblies. A good example of the Agora which can present the characteristics, whether on function or form, of these periods is the Athenian Agora as it appeared in around 300BC (See figure 3.21).

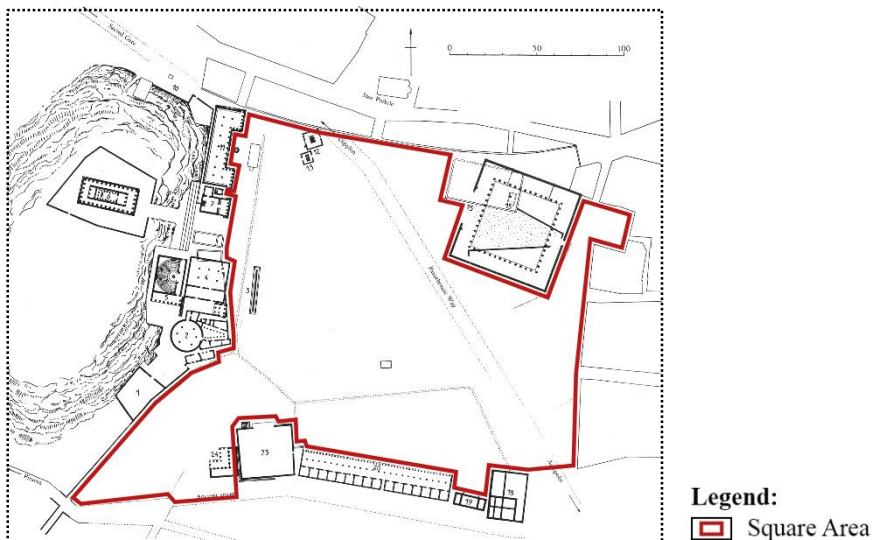


Figure 3.21 Plan of the Athenian Agora as it appeared in 300BC (Benevolo, 1980, p. 90)

Later, in line with the changes in society and town planning principles, the Agora gradually evolved from an irregular form into a regular form. The decisive step towards regulating the form of the Agora was taken since the Hippodamic and Hellenistic periods (336-146BC). Meanwhile, the function of the Agora began to change from purely supporting political gatherings, to supporting commercial activities, when the political function of the Agora was taken over by representative meetings in the sacred area of the acropolis.

During the Hellenistic period, the application of a new planning concept - Hippodamic scheme, which applied the grid as the basic organisational scheme in developing a general tendency for spatial classification and regularity, came to be applied. From this time, the Agora was redesigned/regenerated to become an enclosed space to function within the whole town beyond merely individual and topographical considerations, which was described by Zucker (1959, p. 37) as: "Closely knit into the fabric of the city". Although the location of the main Agora in the Hellenistic period kept a similar concept to that in the Classical period, the spatial configuration of the Agora came to match the geometric structure of the town as a whole due to the application of the Hippodamic scheme, and its size varied from two rectangular town blocks to sixteen city blocks. Since that time, the Agora presented a more regular and closed appearance compared to earlier times. Meanwhile, the stoa and portico came to be used in quantity to enhance the perception of enclosure.

In summary, on form, the Agora gradually evolved from an open and irregular space into an enclosed and regulated space, between the early periods of Ancient Greece and the Hellenistic period. As Zucker (1959, p. 44) said: "To the Greeks, space meant only a medium to define and set off the shaped volume-sculpture as well as the individual architectural structure." This meant that the Agora at that time was a ground surface that was only meant for loading buildings onto, rather than a space with valued three-dimensional design on form in its own right. On function, the Agora transformed from only supporting political gatherings or religious activities, to servicing the commercial activities. It also changed from being a single function space into being a diverse function space, which meant that it could hold people's mixed uses.

This meant that Agora transformed into a more and more vibrant space which presented a stronger link to urban social life. Since then, Agora gradually displaced acropolis and became the centre of a town in the citizens' daily life.

2. The Ancient Roman Period - Roman Fora

Following the period of Ancient Greece, the period of Ancient Rome was also a significant period for the development of urban squares in the West; although measured by the standards of the Greeks, Roman art was considered essentially a deterioration or a meagre copy of the Greek's (Benevolo, 1980).

From this period, a new term "Forum" was applied in ancient Rome to replace the word "Agora" to describe the square space used mainly for either judicial or other business which was dependant on its specific origin. In ancient Rome, the square originated from the gathering place for

commercial trading which was called “Forum” (Benevolo, 1980) and then evolved to represent the place that not only held trade but also held other social activities.

Similar to ancient Greece, in ancient Rome, the development of fora experienced different periods of history. These covered the Kingdom era (753-509BC), the Republican era (509-27BC) and the Imperial era (27BC-AD476). Amongst these, the Kingdom era represents the Infancy of Forum, and Republican era represents the flourishing period for Forum, and the Imperial era witnessed the recession of Forum along with its adjacent architecture (Sitte, 1945; Zucker, 1959; Benevolo, 1980).

During its flourishing period, the Roman Forum formed its own characteristic on form. Differing from ancient Greece’s Agora, the Forum presented a regulated, axial, and similar-rectangular shape, with the use of porticoes and colonnades to define its boundary and to contribute towards a perception of its enclosure. Meanwhile, the application of statues and memorial elements inside a Forum significantly enhanced its solemnity and memorability which was further contrast to an Agora. Apart for these, Forum was built or regenerated to match the whole city’s layout, and some were even built to contribute towards forming the framework of the whole city, rather than being just an isolated urban form. Pompeii’s main forum (see figure 3.22) is recognised by a number of scholars as a typical example of this style, and is almost as old as Rome’s Forum (Sitte, 1945; Zucker, 1959).

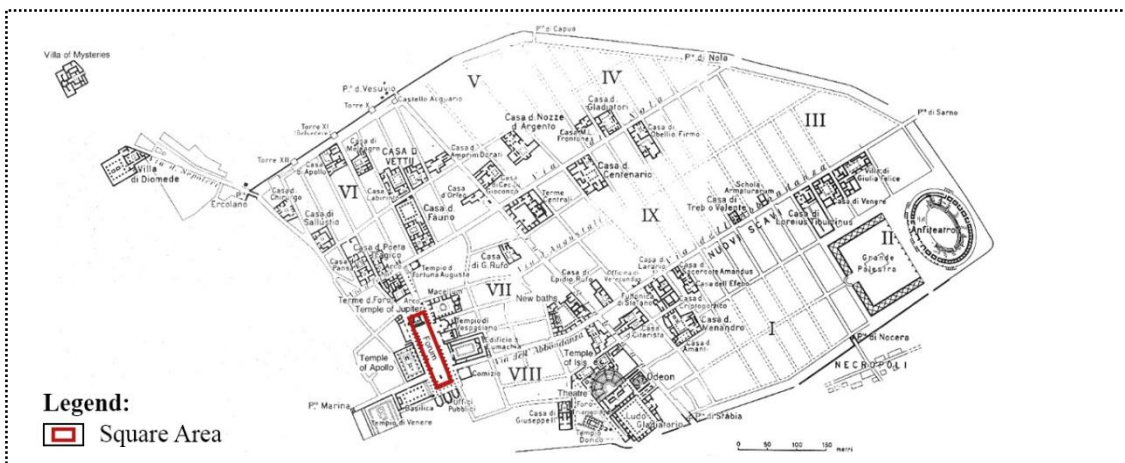


Figure 3.22 Plan of Pompeii Forum (Benevolo, 1980, p. 178)

On function, it was a comprehensive functional space for the city life of the whole society, for religion, politics, education, commerce, and recreation (Zucker, 1959; Stambaugh, 1988; Fusch, 1994). As Wang Weijie (2012) evaluated, it is no doubt that “Forum” is not only the landmark space of the whole city on the city’s layout, but also the social centre of people’s urban life. Furthermore, the Forum in Rome laid the foundation for the space’s spirit of urban squares which is inherited and still adopted in today’s Western Europe.

In summary, “Forum” was a space originated from the needs of citizen’s commercial life and was developed to support and improve the common life of the citizens in Ancient Rome. It became the foundation for the development of Medieval Square and had a significant impact on the planning and design of Renaissance Square in the West, and its influence can still be felt to date.

3. The Middle Ages Period - Medieval Square

With the decline and fall of the Roman Empire, Europe progressed towards the Middle Ages. During the Middle Ages, due to the distinctive political atmosphere and specific concepts of planning and design of the building structures and space at this time, squares also formed their particular styles on form, on space-consciousness, and on function.

During the early part of the Middle Ages, people considered themselves to be a member of a specific parish rather than treating themselves as a citizen of a town. In this situation, “Cathedral” and “Town Hall” sufficed as “Civic Centres”, therefore there was no need for the outdoor public centres such as squares (Zucker, 1959, pp. 63-98). Due to this, squares appeared mainly only as market places, or/and parvis of church square, or/and the official administrative centre during this period. This situation lasted until the 13th Century, when the “Civic Centre Square” started to flourish in the South of Europe, especially in the countries with a history of outdoor public life, such as Italy, Spain and so on. The squares in Northern Europe and Southern Europe became differentiated from each other due to their respective histories of cultural life and the concepts of external space, not only on their function but also on their appearance.

On form, as Zucker (1959, p. 97) evaluated: “Medieval squares owe their beauty to the growth through centuries, each epoch adding its specific architectural values, but never to the intent of conscious planning.” Generally speaking, at this time, the spatial layout evolved from being irregular and lacking in overall planning, to being regular, enclosed and ordered. Specifically, some design suggestions for building the squares were motivated not only by practical considerations but also by the desire for more beauty (Zucker, 1959). This implies that artistic ideas had permeated into the design of squares during this period. St Mark's Square in Venice (Piazza San Marco) (see Figure 3.23) could be treated as a typical example which presents the main characters of squares during this period.

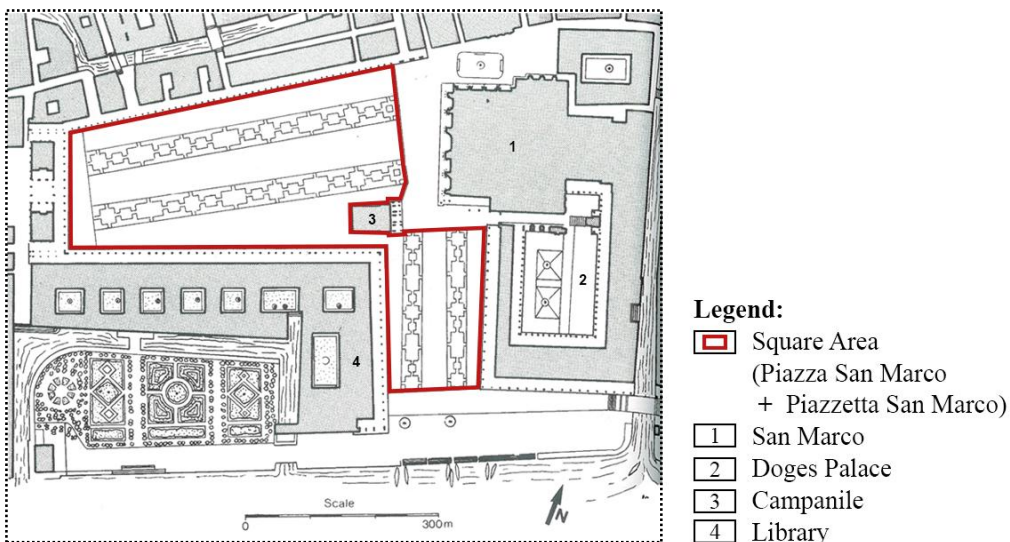


Figure 3.23 Plan of St Mark's Square (Moughtin and Mertens, 2003, p. 82)

Zucker (1959) mentioned that sometimes it is hard to decide whether a specific square is essentially a “Medieval Square” or of a “Renaissance Square”, nonetheless it is possible to distinguish clearly definable types of medieval squares in the various European countries. However, he summarised that the medieval squares in Italy could be classified into six types based on their origins. These were; “the market square as a broadening of the main thoroughfare”, “the market square as a lateral expansion of the main thoroughfare”, “the square at the town gate”, “the square as the centre of the town”, “the parvis”, and “grouped squares” (Zucker, 1959, p. 75).

During this period, specific additive architectural elements, such as fountains, small monuments, arcades, stairs, and so on, were used to shape the particular physical appearance of medieval squares, which is similar to Ancient Rome. “These additional props may unify or separate, dramatise or equalise, the visual appearance of individual and combined squares, but they very seldom create a definitely shaped space by themselves” (Zucker, 1959, p. 91). Also, the location, style, and size of adjacent buildings, such as town halls, palaces, and churches are the decisive factors to determine the space-consciousness of square.

If classifying the squares by function, then in the Middle Ages, the squares included four types which were Market Square, Church Square, Civic Square and Blended-function Square (grouped square with multiple functions) (Zucker, 1959). In Northern Europe, either Market Square or Church Square could act as the city social hub due to the lack of the type of Civic Square; but in Southern Europe, the type of Civic Square existed and worked as the social hub for the civilians. From here, it can be seen that, although some types could be found in both Northern Europe and Southern Europe, they might present different appearances and function for different matters even though they were in the same type of categories. This implies that culture and history will affected the appearance and the development of squares.

4. The Modern Period (Renaissance Period and Reformation Period) - Modern Square

After the Middle Ages, the development of Western squares stepped into a new period - the modern period. During this period, squares' development could be divided into two stages, which were respectively the Renaissance period and the Reformation period, according to the main characteristics that squares presented on form and function. The details are illustrated as follows.

In the Renaissance period, with the revolution of philosophical thought, the Renaissance theologians and artists believed that "human life could be entirely rationalised by philosophical and logical schemes, and they embodied this belief in their plans for human habitation" (Zucker, 1959, p. 100). Furthermore these rational ideas became the dominant and primary concept in city planning and space building during the Renaissance, which affected the new morphology of squares and created the formation of the distinctive Renaissance squares.

The main archetypal city plan and typical square form of this period can be summarised as: a city in a polygonal scheme with an octagonal central square at its centre and streets radiating from it. This typical style was recognised as the Baroque style by some scholars (Zucker, 1959; Benevolo, 1980), and lasted from the 14th Century to the 16th Century. The typical examples of this style are mainly found in Italy, such as Capitoline Square (Piazza del Campidoglio) which was designed by Michelangelo (see figure 3.24) and St Peter's Square (Piazza San Pietro) which was redesigned by Gian Lorenzo Bernini (see figure 3.25).

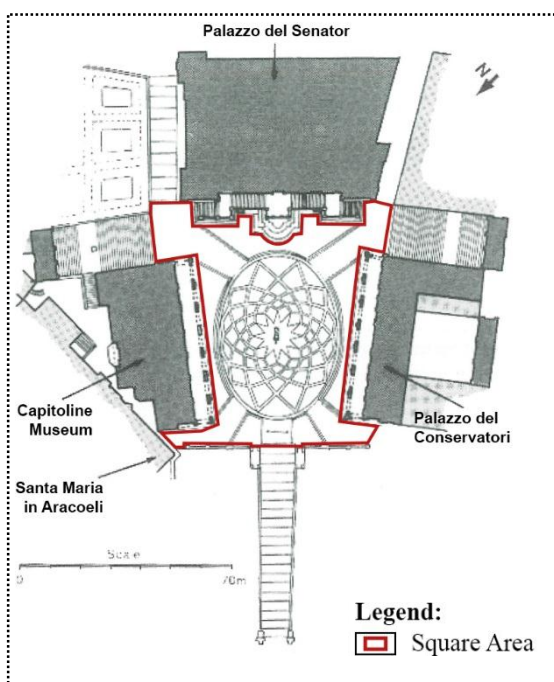


Figure 3.24 Plan of Capitoline Square
(Moughtin and Mertens, 2003, p. 110)

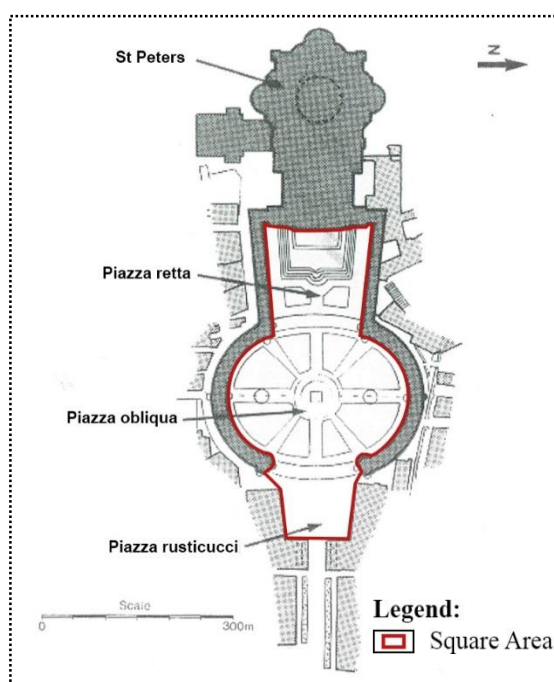


Figure 3.25 Plan of St Peter's Square
(Moughtin and Mertens, 2003, p. 90)

A number of cities in Northern and Central Europe followed this style and developed their own

on the basis of this style, such as Copenhagen in Denmark; Lyubim in Russia; Coevorden in the Netherlands; Freudenstadt in Germany and so on.

Compared to the squares from the Middle Ages, the main typical style of squares (Baroque Square) during the Renaissance period mainly presented two distinguishable characteristics, as follows:

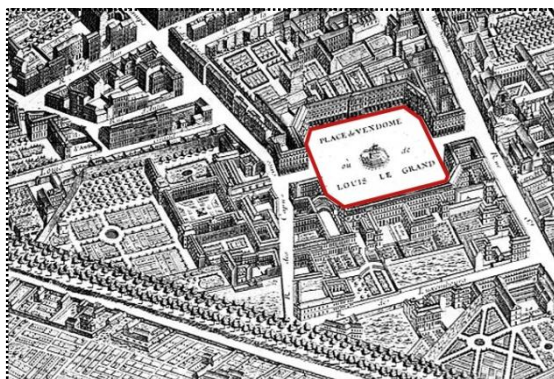
- A desire for spatial unity, to which all other architectural tendencies were subordinate. The arcades were frequently applied to increase the unity of the facades surrounding the square.
- The use of monuments, fountains, flagpoles, and so on, changed to be mainly for organising the space of a square as a whole, rather than to be individual free standing structures which were without relation to the square.

Apart from the main typical type, there was another style of square which was notable and mainly appeared in Southern Europe, particularly in Spain. Most of the Spanish towns had been built in the Middle Ages under the Moorish occupation; therefore the clusters of housing, streets and squares there all took on the characteristic appearance and typical morphology of Middle Ages towns, which were irregular and entwined into each other. As with the medieval squares in the other European countries, the squares in Spain (besides Barcelona which preserved its character of its Roman period) were relatively small and irregular. This situation continued even until the 18th Century. Additionally, In Zucker's work, he (1959, p. 133) pointed out that the irregularity of squares in Spain was three-dimensional rather than two-dimensional, and stated that "such a complex spatial impression cannot be labelled Medieval, Renaissance, or Baroque, so much as specifically 'Spanish'".

With the development of society, the West (Europe) stepped into another milestone period - The Reformation Period since the 17th Century. During this period, France came to be the cultural centre of the whole of Europe, and the French style urban planning and design naturally influenced the whole of Europe. During this period, the Baroque style and the Neoclassical style dominated the urban planning and design trend within France which shaped the foundation for the formation of the distinctive French style of square. A number of scholars have specified this distinct French style of square as Paris's style square because it originated and was mainly developed in Paris (Zucker, 1959; Benevolo, 1980).

In detail, the city was planned and regenerated to be characterised by grandeur of scale with an ordered simplicity of geometric forms in order to present the supremacy of kingship during this period (Benevolo, 1980). Squares were required to be built to match and enhance this regular, grand and symmetric city layout on form, and to contribute to the praises of the Emperor's merit

during this period (Zucker, 1959). Louis XIV of France was the person who promoted and reflected this new city planning and design trend in the regeneration of Paris. National Victories Square (Place des Victoires) (see figure 3.26) and Vendome Square (Place de Vendôme) (see figure 3.27) are typical examples of this Paris style square, which was normally characterised by a closed and regular shape, with sculptures inside, and with streets radiating out from its edge.



Legend:


 Square Area

Figure 3.26 Plan of National Victories Square (Benevolo, 1980, p. 664)



Legend:


 Square Area

Figure 3.27 Plan of Vendome Square (Benevolo, 1980, p. 664)

At the end of 18th Century, the French Revolution started and Napoleon came to lead the French Republic. The typical Square's form and function during this period were developed based on the Baroque style square to better echo the political and social changes. During this period, a regeneration proposal for Paris was set and carried out by Haussmann, which was mainly for giving spacious dignity to Paris (LeGates and Adams, 2004). Against this background, great wide avenues (up to 30 metres wide) were built and were connected with narrow lanes. With this, a number of crossing points appeared and were built as squares which were arranged to provide vistas to great buildings and monuments. Through this, a distinct Paris style urban plan (see figure 3.28) was formed, which was characterised by possessing wide avenues and regular shaped squares as the framework of an emanative city (LeGates and Adams, 2004). Since then, this Paris style city planning and design characteristic came to influence the city planning of a number of cities which were not only in Europe but also beyond, such as America and China (Cao, 2005). The Squares that built against this background were recognized as "Paris Style" squares (Zucker, 1959), which were developed based on the Baroque style and normally presented an oversized scale with monumental structures at their centre. The function of this style of squares focused on sculpturing a sequential and orderly city spatial perception rather than creating a human scale place for urban social life. Place Charles de Gaulle is a typical example of this type (see figure 3.29).

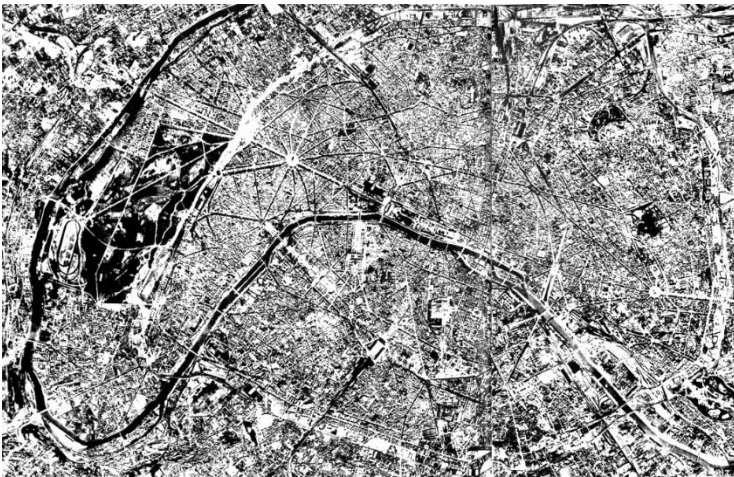


Figure 3.28 Plan of Paris (Benevolo, 1980, p. 794)

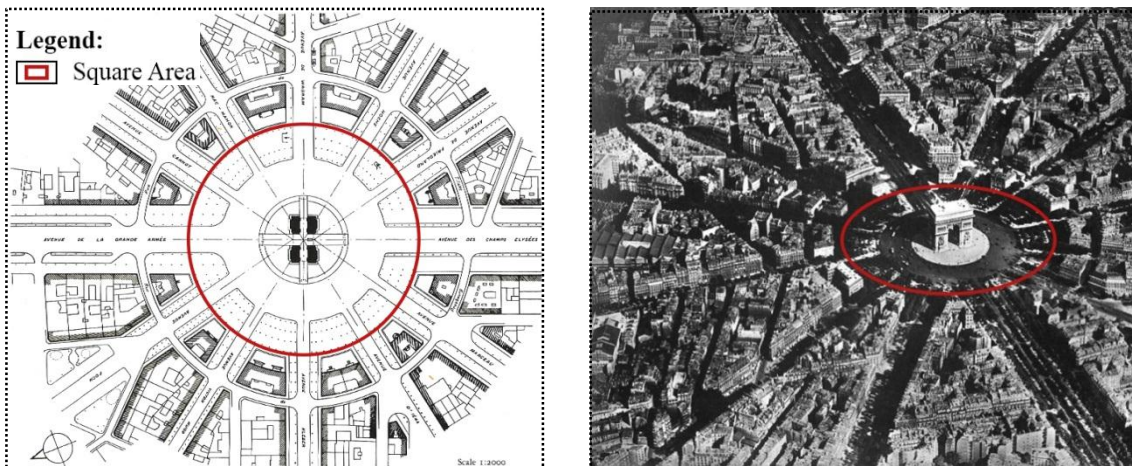


Figure 3.29 Plan and Aerial view of Place Charles de Gaulle (Benevolo, 1980, p. 808)

In conclusion, the squares during the Renaissance period in Europe, mainly appeared to have a greater desire for spatial unity, with the emphasis on the shaping of the squares' space by the use of monuments, fountains, flagpoles, and so on. Both the concept and main form of Renaissance squares influenced the following development of squares across Europe. While during the Reformation period, the squares appeared with the Baroque style characteristics which focused on the expression of the beauty on form, and were normally presented in the form of regular shape with monument(s) at their centre. Specially, in the late Reformation period, squares mainly became to serve to form a sequential and orderly spatial perception rather than creating a human scale place for urban social life.

5. The Contemporary Period - Contemporary Square

Since the 20th Century, due to the development of modern transportation, "Car" came to dominate the city and has significantly affected the city planning and design, which includes the creating and building of urban squares. With the negative impact that was caused by the development of the new systems of transportation and the promotion of high-rise buildings, a series of environmental issues appeared. In 1943, a famous works "The Athens Charter" was issued to

suggest a set of solutions for those environmental issues of a city (Le Corbusier, 1943). However it focused on the application of modern techniques on the city planning and design to a greater extent than the concerns of the social value of urban space.

In this ideological trend, the sizes of streets and squares were modified to accommodate the new transportation systems which were dominated by “Car” rather than by “Pedestrian”. This meant that traditional Western squares which were used for meeting, chatting, gathering, and other humanised social life began to disappear (Gehl, 1987). While, to the contrary, a new type of urban squares that was presented as the accessory to the high-rise building began to appear due to the rapid development of high-rise buildings, such as Rockefeller Centre Plaza built in 1939.

Subsequent to World War II, due to the concerns of the oil crisis, traffic problems, the protection of the environment, and the protection of cultures, the lifestyle and city planning methods that were a result of the appearance of “Car” were debated and reevaluated. People presented an attitude of being fed up of the “Car” city, and some scholars raised that it had become necessary to retrieve the vibrant urban open spaces that existed in the Middle Ages and Renaissance periods. Some remarkable scholars’ discussions and suggestions (Jacobs, 1961; Alexander, 1979; Trancik, 1986; Gehl, 1987) drew the public’s attentions to the social value of urban open space, particularly streets and squares. These also made Western society realise that the modern city planning style (for “Car”) was the chief culprit that resulted in the degradation of urban social life and city’s vitality. Furthermore, a number of scholars (Jacobs, 1961; Alexander, 1979; Trancik, 1986; Gehl, 1987) highlighted the significance of “Square” in retrieving the vigour of urban social life and the city, and they also offered some suggestions on how to make “Square” contribute towards enhancing the vigour of urban social life and the city.

Finally, during the 21st Century, in the Western developed countries, the research of urban squares was further explored and developed. Some official design guidance (guidelines) and research outcomes relating to urban squares have been issued, such as “Urban Design Compendium” (Yeang et al., 2000), PPS’s “What Makes a Successful Place?” (Project for Public Spaces, 2015), the works of “Public Places, Urban Spaces: The Dimensions of Urban Design” by Carmon et al. (2003), the works of “Urban Design: Street and Square” by Moughtin and Mertens (2003), the works of “Urban Open Space: Designing For User Needs ” by Francis (2003), the works of “New City Life” by Gehl et al. (2006), and the works of “Cities for People” by Gehl (2010). These all either implied or directly stated the planning and design suggestions on creating urban squares with high social value for the users.

So far, it can be seen that squares have experienced a long history of evolution in the West, and that the research into squares has been explored and carried out positively and productively in the

West. All of these provide a solid foundation for the other countries to learn from, especially those countries which imitated the West's urban development mode and therefore suffer from the similar problems as those in the West, such as China.

3.3 The Value and the Contents that China Could Learn From the West Regarding Squares

The respective discussions on squares in China and the West in Chapter 3.1 and 3.2 offer us two panoramas of the evolution of squares and squares' life that are respectively in China and the West.

From these, we can see that there are both similarities and differences between them. Additionally, the above discussions also supplies us with evidence on identifying whether there is value in China referring to the lessons and experiences from the West relating to creating urban squares. If the answer to above is positive, then what are the specific lessons and experiences that China can learn from the West with regards to the planning and design of urban squares? These are two main questions that will be clarified in this section.

With regards to the first question, the evidence from the review of literature above does support a positive answer to it with the following two reasons:

- The first reason is that the creation of urban squares in China has been significantly influenced by the Western squares' planning and design theories and practices, since modern times. This implies that there is a strong link between China and the West on the aspect of the creation of urban squares. To clarify this point in a straightforward manor for the reader, a comparison table (see table 3.1) has been generated, which summarises the development of squares in both China and the West since prehistory up to the present day.
- The second reason is that there have been fruitful positive research outcomes in the West with regards to the creation of squares, especially on the social dimension. This therefore provides a solid foundation for others to learn from.

With regards to the second question, the author decided to discover the answer in three steps. The first step was to identify the issues that affect China in creating socially beneficial urban squares. The second step was to seek out whether there are relevant fruitful research outcomes available in the West that could be learnt from. The final step was to produce the specific contents based on the research achievements of the previous two steps, to act as the definitive answer to the second question.

In the first step, the issues that affect China in creating socially beneficial urban squares could be primarily summarised in the following two points, based on the development of urban squares in China.

- A lack of the updated and informative definition and classification of urban squares for today's China, which has naturally hindered the planning and design of urban squares, more so the planning and design of socially beneficial urban squares.
- A lack of design guidance (guidelines) or any technical documents that can instruct the practitioners on successfully delivering socially beneficial urban squares in China.

In the second step, based on the literature review of the development of urban squares in the West, it is found that there are a number of relevant experiences that are available to be learnt from. These include the definition and classification of urban squares, and the concept and corresponding criteria of socially beneficial urban squares. Besides these, another Western lesson also inspires the author. This is that: "there is some danger in attempting to transfer design concepts which may be effective at one particular time, one place or in one culture, to a quite different setting" (Moughtin and Mertens, 2003, p. 88). From these, the issues that should be conducted in the following work of this research are highlighted. These are:

1. An exploration and illustration of a developed definition and classification of urban squares for today's China.
2. An exploration and illustration of the concept and criteria of socially beneficial urban squares that is generated based on the Western research achievements.
3. An exploration and illustration of the revisions to the concept and criteria of socially beneficial urban squares above, based mainly on the findings from the users' usage and their inner-most thoughts and suggestions with regards to the urban squares in China.

| China | | | | | | |
|--------------|-------------------------------------|--------------|---------------------------------------|-----------------------------|-------------------------------|--|
| Code | Development Stage of Square in Time | Chronology | Society Status | Development Stage of Square | Evolution Feature | |
| 1 | Prehistory | Before 170BC | Primitive Society | Sprout of Square | Self-evolution | |
| 2,3,4 | The Ancient Period | 170BC-476BC | Slave Society | Ancient Square | Self-evolution | |
| | | 476BC- 1840 | Feudal Society | Ancient Square | | |
| 5 | The Modern Period | 1840- 1949 | Semi-colonial and Semi-feudal society | Modern Square | Deeply influenced by the West | |
| 6 | The Cotemporary Period | 1949-present | Communist Society (New China) | Cotemporary Square | Influenced by the West | |

| The West | | | | | | |
|-----------------|-----------------------------------------------------------------|---------------------------------------------|-----------------------------|-----------------------------|-------------------|--|
| Code | Development Stage of Square in Time | Chronology | Society Status | Development Stage of Square | Evolution Feature | |
| 1 | Prehistory | Before 800BC | Primitive Society | Sprout of Square | Self-evolution | |
| 2 | The Ancient Period | 750BC- 146BC | Ancient Greek Slave Society | Agora | Self-evolution | |
| | | 753BC-476AD | Ancient Rome Slave Society | Forum | Self-evolution | |
| 3 | The Middle Age Period | 5 th - 14 th Century | Feudal Society | Medieval Square | Self-evolution | |
| 4 | The Modern Period (The Renaissance Period + Reformation Period) | 14 th - 19 th Century | Capitalism Society | Modern Square | Self-evolution | |
| 5 | | | | | Self-evolution | |
| 6 | The Cotemporary Period | 20 th Century- present | Capitalism Society | Cotemporary Square | Self-evolution | |

Table 3.1 Comparison of the development of urban squares across China and the West

Note: Here, self-evolution particularly refers to the evolution of character that is not significantly influenced by another country or area(s) that has a dramatic contrast to the local culture.

Part 2

Chapter 4 Research Outcome of Chapter 3

4.1 A New Definition and A New Classification of Urban Squares for Contemporary China

To accomplish task one that is clarified in Chapter 3.3, in this sub-chapter, the author determined to carry out the study to produce a new definition and classification of urban squares for today's China, based on the study of the relevant experiences from the West and the consideration of the situation of China.

4.1.1 The Exploration of the Definition and Classification of Urban Squares in the West

The definition of “Square” in the West

The English term “Square”, with its synonyms of “Plaza”, “Campo”, and “Piazza” in current use are all derived from the ancient Greek's term “Agora” (Zucker, 1959; Mumford, 1997; Marcus and Francis, 1990). The evolution from the term of “Agora” to “Square” spanned thousands of years which covered Ancient Greece, Ancient Rome, The Middle Ages, The Renaissance, the modern times and the contemporary era. The Greek word “Agora”, which originated from the verb “Ageirein”, originally referred to the place where the citizens could gather to participate the civic political matters, and later it came to represent the marketplace (Gove and Merriam-Webster,

2002). This term's first known use was in 1598, and gradually came to be replaced by "Forum" after 1765. "Forum" initially represented the marketplace in an Ancient Roman city, then came to represent the public meeting place for open discussion within an Ancient Roman city (Zucker, 1959; Gove and Merriam-Webster, 2002). Until The Middle Ages, the term of "Square" was used to replace the term of "Forum" and to represent the place for people's outdoor gatherings, play, and commerce (Zucker, 1959; Mumford, 1997).

The literature records of the definition of "Square" from the Middle Ages to the modern era are fairly rare, in fact, almost non-existent. However some written records relating to "Square" created in the contemporary era have been found. In this thesis, the author selected and listed those which have a certain influence.

In the contemporary West, there are a number of researchers and institutions that have offered their thoughts on the definition of the term "Square" according to their comprehending needs, either explicitly or obliquely. In general, they normally offer the definition of the "Square" by identifying its spatial attributes and social attributes. Firstly, it was identified as being in the category of publicly accessible urban open space (Lynch, 1972; Gehl, 1987; Carr et al., 1992; Gehl and Gemzoe, 1996; Francis, 2003). The earliest person who identified the term of "Square" is Paul Zucker. He (1959, p. 1) identified "Square" as "a gathering place for the people, humanising them by mutual contact, providing them with a shelter against the haphazard traffic, and freeing them from the tension of rushing through the web of streets". He (1959, pp. 1-2) especially highlighted that "Square" was "actually a psychological parking place within the civic landscape" in his book "Town and Square". Later Christopher Alexander et al. (1977, p. 311), defined "Square" as "the core which makes an activity node". Their view was acknowledged and further developed by Kevin Lynch in the "A Theory of Good City Form". Lynch (1981, p. 443) offered the definition of "Square" as "an activity focus, at the heart of some intensive urban area. Typically, it will be paved, enclosed by high-density structures, and surrounded by streets, or in contact with them. It contains features meant to attract groups of people and to facilitate meetings...". Meanwhile Rob Krier drew the identification of "Square" mainly from the perspective of morphology in his book "Urban Space". He (1979, pp. 17-18) identified that the "Square" is "produced by the grouping of houses around an open space" and "as intersection of two roads, fixed point of orientation, meeting place". While John Brinckerhoff Jackson raised that a square was an urban form that draws people together for passive enjoyment, in his influential book "Vernacular space" (1985, pp. 58-61).

As a development of the previous scholars' ideas, Marcus and Francis further defined "Square" in more detail. They (1990, p. 10) defined the "Square (plaza)" as "a mostly hard surfaced, outdoor public space from which cars are excluded. Its main function is as a surface for strolling,

sitting, eating, and watching the world go by". In 2003, Cliff Moughtin and Miguel Mertens, British urban theorists, were the first people who defined the "Square" formally in Europe. They (2003, p. 87) stated that: "A square or plaza is both an area framed by buildings and an area designed to exhibit its buildings to the greatest advantage." Jan Gehl et al. (2006, pp. 118-151), implied their reorganisation of "Square" as: "A place where people meet whether they want to entertain or to be entertained, to demonstrate or simply to sit quietly and enjoy the surroundings;... a meeting places and breathing space for surrounding residences;... a place where people can pause for reflection or just be themselves;... the setting for parades, processions and demonstrations, and this is where people assemble to cheer over national championships, mourn royal deaths and celebrate other national events;...ordinary spaces visited every day by many people doing daily errands, and they serve as passages, waiting rooms, and traffic hubs, dominated by people in transit". Carmona et al. (2010, p. 179), an active European urban design scholar summarised and defined "Square" as, "A square usually refers to an area framed by buildings which is designed for civic prestige, 'grandeur' or simply to exhibit a particular building, and those designed as 'people places'- that is, as settings for informal public life". In their "Public Places - Urban Spaces: The Dimensions of Urban Design", they (2010, pp. 178-179) especially clearly distinguished the square space from the street space as "streets are dynamic spaces, while squares are static spaces;...; if the ratio of width to length is about 2:3, the space can be considered as a square".

Apart from these independent scholars, some organisations have also offered the definitions of "Square" in the contemporary era. The author only selected and listed the ones which have national or worldwide influences in this thesis. In the UK, English Partnerships and The Housing Cooperation declared the definition of "Square" in their publication named "Urban Design Compendium". They split the identification of "square" into two parts, being the definition of "square" and the definition of "plaza". They offered their distinguishing definitions as following. "Square" is "a formal public space, no larger than a block and located at focal points of civic importance fronted by key buildings, usually hard paved and providing passive recreation"; and "plaza" is "a public space associated with the extended forecourt of commercial (office/retail) buildings, with formal landscaping" (Yeang et al., 2000, p. 55). While in Australia, Healthy Spaces and Places, an unique collaboration on space and people's health, offered their definition of "Square" in more detail as: "Urban squares (also called civic spaces, town squares, piazzas or plazas, amongst other names) are spaces that form focal points in the public space network, providing a forum for exchange, both social and economic, and a focus for civic pride and community expression. Their significance and intensity of meaning is typically expressed through 'harder' intensively used landscaping. They tend to be formal and urban in nature in contrast to parks and open spaces, which are typically soft landscaped, larger and less intensively used. Urban squares are typically held in public ownership and designed to be easily accessible by all"

(Healthy Spaces and Places, 2009). While the independent active urban research organisation - Project for Public Space (PPS) which was founded in 1975 to expand on the work of William (Holly) Whyte, defined “Squares” are “time-honoured places around which whole neighbourhoods and cities in every culture have developed, ...major destinations where civic life flourishes” (Project for Public Spaces, 2015).

In brief, in the West, the square is defined as an urban space shaped by buildings and streets within the city with the function of holding the public’s activities to maximally sustain and support their urban social life. From the above, it can be clearly seen that the existing definitions in the West all place particular emphasis on the description of the social attributes of the square space, and describe the specific attributes that the square space possesses to make it distinguishable from the other urban forms such as street, park, and so on. This finding offers the author an inspiration on the development of the definition of urban squares for China.

The classification of urban squares in the West

In the Western research with regards to squares, it is found that there have been a number of attempts to explore the typologies of squares in the West. In general, the previous scholars categorised the squares by two methods which are either by form or by function (Sitte, 1945; Zucker, 1959; Moughtin and Mertens, 2003; Carmona et al., 2010). The attempts of classifying squares by form were initially carried out by Camillo Sitte and Paul Zucker, and further developed and summarised by Cliff Moughtin and Miguel Mertens (Sitte, 1945; Zucker, 1959; Moughtin and Mertens, 2003). The legacy of Camillo Sitte’s and Paul Zucker’s research is that it contains the most influential theories of square’s typology by form, which has not only influence the last century but continue to do so today.

In Camillo Sitte’s “The Art of Building Cities: City Building According to Its Artistic Fundamentals” (1945), public squares are mainly divided into two distinguishable types by form, which are “Deep” square and “Wide” square according to their width-to-length ratios. However in reality, some ancient squares were irregular on form, and therefore are difficult to be classified into the categories of either “Deep” or “Wide” square. In this situation, Sitte (1945, p. 31) identified this kind of squares as “Irregular Square”. Apart from identifying the ratio of the width and length of a square, Camillo Sitte also clarified the harmonious relative proportion between a square and its surrounding buildings in his works. This was summarised by Collins and Collins (2006, p. 28) as: “The minimum dimension of a square ought to be equal to the height of the principle building in it, and that its maximum dimension ought not to exceed twice that height unless the form, the purpose, and the design of the building will support greater dimension”.

As a development of the typology of squares by form, Zucker (1959, p. 8) suggested that the squares could be classified into five types as; “The Closed Square: space self-contained”, “The Dominated Square: space directed”, “The Nuclear Square: space formed around a centre”, “Grouped Square: space units combined”, and finally “The amorphous square: space unlimited”. However, he (1959) also identified that, very often an individual square bears the characteristics of two of these types rather than only being one pure type; and even within one and the same category, a variety of expressions of functions and sociological meanings may exist. Zucker was the first person who raised a systematic, specific and practical typology of squares by form, which is the most influential classification of squares to date. This classification was interpreted and summarised in a more visual way by Carmona et al. (2010) in their “Public Places - Urban Spaces: The Dimensions of Urban Design”. The below diagram (see figure 4.1) illustrates their interpretation.

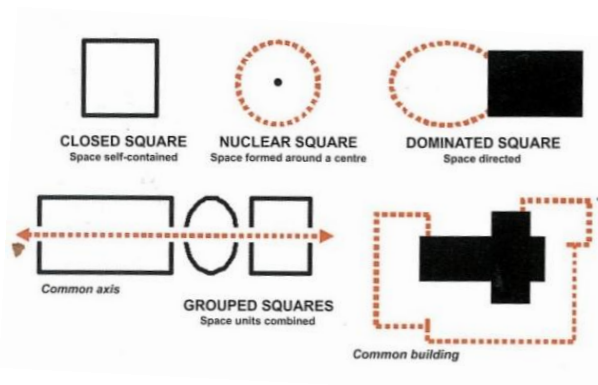


Figure 4.1 Illustration of Zucker's typology by Carmona et al. (2010, p. 181)

Meanwhile, in the works of “Streets and Squares”, Cliff Moughtin and Miguel Mertens also developed the typology of squares by form based on the work of Sitte and Zucker. They (2003, pp. 99-123) classified squares into four types by form; “The Enclosed Square”, “The Dominated Square”, “The Linked Square”, and “Other Spaces”.

In detail, They (2003, pp. 99-123) summarised Zucker's “Closed” square and Sitte's “Deep” and “Wide” squares together as the variants of his category of “Enclosed Square”. Meanwhile they also stated two elements which would have a dominating effect on the degree of enclosure of a square, which are respectively the treatment of its corner, and the surrounding buildings' nature and its relative ratio to the square.

With regards to the type of the “Dominated Square”, Moughtin and Mertens (2003, p. 105) quoted Zucker's definition: “...is characterised by one individual structure or a group of buildings toward which the open space is directed and to which all other surrounding structures are related”. They agreed with Zucker's opinion on the primary difference between this type and the type of “Closed”

square as follows: "... the dominant square produces a dynamic directive of motion, whereas the closed square by careful proportioning creates a static equilibrium" (Zucker, 1959, p. 11; Moughtin and Mertens, 2003, pp. 105-111).

The type of "Linked Square" named by Moughtin and Mertens is a variant of "groups of public squares" mentioned by Sitte and "Grouped Square" discussed by Zucker (Sitte, 1945; Zucker, 1959; Moughtin and Mertens, 2003). Although the terms are different, the core meanings are similar. Sitte's term "picturesque perception", Gordon Cullen's "serial vision" and Zucker's "successive room" are all terms to describe the spatial perception of this type of square (Sitte, 1945; Zucker, 1959; Cullen, 1961). Based on these, Moughtin and Mertens (2003, p. 112) explained the forming reason and spatial feature of this type of square by their words as: "A public square may be of complex shape so that it consists of two or more overlapping or interpenetrating spaces; quite clearly defined spaces may open onto each other; a series of spaces may be physically connected by streets or alleyways; one or two major building may be surrounded by a series of spaces which use the walls of the buildings for definition; great civic squares have been designed to unfold along a predetermined axis; and, finally, spaces may be related by an external reference point, a dominant element such as a tower."

Lastly, Moughtin and Mertens (2003) categorised the types of "The Amorphous Square" and "The Nuclear Square" raised by Zucker (1959) into "Other Spaces" in his classification, and offered limited discussion because they doubted whether some squares that were categorised into the above two types by Zucker could be treated as "Square" due to their functions and space attributes.

A number of scholars have similar concerns to the thought of Moughtin and Mertens above, and so they prefer to classify the squares by their main function rather than by their form, because they believe that this perspective of classification is clearer and more practical. Here, Clare Cooper Marcus and Carolyn Francis (1990) and Jan Gehl et al. (2006) are representatives of the scholars who hold this view.

In actuality, Alberti was the person who first alluded to the classification of the squares by function. He (1986, p. 156) suggested that different squares could have the following different main functions: "some for the exposing of merchandise for sale in time of peace; and others for the exercises proper for youth; and others for laying up stores in time of war..." in his "The Ten Books on Architecture". Afterwards, Rob Krier concisely presented his view on the typology of urban squares by function. He implicitly outlined that urban squares could be classified into Market Space, Parade Ground, Ceremonial Square and Church/Townhall Square (1979). Later, Marcus and Francis developed this typology and offered a precise classification of squares by function in their renowned works "People Places: Design Guidelines for Urban Open Space".

They (1998, pp. 15-18) suggested that the squares can be categorised into five categories by their main function, which are: “The Street Plaza”, “The Corporate Foyer”, “The Urban Oasis”, “The Transit Foyer”, and “The Grand Public Place”. Moughtin and Mertens had a similar thoughts and implies that squares could be classified into eight types. Although they didn’t offer the exact name of each type, they (2003, p. 88) identified the main function of each types as: “the setting for a civic building”, “the principle meeting places”, “places for great ceremonial occasions”, “spaces around entertainment buildings”, “spaces for shopping, shopping streets, arcades and markets”, “spaces around which offices are grouped”, “spaces of a semi-public nature around which residential accommodation is arranged”, and finally, “the spaces associated with urban traffic junctions”.

In 2010, Jan Gehl published the latest view of this issue based on his own research and the research of previous scholars in his book “Cities for People”. Although in this book he didn’t state his classification directly, his view is obvious to the reader. In summary, he classified the squares into four types by function, which are “City Centre Square”, “Recreation Square”, “Ceremonial Square” and “Traffic Square”(Gehl, 2010).

From the above, it can be seen that the research of the typology of squares has been attempted on a number of occasion since the modern era, and has been developed further in the contemporary era. Although the viewpoints of the classification of squares are diverse, all of them provide a valuable heritage in the research of the typology of squares and lay a solid foundation for the future development of the typology. In the author’s mind, these diverse classifications of squares could be interpreted and summarised as four categories, which are square for city image, square for recreation, square for traffic, and square for portal of buildings. In today’s globalisation process, these outcomes can be references and applied by many countries, especially those countries which are significantly influenced by the Western urban square’s theory and practice, such as China.

4.1.2 A New Definition and classification of Urban Squares for Contemporary China

A new definition of “Urban Square” for Contemporary China

Based on the literature review of the existing definitions of urban squares in both China (Chapter 3.1) and the West (Chapter 4.1.2), and the development situation of urban squares in China, the space of “Urban Square” is defined as:



An urban public open space, mostly hard surfaced, which is mainly restricted to pedestrians and is inaccessible to vehicles except under special circumstances, with the main function of providing a place for the public’s urban public life, for example, strolling, sitting, staying, watching, chatting,

playing and other social interactions. Unlike a park, although there may be greenery in evidence, the predominant surfaces are hard surfacing, while unlike a street, although also with predominantly hard-standing, its length-to-width ratio should not exceed 3:1.

This new definition of Chinese urban squares lays a solid foundation for generating the final conceptual framework for delivering socially beneficial urban squares in Guangzhou.

A new classification of urban squares for Contemporary China

As specified in Chapter 3, the types of Chinese urban squares have undergone a significant evolution, since it first appeared in Chinese towns/cities thousands years ago. However, the development of the classification of urban squares in China has stand still since the end of last century, which requires an update of classification to match the development of urban squares in today’s China. From the analysis of the existing classification of urban squares in both China and the West, and the development situation of urban squares currently in China, it is found that classifying the urban squares by their main functions and public attributes is the most applicable way for today’s China. Therefore, the author produces a new classification of urban squares in China, which include five types, as follows:

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. Landmark Square</p> <p>The square that mainly serves as the “business card” of a city and contributes towards highlighting and identifying the city. It normally holds and supports the city’s grand and important events and has high social cognition. It serves the whole of the public which includes both, local citizens, and tourists alike, and is normally surrounded by the landmark buildings of a city. Tiananmen Square (see figure 4.2) is an example of this type.</p> |  <p>Figure 4.2 Photograph of Tiananmen Square</p> |
| <p>2. Recreation Square</p> <p>The square (see figure 4.3) that mainly serves as the recreation space to sustain and support the public’s urban outdoor social life, which is expected not only to contribute towards a city’s social life, but also to benefit towards improving the environmental quality of a city. It normally has three levels, which are city level, district level land sub-district level, according to its service radius and degree of social cognition to the public. Generally, this type mainly aims to serve the citizen</p> |  <p>Figure 4.3 Photograph of Guangming Cultural Square</p> |

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>of a city. Guangming Cultural Square (see figure 4.3) is an example of this type.</p> | |
| <p>3. Civic Square</p> <p>The Square that serves as the civic service space, which is associated with the municipal service buildings and facilities, e.g. council’s service centre, city library, opera centre and city roads. It is mainly used for highlighting the entrance of the municipal buildings and facilities, and for coordinating the dispersal and gathering of traffic streams. It is open to the public, but normally has a low cognitive perception by the public in itself, because it is usually treated as the accessory space for the municipal buildings and facilities.</p> <p>This type includes two sub-types which are “Civic Building Square” and “Traffic Square”. Generally, this type mainly aims to serve the citizens of a city. The square (see figure 4.4) in front of Harbin city council is an example of this type.</p> |  <p>Figure 4.4 Photograph of Square in front of Harbin City Council</p> |
| <p>4. Commercial Square</p> <p>The square that serves as a place to support the commercial activities, or in the buildings surrounded it. It is normally associated with one, or a group of, commercial buildings, but sometimes exists independently. This type serves the whole of the public, including both citizens and tourists alike. Shangxiajiu Commercial Street Square (see figure 4.5) is an example of this type.</p> |  <p>Figure 4.5 Photograph of Shangxiajiu Commercial Street Square</p> |
| <p>5. Community Square</p> <p>The square that mainly serves a particular, defined users’ group for supporting their outdoor activities, which therefore, is only semi-public. This feature makes it obviously distinguishable from the other four types.</p> <p>It includes three sub-types, which are (Educational) Campus Square, (Private) Residential Quarter Square, and</p> |  <p>Figure 4.6 Photograph of Northeast University Campus Square</p> |

| | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <p>Industrial/Office Square which are respectively within the semi-closed campuses, residential quarters and official zones.</p> <p>Strictly speaking, this type is not within the category of Urban Public Square due to its semi-public attribute. However, due to its vast prominence in China, it is necessary to identify and distinguish it here. The North-east University Campus Square (see figure 4.6) is an example of this type.</p> | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

To clarify the position of this new classification of urban squares, a list (see table 4.1), that summarises the existing typologies, which are classified by the square’s main function, by different scholars and organisations across the West and China, is produced in chronological order.

This new classification of urban squares for today’s China can be used as a basis for better understanding the variety of square space in today’s China. For this research, it lays a solid foundation for generating the final conceptual framework for delivering socially beneficial urban squares in Guangzhou.

| In the West | | | | In China | | | |
|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--|--|
| Leon Battista Alberti (1986, p. 81) | Jere Stuart French (1978, p. 187) | Rob Krier (1979, p.19) | Cliff Moughtin and Mignuel Mertens (2003, p. 88) | Code for classification of urban land use and planning standards of development land GB50137-2011 (2011, p. 9) | Dawei Li, 2015 | | |
| “...some for the exposing of merchandises to sale in time of peace...” | Market Square, Mall | Market Space | “...spaces for shopping, shopping street, arcades and markets...” | | Commercial Square | | |
| Squares for “laying up stores in time of war, of timber, forage, and the like provisions necessary for the sustaining of a siege.” | Traffic Island, Parvis | Church/Townhall Square | “...the setting for a civic building;...; the spaces associated with urban traffic junction.” | “交通广场用地” Traffic Square (author’s translation) | Civic Square: 1. Civic Building Square 2. Traffic Square | | |
| Squares for “the exercises proper for youth.” | Parade Ground | Parade Ground, Ceremonial Square | “...places for great ceremonial occasions...” | | Landmark Square | | |
| | Civic Centre, Green | | “...the principle meeting places;...spaces for entertainment | “游憩集会广场用地” Recreation and Rally Square (author’s translation) | Recreation Square | | |
| | Residential Square, Collegiate Square | | “...; spaces around which offices are grouped; space of a semi-public nature around which residential accommodation is arranged...” | | Community Square: 1. Campus Square 2. Residential Quarter Square 3. Industrial/Office Square | | |

Table 4.1 List of the classifications of urban squares by function between the West and China

4.2 A Definition and Corresponding Criteria of Socially Beneficial Urban Square in the West

Up until now, the social dimension of outdoor urban space has been explored by a number of scholars and organisations since the last century in the West. A number of significant research outcomes that are relevant to the social dimension of urban open space, which includes urban squares, have been accumulated, such as: Camillo Sitte's discussion of the relationship between urban squares and the city, Aldo Rossi's theory of the urban artefacts and collective memory, Kevin Lynch's theory of the cognitive image of a city, Christian Norberg-Schulz's understanding of the sense of place, Jan Gehl's typology of outdoor activities, William. H. Whyte's identification of social life in small urban spaces, Clare Cooper Marcus and Carolyn Francis's theory of people's place, Tridib Banerjee's discussion on the privatisation of public life and spaces, Kevin Thwaites' theory of socially restorative urbanism and so on (Sitte, 1945; Lynch, 1960; Norberg-Schulz, 1980; Rossi, 1982; Gehl, 1987; Marcus and Francis, 1990; Banerjee, 2001; Whyte, 2001; Thwaites et al., 2013). However the existing literature presents two issues on the research of the social dimension of urban squares. The first is that there is only a limited amount of research that directly focuses on the social dimension of squares; and the second is that most of this limited research was conducted some time ago which implies a need for updating.

Therefore, to successfully accomplish task two clarified in Chapter 3.3, in this subchapter, the author's main task is to generate a solid and up-to-date research outcome that is relevant to the social dimension of urban squares. This research outcome will reflect in two matters. The first is to produce a concept of socially beneficial urban square, and the second is to generate a corresponding criteria list.

4.2.1 The Concept of Socially Beneficial Urban Square and Its Criteria

“Public spaces work best when they establish a direct relationship between the space and the people who live and work around it.”

(Force and Rogers, 1999, p. 57)

“Public spaces shape our everyday lives through the possibilities, limitations and experiences they offer. Well-designed public spaces support cultural integration, promote health, strengthen local commerce and counteract crime.”

(Ministry of Foreign Affairs of Denmark, 2011, p. 1)

To develop the concept of socially beneficial urban squares, the relevant researches are initially briefly outlined as follows.

As Carmona et al. (2010, p. 133) said, “it is difficult to conceive of “space” as being without social content and, equally, of society without a spatial component.” In terms of the relationship between the social dimension and spatial organisation of a space, a number of scholars have stated that the urban outdoor space has, and should have, the capacity to benefit towards people’s health and wellbeing, which was particular discussed in the field of environmental psychology (Sommer, 1969; Habermas, 1989; Kaplan and Kaplan, 1989; Lang, 1994). According to Ray Oldenburg’s view (1989, p. 39), such urban outdoor space can be called “third places”, as opposed to the first place of home, or the second place of work or school, which supports their routine and occasional life. The first person who clearly identified the relationship between people and outdoor open space was Jan Gehl, who precisely stated the relationship between outdoor activities and the quality of outdoor space (Gehl, 1971). Later his research findings were developed, and the concept of “Urban Public Life” was raised, and becomes a popular term in today’s urban design field (Alexander et al., 1977; Marcus and Francis, 1990; Bosselmann, 1998; Whyte, 2001; Gehl et al., 2006; Schaick and Spek, 2008; Carmona et al., 2010; Gehl, 2010; Thwaites et al., 2013; Project for Public Spaces, 2015). The concept of public life actually stems from the idea of a “public sphere” (Habermas, 1989) and the notion of a “civil society, where the affairs of the public are discussed and debated in public places” (Banerjee, 2001, p. 14). Today, this term is understood in a wider sense as being “everything that takes place between buildings, . . . , it is the complex and versatile life that unfolds in public space” (Gehl and Svarre, 2013, p. 2). As PPS (2015) defined, public life offers relief from daily stress and provides opportunities for relaxation, entertainment and social contact. In this context, the “Socially Beneficial Environment” of this research is defined as the environment which has the capability to benefit (sustain and support) urban public life. Gehl (1987) mentioned that public life (activities) could be divided into three categories which are “necessary activities”, “optional activities” and “social activities”. In this research, a socially beneficial environment is focused on delivering the space that can positively sustain and encourage social activities.

However as Gehl (1987) discussed, the other two categories of activities, especially optional activities, could effectively stimulate the social activities and affect the quality of them. Therefore, the concept of “Socially Beneficial Environment” in this research also covers the consideration of encouraging the positive optional activities and certain necessary activities. This implies that, as a socially beneficial environment, it should have the capability to support diverse public life (activities).

At this point, the concept of “affordance” of the built environment raised by Lang (1987) needs to be mentioned. Meanwhile its variants, the theory of “potential and effective” environment raised by Gans (1968, p. 11), “environmental possibilism” raised by Porteuou (1977), and “environmental probabilism” raised by Bell et al. (1990) also need to be highlighted. These are

all researches that have explored how a built environment affects the people's actions within it.

However, as Carmona et al. (2010, p. 133) stated, the interaction between a built environment and the people within it will and should be a two way process, and therefore the built environment is thus “both the medium for, and the outcome of, social process and change”. They has a number of allies on this view, such as Hillier and Hanson (1984), Alexander (2002), Day (2004), Thwaites et al. (2013), and so on. This view informs us that people who use the environment also have a significant impact on that built environment, and that the built environment shaped by them could, in turn, have a reaction on people's usage decision and usage behaviours. Therefore, in the concept of socially beneficial environment, the environmental factor and people's factor both needed to be considered.

With regards to the issue of people, the principle of “equality” of users needs to be mentioned here because it is a focus of the research of the built environment, especially in the research of social sustainability of the built environment. Here, a number of scholars (Chambers and Conway, 1992; Department for International Development, 1999; Thompson, 2002; Mitchell, 2003; Dalal-Clayton and Sadler, 2005; Jaeckel and van Geldermalsen, 2006; Commission for Architecture and the Built Environment, 2008) have announced that a public environment should have the capability to support the diverse users' different needs to meet the requirement of “equality”. Maslow's model of the five hierarchies of people's needs (physiological needs, safety and security needs, affiliation needs, esteem needs, and self-actualisation) successfully categorised and explained these diverse needs (Maslow, 1970). While the application of Maslow's model within the urban design field by Carmona et al. inform us that, as a socially beneficial environment, possessing the capability to meet the human's five basic needs is crucial and essential (Carmona et al., 2010).

To date, a number of scholars and organisations have explored and stated the factors of an environment that will affect it in its ability to meet the people's five needs stated above (Kaplan and Kaplan, 1989; Marcus and Francis, 1990; Force and Rogers, 1999; Carmona et al., 2010; Gehl, 2010; Project for Public Spaces, 2015). Based on the analysis of their discussions, these factors discussed by the other scholars can be grouped into five broadly related, yet distinguishable themes, as follows:

- 1) Environmental factors (climate, topography)
- 2) Socio-cultural factors of community
- 3) Functional and physical factors
- 4) Political and economic factors
- 5) Recreational and health needs factors

Besides meeting the people's five basic needs, a number of scholars have also raised the issue that the built environment should meet the upper hierarchy need of people (Marcus and Francis, 1990; Gehl et al., 2006; Carmona et al., 2010; Thwaites et al., 2013). In the socio-spatial context, sustainability, especially social sustainability, is one of these higher collective needs (Carmona et al., 2010). A number of scholars have offered the definitions or explanations on the concept of social sustainability (Yiftachel and Hedgcock, 1993; Polèse and Stren, 2000; Biart, 2002). Based on the analysis of these, it is found that a socially sustainable built environment is a backdrop for lasting meaningful social relations that can meet the social needs of both present and future generations (Yiftachel and Hedgcock, 1993). Across all definitions and explanations, two core points on the concept of social sustainability prove constant. These are: firstly, a socially sustainable environment should have capability to respect and support the people's diversity and their diverse cultures and life; and secondly, that environment should have the capability to maintain this respect and support across a span of time. This finding offers the author an inspiration on producing the concept of a socially beneficial environment. It is that the issue of time is also a crucial issue that should be considered in the design of a socially beneficial built environment. With regards to the interpretation of the time span issue in the socio-spatial context, the author believes that the issues of the robustness and the management of a built environment are the most relevant, because the people's usages culture and desires for it in society are dynamic and changeable across time. As Yiftachel and Hedgcock (1993) suggested, we need to provide an evolving link between urban structures and social actions. This link can be embodied and achieved in its feature of robustness and status of management, in the author's mind.

Summarising the above discussions, the concept of a socially beneficial environment mainly contains the consideration of three issues. These are: supporting diverse public activities (excludes anti-social activities), making a diverse range of users equally happy, and possessing a certain robustness for the dynamic society. Based on this, the concept of socially beneficial urban square derived from the Western context is deduced to be as follows:

The square space that has the capability to sustain and support diverse urban public activities, the capability to offer equality and happiness to all of the potential users, and the capability to possess a certain robustness for the usage change of the dynamic society.

4.2.2 The Criteria of Socially Beneficial Urban Square in the West

With the definition of socially beneficial urban square, it is time to move forward to explore the factors that will affect the delivery of socially beneficial urban square in the Western context. The result from this sub-chapter lays the foundation to formulate the final criteria list for delivering socially beneficial urban square in the Chinese context - Guangzhou.

A number of scholars and organisations have explored and researched the factors that will affect the people's usage of an environment in the West. Their work offered the author inspirations on, and a foundation for, clarifying the factors that will affect the realisation of socially beneficial urban squares in the Western context. Through the analysis of these relevant research outcomes, it is found that the factors that can potentially affect the people's usage perceptions and decisions can be organised into three categories which echo the three key issues of the concept of socially beneficial urban squares that are identified in Chapter 4.2.1. These are the categories of; supporting diverse public activities, supporting diverse users with happiness and equality, and sustainably supporting those two over time. Furthermore, based on the study of literature and the understanding of these three categories, each category is identified as having their specific themes as follows:

- **Supporting diverse public activities**
 1. Affordance for diverse public activities
- **Supporting diverse users**
 2. Affordance for diverse users
 - 2.1 Location
 - 2.2 Accessibility
 - 2.3 Permeability
 - 2.4 Safety and security
 - 2.5 Scale
 - 2.6 Legibility
 - 2.7 Amenity sense and artistic quality (internal physical attractions)
 - 2.8 Equity
 - 2.9 Territoriality
- **Supporting the above two categories over time**
 3. Affordance over time
 - 3.1 Robustness
 - 3.2 Management

The elaboration of these themes and their corresponding factors are specified as follows.

1. Affordance for diverse public activities

“A characteristic common to all optional, recreational, and social activities is that they take place only when the external conditions for stopping and moving about are good, when a maximum

number of advantages and a minimum of disadvantages are offered physically, psychologically, and socially, and when it is in every respect pleasant to be in the environment.”

(Gehl, 2011, p. 171)

The term “affordance” was originally coined by the perceptual psychologist Gibson (2015, p. 130). To him, it refers to the actionable properties within relationships between the world and an actor. Later, this understanding was developed and applied to the environment by Lang (1987), identified as the opportunities or/and possibilities for action that an environment affords. This implies two determinisms which are the physical determinism and the virtual determinism. In terms of physical determinism, Porteous (1977) interpreted it as “environmental possibilism” - the certain availability and limitations raised by the environment which will affect people’s behaviours. In terms of virtual determinism, Bell et al. (1990) interpreted it as “environmental probabilism” - the probabilistic relationship between physical environments and behaviours. Here, in a simple explanation, these two concepts could be understood as “potential environment” and “effective environment” raised by Gans (1968). In Gans’ view, “potential environment” refers to the environment as a potential setting which can provide a number of opportunities to stimulate people’s potential activities; and “effective environment” refers to the environment where people actually partake in activities. The expression of Carmona et al. (2010, p. 134), “designers create potential environments, people create effective environments” are summarised based on Anderson’s (1986) work. This echoes Gehl’s (1987) theory of the relationship between an environment and the people’s behaviours (activities) within it which was stated in his famous works “Life Between Buildings: Using Public Space”. In Gehl’s theory, he divided people’s behaviours (activities) into three categories, which are respectively “necessary activities”, “optional activities”, and “social activities”; and especially pointed out that the quality of environment has a limited influence on people’s necessary activities but has a significant impact on the optional activities and social activities. If this theory can be commonly agreed upon, it can be deduced that the affordance of an environment for the people’s behaviours could be translated as the affordance of an environment for the people’s optional behaviours (activities) and social behaviours (activities).

In Gehl’s (2011, pp. 9-12) works, he defined the optional activities as “those pursuits that are participated in if there is a wish to do so and if time and place make it possible...”, and social activities as “all activities that depend on the presence of others in public spaces”. This implies that the possibility of occurrence of the optional behaviours depends on the affordance of a square, and the possibility of occurrence of social behaviours depends on the affordance of optional behaviours in a square because it provides the essential element for social behaviours - “people”.

In terms of social behaviours, they can be summarised into two categories, which are respectively,

“active behaviours” and “passive behaviours” (Gehl, 1987). The active behaviours include all direct and active interactions between people, such as greetings, conversations, communal activities and so on; while the passive behaviours include all of the indirect contacts between people, such as simply watching and listening to others, which were identified as the most widespread social behaviours in the public open space by Gehl (1987).

Based on the study of Gehl’s (1987), Whyte’s (1980), and Marcus and Francis’s (1990) research outcomes, the specific optional behaviours and social behaviours that normally occur in the Western squares can be summarised as follows:

- Optional behaviours in squares: getting a breath of fresh air, standing around, sitting and sunbathing, sitting and eating, sitting and reading, walking, etc.
- Social behaviours in squares:
 1. Active behaviours in squares: standing and talking, sitting and talking, playing, community activities, etc.
 2. Passive Activities: standing and watching, standing and listening, sitting and watching, sitting and listening, etc.

Gehl (1987) has even implied that the optional behaviours and passive behaviours are the basis for the occurrence of active behaviours, because the small daily activities can breed larger and more complex group (community) activities.

From the discussions above, it can be seen that the hierarchy and link between the different categories of activities exist. Furthermore, it is that the optional behaviours affect the affordance of an environment for the occurrence of social behaviours; and the passive behaviours in the category of social behaviours affect the affordance of an environment for the occurrence of active behaviours. To achieve the aim of encouraging and supporting the diverse behaviours, realising this hierarchy and link is essential. Here, a two-step thought process is suggested. The first step is to encourage and support the optional activities and passive activities which include walking, standing, sitting, watching and hearing, etc; and the second step is to encourage and support active behaviours which include chatting, playing sports, community activities /events, etc.

Additionally, whether optional behaviours or social behaviours, they can all be divided into three types. These are friendly behaviours, unconventional behaviours (“disorderly behaviours” (Kelling, 1987, p. 95) or “incivilities” (LaGrange et al., 1992, p. 312)), and anti-social behaviours,

depending on their social attributes (Whyte, 1980; Gehl, 1987; Marcus and Francis, 1990; Carmona et al., 2010; Project for Public Spaces, 2015).

With regards to the issue of unconventional behaviours, Marcus and Francis were the first people who discussed it in the built environment context. They (1990) identified these as the unsuitable but not illegal behaviours, which should be limited due to their negative impact on an environment and the quality of public life. This could be compared to the principle of “street barbarism” (Jacobs, 1961, p. 39), and the principle of “disorderly behaviour” (Kelling, 1987, p. 95) and the principle of “incivilities” (LaGrange et al., 1992, p. 312). All of these behaviours are not real crimes for the society, but are referred to as crimes against “quality of life” (Carmona et al., 2010, p. 149). As a consensus, it is suggested that the unconventional activities should be limited because they will reduce the sensitive users’ usage desires for the squares. In Marcus and Francis’s mind it is possible to limit the impact of unconventional activities (e.g. dog walking, cycling, skateboarding, roller-skating) and to mitigate the conflicts between different usages through offering the rational design (e.g. limiting the accessibility, creating exclusive spaces).

With regards to the issue of anti-social behaviours which were identified as the criminal and illegal behaviours, they were suggested to be definitely discouraged and at best to be forbidden in a built environment (Marcus and Francis, 1990; Carmona et al., 2010). Scholars believe that it is possible to discourage these, firstly by minimizing the environment’s supports which potentially assist the criminal e.g., dense planting, blind corners, poor lighting; secondly by maximising the uses of space so that no places are deserted or remote enough for criminal behaviours; and thirdly by encouraging police surveillance (Marcus and Francis, 1990; City of Vancouver, 1992; Project for Public Spaces, 2015).

Here, although no literature which list the unconventional activities and anti-social activities in squares was found, the non-direct but relevant research (e.g. research of Marcus and Francis (1990), research of Jan Gehl et al. (2006)), inspired the author on the due attitudes towards them in the squares.

Based on the discussion above, the author draws a relationship between the “affordance” of a socially beneficial urban square and the public activities that occur in it as follows:

The affordance of a socially beneficial urban square should not simply be expressed as the capability to support various activities, but as the capability to support the diverse public activities evenly and wisely which includes supporting the friendly activities, limiting the unconventional activities, and preventing the anti-social behaviours.

In summary, this section clearly identifies the activities that a socially beneficial urban square takes responsibility of to afford and to not afford. Once this issue is clarified, then it is time to explore the issue of clarifying the issue of the affordance of an environment to support the diverse users, which is to be discussed in the next section.

2. Affordance for diverse users

“The urban environment should be an environment that encourages people to express themselves, to decide what they want and act on it.”

(Jacobs and Appleyard, 1987, p. 523)

According to the issue of the affordance for diverse users for their usage of urban open space, a number of scholars and organisations have explored and offered their ideas on the subject. Although the direct literature that focuses on urban squares are limited, some non-direct but relevant research outcomes (Lynch, 1960; Jacobs, 1961; Sommer, 1969; Maslow, 1970; Whyte, 1980; Gehl, 1987; Marcus and Francis, 1990; Carr et al., 1992; Carmona et al., 2010; Thwaites et al., 2013; Project for Public Spaces, 2015) still inspired the author to finalise the list of main factors that can affect the users’ usage choices and perceptions of squares. For squares, finally there are nine factors that are determined to be on the list which will affect the affordance for diverse users. These are: location, accessibility, permeability, safety and security, scale, legibility, amenity sense and artistic quality, equity, and territory.

Many of these are familiar terms and principles within the discourse of urbanism in the West. However, what the author focuses on here is how these principles are applied into the square space, and in particular, how to reflect the socially beneficial value of a square through managing these factors.

Location

“The best locations of squares are those that attract a variety of users”, raised by Marcus and Francis (1990, p. 19), implies that the issue of location can affect the users’ choice regarding their uses of squares. As identified in Chapter 4.2.1, attracting and supporting diverse users is one of the ultimate missions of a socially beneficial urban square, therefore clarifying how to manage the issue of location in attracting and supporting diverse users will contribute towards delivering a square which possess socially beneficial value.

With regards to the topic of location, as Carmona et al. (2010, p. 207) implied: “If a space is well located, then good design can enable it to realise its previously untapped potential”. In the author’s mind, this is more related to the planning issue than the design issue. In view of this, it is suggested

to consider this topic in a more strategic, logical and systematic manor rather than to simply consider it in one way from one perspective.

As discussed in Chapter 4.1, the squares are proposed to serve the city life with different designated main functions which are mainly for enhancing a city's image, for supporting the citizens' recreation life, for sustaining the traffic, or for acting as a portal for building. Therefore reviewing whether the distribution of different functional squares achieves the balance on a city strategy is a primary step. Consequently, due to these designated different identities offered to each square, every square will have its own service radius. Reviewing whether this service radius would match the practical needs' radius is a second step. Finally, inspired by Whyte's (1980) suggestion that a good location for sociable space is preferably on a busy route and being both physically and visually accessible, reviewing whether or not the proposed location of a square is within an area that has potential diverse users is the last step.

Accessibility

Marcus and Francis (1998, p. 24) stated: "The best-used plazas are often those that are easily accessible to a variety of people"; while PPS mentioned: "To be successful, a square needs to be easy to get to, and get through, while the best squares are always easily accessible by foot" in their "10 Principles for Successful Squares" (Project for Public Spaces, n. d.). Combining their opinions, it can be elicited that accessibility is another crucial issue that will affect the users' choice in their usage of squares. Therefore it is selected as one of the factors that will affect the delivery of a square as a socially beneficial square.

Here the accessibility mainly means the physical accessibility, and the visible accessibility will be discussed in the permeability section. The physical accessibility includes the external accessibility and the internal accessibility. In terms of the external accessibility which can be categorised into "macro design" (Hillier, 1996a; 1996b), The City of Vancouver (1992), who supported and applied Marcus and Francis's research, has stated that: "A plaza should provide easy and direct access to all, particularly for the elderly, disabled and young children" in their "Plaza Design Guidelines". In terms of the internal accessibility which can be categorised into "micro design" (Hillier, 1996a; 1996b), inspired by Gehl's (1987) works and the work of Carmona et al. (2010), it can be deduced that the square should provide easily useable internal circulation which can smoothly deliver the people to the places where they want to get to.

Permeability

Permeability, as Thwaites et al. (2013, p. 92) said, "...can have a significant influence on the level of activities in a space". While the discussions of Gehl and Gemzoe (1996) and López (2003),

showed that when the level of permeability between the buildings and the street increased, the level of people's activity within the street increased. They all imply that permeability of a built environment will influence the users' usage perceptions and decisions within that built environment. Inspired by these, therefore "permeability" is selected as one of the crucial factors which will affect the delivery of a square as a socially beneficial urban square.

In terms of permeability, this involves both external permeability and internal permeability in the author's mind; and it not only means the "physical accessibility" but also includes "the visual, olfactory and audible permeability" (Thwaites et al., 2013, pp. 91-92).

With regards to external permeability, which could be referred to as "transparency" (Gehl and Gemzoe, 1996; Thwaites et al., 2013, p. 95), The City of Vancouver (1992) has discussed that "Plaza should be linked to the other surrounding open spaces, as well as interior spaces such as lobbies, to create a dynamic pedestrian network. Such links will make the plaza more useful and provide a more dynamic, coherent urban environment". PPS also even discussed the permeability issue, but from the visual perspective, as: "Elements within the square that are visible from a distance... entices pedestrian to move toward the square." (Project for Public Spaces, n. d.) and "if a space is to be used, people need to see it..." (Project for Public Spaces, n. d.), respectively in their publications of "10 Principles for Successful Squares" and "Public Spaces Fail". With regards to this, Healthy Spaces and Places (2009) offered their suggestions on how to increase the permeability as: "...a strong sense of connection between the urban square and the ground floor of surrounding buildings can be created through verandas, bi-folding doors, windows and direct doorways." These offered the author an inspiration that the external permeability of a square could be achieved or reinforced by using physical devices.

With regards to internal permeability, the connectedness and transparency also apply. As Hillier (1996b) mentioned, the key quality in terms of people's uses of public spaces is their "connectedness", and the key issue of an attractive space is offering the visual permeability into the space rather than prioritising a sense of enclosure to it.

As we know, a square normally accommodates a few physical objects which are set by the designers to form a certain spatial hierarchy within a square with the aim of serving the users' different usage needs better. Here, Hillier's (1996b) argument pointed out that even for setting the spatial hierarchy, the transparent spaces which are also interpreted as "transitional edge/buffer zones" by Thwaites et al. (2013, pp. 96-98) are needed inside a square. These spaces should not be considered as "black or white" (Madanipour, 2003, p. 66), they should be permeable and neutral. These spaces work as channels to drive the information in one sub-area to another which can stimulate the occurrence of more social behaviours (both passive and active activities). In

other words, permeability can integrate a number of divided sub-spaces into an entire square with respect to their hierarchy, and can reduce the possibilities for forming “isolated spaces” inside a public square.

Safety and security

“Creating a sense of security and safety is, thus, an essential prerequisite of successful urban design”

(Carmona et al., 2010, p. 148)

As Carmona et al. (2010, pp. 113-147) said, people will face a variety of threats in the urban environment and the sense of safety and security will greatly affect them in deciding whether to use a public space or not. In terms of squares, Marcus and Francis (1990, p. 66) mentioned that the sense of security was one of the perceptions that a successful square should provide; while The City of Vancouver stated (1992) “the design of a plaza should provide safety”. Therefore “safety and security” is also selected as one of the crucial factors which will affect the delivery of a square as a socially beneficial urban square.

Here, with regards to the issue of safety and security of a square, firstly it needs to be clarified that this is related to not only “being safe” but also “feeling safe”. Being safe is a more physical issue which is directly presented by physical substances that stops people from feeling fear, such as, being away from acts of crime, acts of terrorism, natural disasters, air pollution and so on. While feeling safe, interpreted as “fear-of-victimisation” by Carmona et al. (2010, p. 148), is a more psychological issue, which stops people from feeling at risk. As Carmona et al. mentioned, in response to fear-of-victimisation, people will take precautionary actions either to avoid the risk, or reduce their exposure to the risk if this is not possible. Therefore perceiving the items that make the potential users “feeling not safe” and significantly reducing these through design is one of the essential tasks in the delivery of socially beneficial urban squares.

There is no research that has listed the exact items that result in the users “feeling not safe” when they use a square, because users will have different perceptions and assessment criteria for this, due to their individual differences, such as culture, gender, age, their cognitive competence, their active abilities and so on (Carmona et al., 2010, p. 148). However, based on the inspirations that are offered by the relevant research (Marcus and Francis, 1990; City of Vancouver, 1992; Carmona et al., 2010), the author suggests that this issue can be understood and resolved in a three-step analysis process. These are: firstly analysing and listing the specific physical objects that can directly or potentially result in “feeling not safe” either by themselves or by their application manners (e.g. lack of lighting, isolated corners, un-safe objects and so on); secondly

analysing and listing specific behaviours that can directly or potentially result in “feeling not safe (e.g. criminal behaviours, and unconventional behaviours that are identified based on the local culture); and thirdly, avoiding the occurrence of the above two hazards through appropriate design and management. In conclusion, when a designer can understand and resolve the risks that are brought by either physical objects or people’s behaviours, the public spaces which includes squares can be safe for the users.

Scale

It is widely recognised that the issue of scale has a significant impact on the users’ usage perceptions and usage decisions of a built environment (Alexander et al., 1977; Whyte, 1980; Gehl, 1987; Marcus and Francis, 1990; Carmona et al., 2010). Therefore “scale” is selected as one of the factors that will affect the delivery of a square as a socially beneficial square.

Marcus and Francis (1990) has argued that it was difficult to recommend any particular precise sizes to squares that can be applied universally because different squares will have different locations, contexts and functions. However, it does not mean we are at a loss for what to do. The discussion below reveals the application method for ensuring the issue of “scale” contributes towards the delivery of socially beneficial urban squares.

Firstly, in terms of the scale of a space, especially specific to a square, Alexander et al. (1977) was the first person who discussed and raised the relevant recommendation in his “A Pattern Language”. They (1977) pointed out that as the largest and most popular public living room of a city/town. Squares should be big enough to accommodate a particular number of people; but when they are oversized, they will be appear and feel deserted and end up dead in real life. Furthermore, they verified that the normal squares, except for the great town squares, will work best when their diameter is about 60 feet. This is because when its diameter increases above 70 feet, the square will begin to seem deserted and unpleasant. When the square is not round in shape, then the short direction (width) should be usually no more than 45-60 feet across, and definitely never more than 70 feet across. In the end, they (1977, p. 312) summarised and raised the point that “the smaller squares will feel comfortable for a far greater percentage of the time” based on the analysis of the perceptions of human beings.

Consistent with this point of view, Whyte (1980) also believed that small urban places (squares) are “priceless”. Related to this issue, Marcus and Francis (1990) also identified and raised the point that most of the successful enclosed squares of the past have not exceeded 450 feet in the smaller dimension. While Healthy Space & Places (2009) raised the point that where intensive use is the goal, civic spaces including squares, should be no more than 35 meters wide to avoid

agoraphobic area in the centre. Meanwhile, they suggested that the ideal scale between a square and its surrounding buildings to be as follows. The ratio of square's width to building's height is to be between 2:1 and a maximum of 2:1.5, because this scale could give the users a sense of enclosure. This suggestion can be treated as the development of Camillo Sitte's (1945) work which suggested that the relative ratio (D/H: width/building height) that could achieve the balance on spatial perspective is between 1 and 2. This is because when $D/H < 1$, the square will lose the sense of being a node; when $D/H > 2$, the square will lose the sense of enclosure.

From the above, it can be seen that different scholars offered different suggestions on the ideal sizes of squares, and that they did not provide a rational method to guide the practitioners in estimating the appropriate size of a square. Therefore, in this situation, it is important to discover a logical method that can be universally applied in calculating the optimal size for a square. In the author's mind, this is related to three issues as follows.

- The number of users that the square is proposed to hold.
- The types of users' behaviours that the square is proposed to support and sustain
- The rational size for each type of behaviour, especially for the behaviours that are participated in by a large number of people

Finally, based on the understanding of the above three issues, the appropriate size of a particularly proposed square could be estimated. In addition, this method could be applied to determine the appropriate sizes for the sub-areas when the whole square space is divided.

Finally, for a socially beneficial urban square which takes on the responsibility of supporting and sustaining diverse users, it is essential to identify the appropriate size for people's perceptions. Lynch (1971) is a pioneer in this field and has stated that, in scale, no more than 80 feet is a pleasant human scale and no more than 40 feet offers the perception of intimacy. Gehl (2010) further explored this issue and identified that 0-45cm is considered as an intimate distance, 45-120cm as personal distance, 1.2-3.7m as social distance, and greater than 3.7m as public distance. He (2010) also suggested that 70-80m (230-330 feet) is the maximum distance for being able to see events, and 20-25m (65-80 feet) is the maximum distance to identify facial expressions.

Legibility

Legibility, firstly referred to by Kevin Lynch (1960), has been identified as one of the crucial factor that can affect the people's usage perceptions of a built environment and have an impact on how they make their choices (Appleyard, 1980; Bentley et al., 1985; Gottdiener and

Lagopoulos, 1986; Taylor, 2009; Carmona et al., 2010). Therefore “legibility” is selected as one of the factors that will affect the delivery of a square as a socially beneficial square.

Appleyard (1980) has identified that the legibility of a physical setting will be delivered on four aspects. They are firstly by their distinctiveness of form, secondly by their visibility as people move around the city, thirdly by their role as a setting for activities, and fourthly by the significance of their role in society. While Carmona et al. (2010, p. 118) highlighted: “reading an environment involves understanding how it comes to mean different things to different people and how meanings change”. These two discussions imply that the legibility does not only relate to the sensorial perception of a physical setting such as size, shape, colour, and so on; but also relates to the social and emotional perceptions of a physical setting, such as their significance in society. From this, it can be inferred that for delivering good legibility to the squares’ users, taking into account the local cultures and identities is essential.

Additionally, Lane (2000, p. 111) showed that normally people use “signifiers” as the method to improve the legibility of a physical setting. They usually includes three types, which are iconic signs, indexical signs, and symbolic signs. Therefore, it can be suggested that, for creating good legibility for a square, offering signifiers that possess the local features and identities could be an effective method, because it could significantly enhance the users’ “sense of local belonging” (Norberg-Schulz, 1971, p. 25; Relph, 1976, pp. 111-112; Crang, 1998, p. 103).

The sense of amenity and comfort - internal physical attractions

As many researchers have agreed, the users’ sense of amenity and comfort within a built environment, which includes squares, will significantly affect their usage perceptions and decisions (Lynch, 1960; Crowhurst-Lennard and Lennard, 1987; Vancouver, 1992; Lynch et al., 1995; Marcus and Francis, 1998). In addition, Lennard and Lennard (1987) implied that the amenity sense could affect the people’s social contacts and communications within a space. Therefore, the sense of amenity and comfort is determined and selected as one of the crucial factors that needs to be covered here.

In terms of the users’ sense of amenity and comfort, the functionality and the artistic quality of the internal physical attractions have significant impacts on it. Based on the research outcomes of Marcus and Francis (1998), Nasar (1998), The City of Vancouver (1992), Project for Public Spaces (2015), and Gehl (1987, 2006), the author teased out the most relevant internal physical attractions to a square, and categorised them into two themes, as follows:

- Physical objects: planting (lawn, fora), fountain, level change, sculpture, paving, illumination,

seating, signage, public art, vending, and shade.

- Human being: people and their behaviours.

The author does not plan to discuss the specific suggestions on how each element achieves good aesthetic appreciation and functional appreciation in the way that some other scholars have. This is because the aesthetic appreciation and functional appreciation are closely related to the users' social and cultural awareness and have no standard that can be universally applied. However, the above two themes could be used universally to inspire the designers to discover the attractions that need to be offered sufficient concerns when they aim to deliver a square with good sense of amenity and comfort.

Equity

“If urban design is about making better places for people, then the ‘people’ referred to are all the potential users of the built environment - old/young, rich/poor, male/female, those able-bodied and those with disabilities, the ethnic majority and ethnic minorities.”

(Carmona et al., 2010, p. 158)

Square, as one of the significant public urban forms delivered by urban design, no doubt should have and provide the attribute of “equity” to all of the potential users, whatever their ages, genders, mobility, wealth, educational backgrounds or cultures. Due to its significant impact on the social value of an urban square, “equity” is determined to be included on the criteria list of socially beneficial urban squares and to be discussed here.

Although there is no literature which particularly focuses on the issue of “equity” of squares that were found, some researches that relate to the “equity” of the built environment have offered the author inspirations and stimulated thinking on this issue. This section is determined to discuss the equity issue from three themes. These are: offering equality to the disabled, offering equality to different genders, and offering equality to different ages, as follows.

Here, in terms of offering equality to the disabled, there are two issues that need to be clarified. The first is the recognition of the range of disabilities and impairments that affect the people in using a square. The second is the understanding that offering the equality to the disabled is an essential issue in the design process of a square, rather than being a bonus. For the first issue, the identifications which were offered by the HM Government (2010) and Carmona et al. (2010) inform us that the square space shouldn't only accommodate the mobility and sight impaired people who are normally considered by designers, but also accommodate the other types of disability such as hearing and cognitive deficits, who are normally overlooked by designers. For

the second issue, as Carmona et al. (2010, p. 159) raised, providing a sense of equality to the less able-bodied people in the public open space should not be regarded as an “add-on” extra and as “an extra cost to be resisted” in the planning and design process. Therefore, it could be inferred that a square should be delivered as a “barrier-free” built environment for all of the potential users whether they have a disability or not, and that the consideration of them in the planning and design process is not a bonus, but an essential issue.

In terms of offering equality to different genders, in the last century, a number of researchers had raised that men and women have different concepts of open space and what they seek from it, due to their differences in lifestyles, demands and activities' patterns within society (Marcus and Francis, 1990; Cavanagh, 1998). In short, Mozingo (1984, pp. 53-54) and Marcus and Francis (1998, p. 27) summarised these differences as: women seek “back yard” experiences (comfort, relief, security, control, relaxation); whereas men seek “front yard” experiences (publicness, social interaction, involvement). In the new century, although the differences on usage patterns and desires for public open space between men and women are gradually reducing due to the promotion of the principle of “gender equality” in today's society, some usage differences between the two genders still exist. As Carmona et al. (2010) implied, women are more sensitive to the safety issue, are more cautious to non-arranged social activities, and are more sensitive to the quality of the physical attractions within a built environment. From this, it can be inferred that, although women and men are both human beings, their usage patterns and desires for a square could be different due to the characteristics of the different genders. Therefore, recognising the existence of these differences, understanding them, and offering sufficient concern on them in the planning and design process of a square are essential.

In terms of offering equality to different ages of people, as we know, people in different age groups have different aspirations, needs and behaviour patterns with regards to their uses of urban spaces including squares. This is due to their different social standings, degrees of sensitivity for matters, and engagement with their localities. Therefore the conflicts of uses between different aged groups exist (Holland et al., 2007; Carmona et al., 2008).

While The World Health Organisation (WHO) raised a concept of “age-friendly cities” in 2006 and coined this term in its “Global Age - friendly Cities: A Guide” in 2014, which is founded on the principle that older people should be fully enabled to continue participating in all aspects of life - social, cultural, civic, and economic” (2014). Meanwhile, Sophie Handler (2014) implied this point and integrated all of these principles into her concept named “all age friendly”, which refers to creating a place that is friendly and good for all ages of people. Here, understanding the usage differences between different age groups and offering equality to all of them is essential in the planning and design process of a square. In other words, as a socially beneficial urban square,

it should work for all ages of people, rather than just working for particular age groups.

In addition, in the countries which are suffering from a significant rich-poor divide and have a diverse ethnicity, the equality issues between the powerful group (rich, ethnic majority) and the vulnerable group (poor, ethnic minority) need to be considered in achieving a balance on the issue of the distribution of squares in a city

Finally, one point that needs to be identified is that “equity” offered by a square does not mean offering equal space to each user, but means offering equal positions to all of the potential users during the planning and design process of a square.

Territoriality

No doubt, a square is a public space if classified by its attribute. However in real usage, it is found that users normally divide the whole square into a number of semi-public spaces and even private spaces on the spatial layout either indicatively or implicitly. This phenomenon implies “territoriality” issue do exist in squares. Although there is a lack of literature which discusses the territoriality issue of squares, a number of researchers have discussed it within the wider context - built environment. They have stated that it was a crucial factor that affects users’ personal well-being and social contacts (Newman, 1972; Altman, 1975; Marcus and Sarkissian, 1986; Buchanan, 1988; Habraken and Teicher, 1998; Hoogland, 2000; Day, 2002; Thwaites and Simkins, 2007; Thwaites et al., 2013). These discussions imply the significance of “territoriality” on the users’ usage decisions and perceptions of built environment which includes squares, therefore it is determined to be discussed here.

With regards to personal well-being, Altman (1975, p. 138) stated that “Territoriality may play a long-range role in the well-being of the whole species”. This was agreed by Habraken and Teicher (1998), Day (2002) and Thwaites et al. (2013), because they all believed that territoriality is an innate and fundamental part of human nature which will be present in their activities and therefore should be recognised and respected.

With regards to social contacts, the concept of “the secondary territorial space” that was firstly raised by Altman (1975, p. 17) is worth mentioning here. It is identified as transitional zone which are between the private and public space (Thwaites et al., 2013), and is recognised as the facilitator for social interactions and activities (Hoogland, 2000), because intensive interactions shall only develop where individuals are given the opportunity to personalise their own territorial space within a public space.

For making secondary territorial spaces in a public space which include square, “territorial

markers” (Altman, 1975, p. 250) were suggested to be used to imply the boundary of different secondary territorial spaces. Newman (1972) discussed the media which can work as the “territorial markers” and stated that they could be real markers or symbolic markers. “Real markers” can be understood to be the existing elements in the physical world which can distinguish the boundaries amongst spaces, such as “...fences, shrubs, steps, changes in ground level, changes in paving texture, light standards, open portals and so on.” (Newman, 1976, pp. 108-109). While “symbolic markers” can be understood to be the symbols which offer the psychological hint of the privatisation of a space (Newman, 1976; Bentley et al., 1985; Hoogland, 2000; Nooraddin, 2002; Biddulph, 2007). In terms of the psychological hint, the research of “socially restorative urban space” by Thwaites et al. (2013) explained this point further. This research indicated that, for a person, the space can be recognised by the division of “my space”, “their space”, “our space”, and “your space”, on their psychological map. This implies that as long as the elements can offer the people a perception of boundary, whether physical substance or virtual substance, they both can be treated as “symbolic markers”. Furthermore, in the author’s mind, “symbolic markers” can be represented not only by the real physical objects, but also by non-physical elements, e.g. people’s behaviour, or the atmosphere created by people’s behaviours (activities).

As Altman (1975, p. 133) verified “people respond to one another’s territorial makers in a variety of ways, such as respect, interpretation to others, and even surrogate defence”, which implies the existence of “territorial conflicts”. It was explained by Francis (2003, p. 4) as: “the conflicts can occur when different users have competing purposes and meanings that they attach to public open space”. As a space which aims to encourage and sustain diverse users and their behaviours, the “territorial conflicts” need to be considered and mitigated in the design process if they exist. Here, the author suggests that the best way to resolve this issue in the delivery of a socially beneficial urban square is to thoroughly investigate and understand the needs and desires relating to the territory issue of different users, and positively response to them, in the design process. Meanwhile, the author would highlight the following point that relates to the territory issue in a square space. In the real usage, territory distribution in a square would not obey the designers’ designation, but would be formed by the users themselves (Lawson, 2001, pp. 2-3); therefore the design of a square should not focus on formulating the usage rules, but on facilitating the formation of the rules.

3. Supporting the diverse users and diverse behaviours over time

Robustness

As we know, squares are normally created as long-term use spaces within a city, therefore, the inclusiveness or “adaptability” (Lynch, 1972, pp. 108-109) of squares for the changeable users

and their changeable usage desires and behaviours over time is crucial. As a socially beneficial urban square, which focuses on the preservation of its vitality in the long term rather than the preservation of its physical form in the long term, this issue of inclusiveness or adaptability has greater importance. Here, the inclusiveness or adaptability is interpreted as “robustness” by the author, and is taken to mean the ability of a square to accommodate the change of users and their usage desires without undue deformation.

“Robustness” was coined by Carmona et al. (2010, p. 253) as “the ability to accommodate change without significant change in the physical form”. They especially highlighted that “robustness” is not just relevant to form and function but also related to the value, meanings and symbols associated with or embodied by that form. The similar principles raised by other scholars, such as “looseness” are helpful in understanding the principle of “robustness” (Habraken and Teicher, 1998; Madanipour, 2003; Fernando, 2007; Franck and Stevens, 2013). In terms of “looseness”, it was coined and identified by Dovey and Polakit (2010, p. 167) with three distinct components which were “loose forms”, “loose practices” and “loose meanings”.

While, Thwaites et al. (2013) pointed out that loose space is a realm which is indeterminate and embraces freedom of choice. From the above, it can be seen that although the terms that different scholars used are different, their connotations are similar. In short, they are all relevant to the attribute of a space with regards to its flexible and adaptable capability which is the core connotation of “robustness”.

Lynch (1972) offered the solutions for achieving the adaptability (inclusiveness) of a built environment, which was summarised by Carmona et al. (2010, p. 254) as: “by providing excess capacity at the outset; providing generous communication facilities; separating those elements likely to change from those unlikely to change; and allowing space for growth at the ends, sides, or within sectors”. For the solution, Brand (1994, p. 174) has argued that the adaptability could not be predicted or controlled; and thus, “make room for it - room at the bottom is the only wise solution”. While inspired by the above and a number of architects’ discussions relating to the “robustness” in the architectural context (Bentley et al., 1985; Moudon, 1987; Duffy, 1990; Brand, 1994), the author suggests the following three methods to help achieve robustness within a square.

- Avoid the over hard design to provide a square with the capability to be used both as a number of sub-areas for small scale usage and as an entire space for big events. This could be achieved in two ways: not offering too many immovable hard or soft materials to a square, and not dividing a square into too many sub-areas which are only suitable for single usage.
- Provide some context appropriate facilities which can accommodate the change of users’

needs due to the change of micro-climate and weather.

Management

This topic is more about “place-keeping” (Dempsey et al., 2014) rather than “place-making” (Bohl and Schwanke, 2002; Brown et al., 2009; Carmona et al., 2010; Project for Public Spaces, 2015). Due to the study emphasis and time limitation, the management issue will not be explored and discussed in great detail within this research. However, as Marcus and Francis (1990) raised, the subsequent management of a square is crucial to its success or demise in most cases. The author believes that it is necessary to list this issue on the criteria list of socially beneficial urban squares and to offer a concise discussion. This because a square is normally not a temporary space, and thus keeping it in a good condition over time will significantly affect its attractiveness to its potential users.

As we know, “designers customarily sign off the design process when the construction is completed” (Marcus and Francis, 1990, p. 44). How then can planners and designers contribute towards the management issue? Here, the author suggests considering that: today, should a design statement still only deliver the design solution to the clients as before?; and should it include a number of suggestions for management, which may include the suggestions on maintenance, the suggestions on the operation of activities, the suggestions on how to encourage the community to participate in the proposed square, and so on?

In the author’s mind, in the new century, square’s design should be one part of the “broader sustainable development agenda” (Carmona et al., 2010, pp. 366-368) that seeks to create a sustainable square economically, socially and environmentally rather than being a one off design agenda as the case has traditionally been. In the end, one point needs to be highlighted. It is that management is an activity which is organised and implemented by the square space manager(s), and its quality will significantly affect the squares’ usage by people. Therefore, for successfully delivering socially beneficial urban squares, it is recommended that the relevant management suggestions, e.g. maintenance or event organisation should be considered and offered at the design stage rather than be postponed, only to be considered at the management stage.

In summary, the discussion in this sub-chapter explores the factors that will affect the delivery of socially beneficial urban squares in the Western context. These factors can be summarised into three categories. These are: the affordance for diverse behaviours, the affordance for diverse users (location, accessibility, permeability, safety and security, legibility, scale, amenity and comfort sense, equity, territoriality), and the affordance for those two over time. As Moughtin and Mertens (2003, p. 88) warned: “there is some danger in attempting to transfer design concepts which may be effective at one particular time, or at one place or in one culture to a quite different setting”.

Therefore, the criteria list that is composed of the factors obtained above cannot be directly applied in the Chinese context, and needs to be tested to prove its validity. This was carried out during the fieldwork in China, and is arranged to be explained in detail in next sections.

PART 3

RESEARCH IMPLEMENTATION AND OUTCOMES

Part 3

Chapter 5 The Selection of Study Sites

To contribute towards accomplishing task three that is clarified in Chapter 3.3, within this chapter, the study focus is changed to discover and illustrate the revisions to the concept and criteria of socially beneficial urban squares that are obtained from the West, by conducting the fieldwork in Chinese urban squares. Here, determining the study sites for the fieldwork is the crucial and primary work at the fieldwork stage. Therefore, this chapter is arranged to illustrate the selection criteria and the introduction of the study sites to the reader. In general, there are three sites in Guangzhou that are selected as the study sites for this research based on a series of logical and rational criteria. These are Hero Square, Water Fountain Square and Lighting Square. The details are specified below.

5.1 The Criteria for Selecting Study Sites

In this research, the selection of the study areas involves two steps. The first is to determine a study city, and the second is to select the appropriate sites within that city.

The criteria for selecting appropriate study areas have been identified. As suggested by a number of scholars, the selection of these sites was conducted mainly based upon three aspects, which are “representativeness”, “relevance”, and “families” (Tellis, 1997; Deng, 2007; Yin, 2009). These

suggestions help the author to set the specific criteria for selecting the study city in this research.

Firstly, as Tellis (1997) noted, the study area should be typical, not special, and represent the dominant cultural traditions of that region. As a development of this suggestion, the first selection criterion for selecting study city for this research is that the city where the study sites are located should be a normal and typical Chinese city, which is experiencing typical Chinese city urbanisation, and is suffering from the typical problem associated with urban squares.

Secondly, Tellis (1997) mentioned that, the more familiar the researcher is with the language and the cultural of a social setting of the study area, the more accurate the interpretation will be. Inspired by this, the second criterion is set so that: the city where the study sites are located, should be within an area familiar to the researcher, which could enable the target data to be collected on time, and on budget, and so lead to a productive outcome.

Thirdly, to increase the potential impact of this research, the city where the study sites are located, should be a typical Chinese city, with enough emissive power to influence the other cities' urbanisations in China.

Based on the consideration of the selection criteria established above, Guangzhou stands out as a suitable city because of its three leading characteristics. Firstly, it is the capital of Guangdong province in the South of China, which is experiencing typical Chinese urbanisation, and is suffering the typical problem of urban squares clarified in Chapter 1, and therefore is eager to find the appropriate solution. Secondly, Guangzhou is the city where the researcher used to live for a while, which means that the researcher is familiar with the city's development and is able to carry out the field work more efficiently and productively, based on the positive support of local recourses. Thirdly, Guangzhou is one of the three most significant and influential cities in China due to its significant position and emissive power in the aspects of economics, culture and politics, which offers the main research outcomes the potential to be applied in the wider context (other cities) in China.

Once the study city is determined, then the next step is to determine the specific study sites. Before the selection, an overview of squares in Guangzhou is conducted through document analysis and field trips. It is found that there are 38 urban squares which currently exist in Guangzhou. Based on the discussion above, three criteria for selecting specific study sites from these 38 urban squares are identified as follows:

Firstly, the urban squares selected for this research should belong to the type of "Recreation Square", because it is the type of squares that should and would play a crucial role in supporting

urban social life, which matches the research emphasis of this study. Secondly, the urban squares selected in this research should be in the category of city level recreation squares which serve a wide range of the population in Guangzhou, and have a certain level of recognition, because this criterion could ensure that the data collected from the squares has a better representativeness and credibility. Thirdly, the urban squares selected for this research should be within those squares that have received a certain level of design input but that are still suffering from the typical problem. Finally, the urban squares selected for this research should be within those squares which were built or regenerated after 2000, because the typical problem of the urban squares on the social dimension was raised after 2000.

Finally, with the consideration of the feasibility with the limitation on the research time, three urban squares in Guangzhou are determined as the study sites for the fieldwork based on the above selection criteria. More details of the selected city and sites are illustrated below.

5.2 Introduction of the Study Sites

In this research, three sites within one city, Guangzhou, have been selected, based on the criteria set out above. These sites are; Hero Square, Flower City Square - Water Fountain Square, and Flower City Square - Lighting Square. This study aims to explore the issues of one city in depth, which also relates to other cities in China.

In general, Guangzhou, also known as Canton, is the capital and largest city of Guangdong province in the South of China, which is located on the Pearl River and close to Hong Kong and Macau (see figure 5.1). It is not only the political, economic, sci-tech, and cultural hub of the south of China, but also the third landmark city in the whole of China (Ministry of Housing and Urban-Rural Development of the People's Republic of China, 2010). It has over 2100 years of history which can be dated back to the Zhou Dynasty (Xu and Yeh, 2003).

Its first administrative boundary was determined in the Qin Dynasty, which was far greater than that of today (Qiu, 1998). Since then, its administrative boundary has experienced a number of changes, whilst the latest demarcation of the administrative boundary was identified in 2014, when it was transformed from including 10 districts and two county-level cities, to including 11 districts (State Council of the People's Republic of China, 2014) (see figure 5.2). Today, the total area within the city's administration is 7,434.4 square kilometres, having a population of approximately 14.08 million within the 11 districts (Guangdong Provincial Statistics, 2010). The most preferred social and leisure spaces by the citizens are commercial spaces (e.g. shopping malls, markets, restaurants, commercial streets); while parks are the second preference; and urban squares are the third (Wen, 2007). In addition to these, stadiums and libraries are also popular

space for the citizens' urban social life in today's Guangzhou (Wen, 2007).

Guangzhou, as a whole, can be divided into two parts, comprising the central area and the non-central area based on the citizens' common view. The central area, including 6 districts (Yuexiu, Liwan, Haizhu, Tianhe, Huangpu, and Baiyun) is called "Old Guangzhou" because it was the administrative boundary of Guangzhou between 1949 and 2000; while the non-central area, including the districts of Panyu, Huadu, Nansha, Luogang, Zengceng, and Conghua, are the places that were successively merged into Guangzhou since the year 2000 (see figure 5.2). Today, the combination of these two areas is called "New Guangzhou", by the public, with the aim of distinguishing it from the old Guangzhou.

In central Guangzhou, which is referred to as old Guangzhou, it was planned to have 75 built-up urban squares in total, through new-builds and the regeneration of old ones, which includes 23 cultural squares (recreation squares) by 2010. However, after the first fieldtrip encompassing all of the squares that appeared on the city's planning plan of central area of Guangzhou in 2012, it was found that some of the planned squares had not been built and that a number of the built squares had been demolished, which resulted in the fact that only 38 squares exist in the central area of Guangzhou by the end of 2012.

In detail, it is discovered that, until the author's site investigation in 2012, in Huangpu District, only one square existed which could be recognised as a recreation square; in Tianhe District, ten squares existed, which included three civic squares, two commercial squares, four recreation squares, and one landmark square; in Liwan District, eight squares existed, which included four civic squares, two recreation squares and two commercial squares; in Haizhu District, only three recreation squares existed; in Yuexiu District, fifteen squares existed, which included eight civic squares, three commercial square, and four recreation squares; in Baiyun District, only one square existed, which could be treated as the recreation square. Among these 38 squares, there are fifteen squares that could be treated as recreation squares in total.

After the second fieldtrip, out of these 15 built recreation squares, Hero Square, Water Fountain Square, and Lighting Square (see figure 5.3), which are all city level recreation squares, are determined to be the most appropriate sites for this research. This is because they all show evidence of having had a diligent design input but have a very imbalanced usage throughout a day, which could maximally reveal the reasons that result in the users' dissatisfaction towards the designed squares. The details of these three squares are illustrated below.

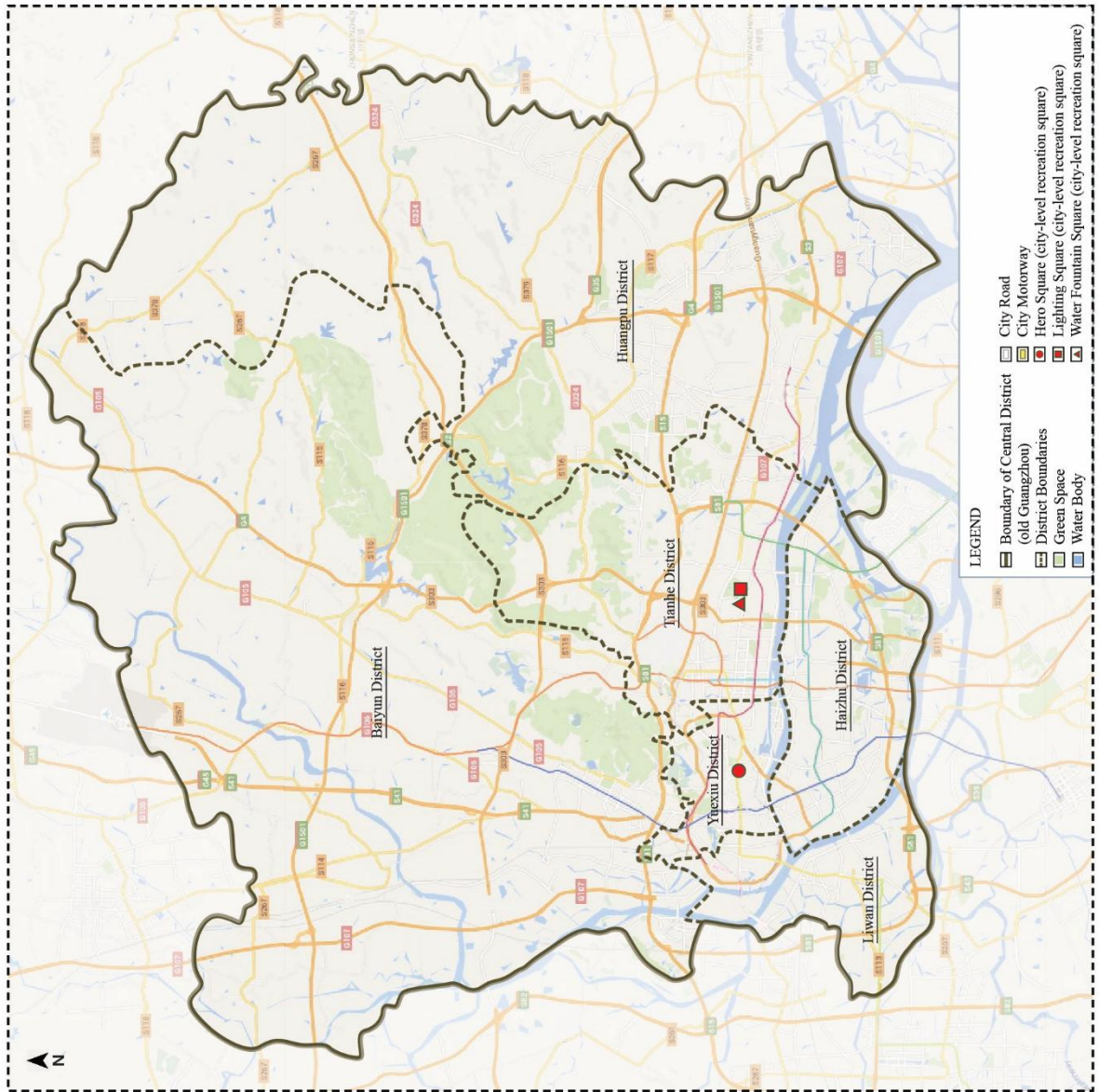


Figure 5.3 The context of central Guangzhou (Guangzhou Water Authority, 2013)

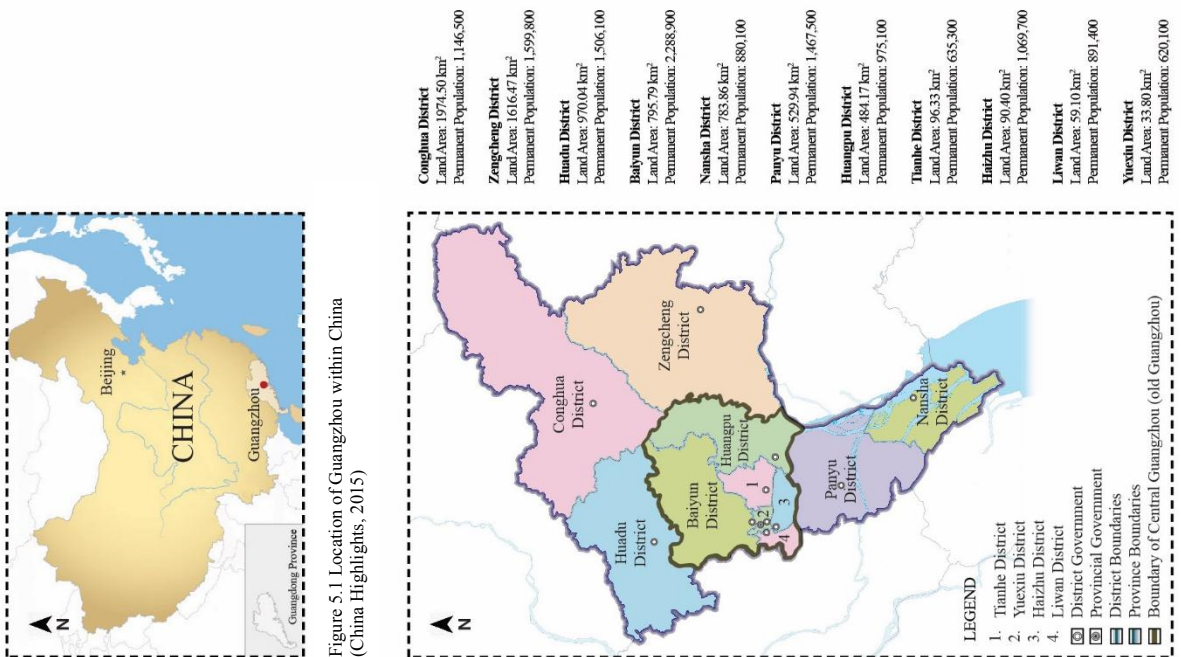


Figure 5.2 The distribution of eleven districts in Guangzhou (Department of land and resources of Guangdong province, 2015)



Figure 5.1 Location of Guangzhou within China (China Highlights, 2015)

5.2.1 Hero Square

Hero Square is located in the centre of Yuexiu District, and is the only large city-level square in this area. It was initially built in 1957 to commemorate and cherish the memory of the predecessors of the proletarian revolution, e.g. Zhou Enlai, Ye Jianying, Tao Zhu, and to act as the continuation of the martyrs' park of Guangzhou which is just opposite it (Guangzhou Land Resources and Urban Planning Committee, 2006). Subsequently, with the rapid development of the city, Hero Square experienced two rounds of regeneration within the last two decades culminating in today's pattern, which presently works as a recreation square for the public today.

The first regeneration started in 1999 and finished in 2001, which included the whole square that is a total of approximately 20,000m² and cost approximately 8.2 million Chinese Yuan (Yang, 2001). In 1999, the design work was appointed to Guangzhou Urban Planning and Design Automation Centre in August; subsequently, the design file was submitted and approved in 2000 by Guangzhou City Environmental Art Committee; finally, the construction work was completed in September of 2001 (Guangzhou Land Resources and Urban Planning Committee, 2006). After this reconstruction, Hero Square aimed to attract the public to use it for urban recreation, physical exercise, and visiting the memory/history, more than just commemorating the history and martyrs, with its designed open space and landscape (see figure 5.4).



Figure 5.4 Photograph of Hero Square (Peng et al., 2005)

The second regeneration was conducted in 2008, and only took place in the lower part of Hero square. The main change was the addition of 12 sculptural figures which represent 12 Guangzhou leaders of the uprising in the lower part (Zhang, 2008). The height of the sculptured figure is 4.8 metres in total, with the statue at 3.6m and the base at 1.2m. These 12 sculptured figures, which are inscribed with the names and deeds of the heroes, are placed symmetrically on the east and west sides and replaced the former flower beds (see figure 5.5) with the aim of offering a greater local cultural identity to Hero Square, and then also offer the humanistic education to the public within their urban social life.



Figure 5.5 Photograph of Hero Square (taken by the author)

Today, Hero Square presents the following layout (see figure 5.6) after two regenerations. It covers an area of approximately 12,000m², surrounded by Zhongsan third road to its north, by the Guangdong People's Stadium to its south, by Zhonghua Shopping plaza to its west, and by residential buildings to its east. It presents a symmetrical design layout with a north-south axis. It includes two parts. The upper part is in the north which presents a round shape; while the lower part is in the south which presents a rectangular shape. The green space is closed by granite retaining walls, which can be used as benches.

This square is currently used as a city-level urban open space and some irregularly scheduled events and activities are held there, such as for charitable or voluntary blood donations, the event for World Customer Rights Day, and so on (Feng, 2014).



Figure 5.6 Masterplan of Hero Square

5.2.2 Flower City Square - Water Fountain Square

Water Fountain Square is situated within Flower City Square, which is located in Tianhe district. Flower City Square is not a square in the conventional sense; instead, it is a massive urban open space in Guangzhou's CBD. It includes a series of green spaces and squares and is surrounded by a number of landmark buildings on both sides of it. It is located on the new axis of Guangzhou and was offered with the design concept as: "urban oasis near Peal River" (Wang, 2011, p. 53)

Water Fountain Square was appointed to Guangzhou Landscape Planning and Design Institution

for design in 2002. Their design principle was approved in 2006, and the construction was completed by 2010. This square is designed to be one of the climactic spaces of the whole Flower City Square, with the design concept as “an amazing water feature space for the public’s social life in CBD area” (Wang, 2011, p. 53).

It is located in the south of Flower City Square, with the twin towers of Chow Tai Fook Center and Guangzhou International Finance Centre on its east and west sides. While on its north and south sides, they are the channels to the other spaces of Flower City Square which include the underground commercial spaces and ground-level green spaces. The layout of Water Fountain Square adopts the central axis symmetric form with an oval shape music fountain in the centre, which covers an area of 9,249 m² (HC Sound and Lighting Network, 2010) (see figure 5.7). Besides the music fountain, on the east and west sides, there are wooden stands and temporary illumination which are made from waste water buckets. The paving of this square is simple and presents a concentric pattern centred on the fountain.

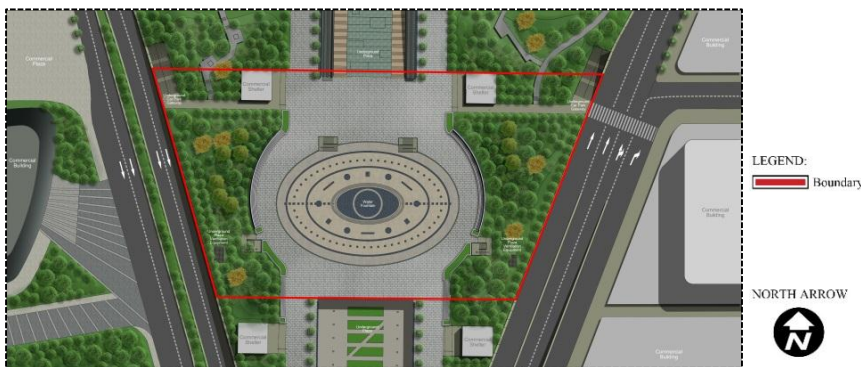


Figure 5.7 Masterplan of Water Fountain Square

The music fountain (see figure 5.8) in the centre is the core element of this square, with a designed maximum fountain height of 65 metres. It is controlled by programme to ensure the changes of fountain shape, lighting and music are synchronous (Liu and Zhu, 2003). The playing times of this music fountain are normally broadcast across Flower City Square five minutes before the performances start.



Figure 5.8 Photograph of music fountain (taken by the author)

5.2.3 Flower City Square - Lighting Square

Lighting Square was appointed to GDADRI for its design in 2003. Its design principle was approved in 2006, and the construction was also completed by 2010. It is designed to be an energetic urban open space with amazing illumination which could attract and sustain public urban social life (Wang, 2011).

It is located in the south end of Flower City Square, with four landmark public buildings (Guangzhou Opera House, Guangdong Museum, Guangzhou City Library, and the second Children's Palace) surrounding it on its east and west sides. To the south, they are the Hai Xin Sha Park and the 600 metres high Canton Tower; while to its north, it is the thoroughfare to the other places within Flower City Square.

The whole square (see figure 5.9) covers an area of 29,918 square metres, with a large rectangular and purely paved open space at the centre for leaving the view open to the Canton Tower as part of the design concept. The seating spaces and green spaces are located on its east and west sides. The illumination design is the highlight of this square, which was offered the design concept as “nightless green oasis” along with a principle of “green, low-carbon, and energy-saving” (Light Environmental Department Beijing Tsinghua Urban and Planning Design Institute, 2011). The illumination presents a comprehensive design, which includes the street lamps, paving lamps, bench lamps, landscape lamps, and architectural lamps, to offer the users a colourful environment in the evening. The paving presents a divergent and free pattern accompaniment to the lighting design, to provide a lively atmosphere to this square. Due to the large size of this square and the time limitation of this study, in this research, only half of this square is involved in the site investigation.



Figure 5.9 Masterplan of Lighting Square

Part 3

Chapter 6 Research Findings

The main findings of this research can be categorised into three parts. The first part contains the findings of the developed definition and classification of urban squares which are applicable to the Chinese context, which has been clarified in Chapter 4; the second part contains the findings of the concept and criteria of socially beneficial urban squares which are applicable in the Western context, which has also been clarified in Chapter 4; and the third part contains the findings obtained from the on-site non-participant observations and semi-structured interviews, which reveal the users' real usage patterns, preferences and desires for the recreation squares in Guangzhou.

This chapter focuses on the illustration of the findings in the third part, with the support of software applications, e.g. Geographic Information System (GIS), Google Form, NVivo, and Microsoft Excel. The assistance of the software applications would firstly contribute towards carrying out the later analysis work of the findings more effectively and efficiently; and secondly would contribute towards demonstrating the findings to the readers in a more visual and clearer format. The illustration of the findings in this chapter is split into two parts. They are the findings from the non-participant observations and the findings from the semi-structured interviews, as follows.

6.1 Findings from Non-participant Observations

In this sub-chapter, the findings obtained from the non-participant observations are illustrated in three steps. The first step involves the illustration of the diversity of users to disclose the participants and their specific usage features of urban recreation squares in today's Guangzhou. The second step involves the illustration of the diversity of behaviours to disclose the specific types that users interact with urban recreation squares and the features of their distributions in today's Guangzhou. The third step involves the illustration of the typical main users and their corresponding usage that occurs in the recreation squares in today's Guangzhou. Here, to state the findings in a more visual and accurate format, a series of comparative curve's diagrams, behaviour maps and tables are used as illustrations, which includes 45 comparative curve's diagrams selected from 114 diagrams, 36 behaviour maps selected from 435 maps, and 6 tables.

In detail, in section 6.1.1, the findings of the diversity of users are illustrated, respectively, by gender, by age, and by participating group, in the three recreation squares. It aims to summarise the usage trends and features of the three recreation squares, based on the analysis of the usage patterns across six observation days of them. In section 6.1.2, the findings of the diversity of behaviours are illustrated, firstly by listing and coding all of the behaviours which are currently occurring in the three recreation squares, and secondly by identifying their spatial distributions. These are carried out to reveal the usage behaviours and their features in the recreation squares in today's Guangzhou. Finally, in section 6.3, the findings of the top three behaviours and their corresponding users of the three recreation squares are illustrated by time in the six tables in Appendix C, to reveal the main typical behaviours that are occurring in the three recreation squares in today's Guangzhou.

6.1.1 The Diversity of Users in the Recreation Squares in Guangzhou

The diversity of users is illustrated and analysed with three themes in this research. These are by gender, by age, and by participating group. In the exploration of this issue, 114 curve's diagrams are generated. Here, due to the limited length of the thesis, it is not possible to show all of them in this section. Therefore, the author has decided upon only presenting 45 most relevant curve's diagrams in this thesis and input them in Appendix A. In this section, the users' usage trends and features are discovered based on the analysis of the 45 curve's diagrams and are illustrated as follows.

1. Differences by gender

Hero Square

(Day 1-Day 6)

(Jan 8th 2013-Tuesday, weather: 9°C-17°C, cloudy, slightly windy, and dry;

Jan 10th 2013-Thursday, weather: 9°C-14°C, cloudy, slightly windy, and dry;

Jan 12th 2013-Saturday, weather: 11°C-16°C, cloudy, slightly windy, and dry;

Jan 15th 2013-Tuesday, weather: 10°C-20°C, fine, slightly windy, and dry;

Jan 17th 2013-Thursday, weather: 8°C-19°C, fine, cloudy, slightly windy, and dry;

Jan 19th 2013-Saturday, weather: 12°C-18°C, cloudy, slightly windy, and dry)

Males' Usage Features:

Based on the analysis of the curve's diagrams (see Appendix A figure 1.1) which presents the evolving pattern of the number of male users across the six days in Hero Square, three characteristics of males' usage are discovered as follows:

- In general, males' usage trends during the day appear similar throughout the week to that at the weekend. The only obvious difference is that the number of male users at the weekend is greater than that during the week, at most times of the day. The males' significant usage period for this square is between 7:00 and 24:00.
- During the week, the whole trend of the male usage appears to increase progressively from 7:00 to 17:00, then appears to reach the peak in a day at around 20:00 to 21:00 (104 people), afterwards it appears to decrease sharply from 21:00 to 24:00, until only 2 people left who are the security guards of the squares. The males' usage present three usage peak times throughout a day during the week, which are at 11:00, 17:00 and between 20:00 and 21:00. While the male users' numbers at these peak times appear as an incremental trend.

In detail, from 7:00 to 9:00, the trend of the males' usage is relatively stable; from 9:00 to 17:00, there's a gradual increase in numbers; after this time, the number of male users falls to its low-point of a day between 18:00 and 19:00; then the number of male users appears to significantly increase between 19:00 and 21:00 and achieves the maximum of a day; at the end, the number of male users decreases sharply between 21:00 and 24:00 when only two security guards remain.

- At the weekend, the whole trend of males' usage presents more conspicuous fluctuations than that of weekdays, but it presents similar usage peak times to those of weekdays. In general, the evolving pattern of the number of male users' at the weekend could be divided into three

segments according to time. The first segment is from 7:00 to 9:00 with the evolving pattern being relatively stable; the second segment is from 9:00 to 21:00 with the evolving pattern presenting three usage peak times which are at around 11:00, between 15:00 and 17:00, and from 20:00 to 21:00, and two off-peak times which are at around 13:00 and between 18:00 and 19:00; and the third segment is from 21:00 to 24:00 with the evolving pattern presenting a sharp decrease in the number of male users until only the two security guards remain.

Females' Usage Features:

Based on the analysis of the curve's diagrams (see Appendix A figure 1.2) which presents the evolving pattern of the number of female users across the six days, three characteristics of females' usage are discovered as follows:

- In general, females' usage trends during the day appear similar throughout the week to that at the weekend. The only obvious difference is that the number of female users at the weekend is greater than that during the week between 9:00 and 18:00. After 18:00, the number during the week and at the weekend appear to be similar. The females' significant usage period for this square is between 9:00 and 22:00.
- During the week, the whole trend of females' usage fluctuates and shows three usage peak times, which are 11:00, 15:00 and 21:00. In detail, from 7:00 to 9:00, it is fairly stable and presents a low usage similar to that of the male's; from 9:00 to 17:00, it presents a gradual increase; from 17:00 to 21:00, it presents a fluctuating trend, and finally achieves its peak at 21:00; after 21:00, it presents a sharp decrease until 22:00 and then a gentle decrease to 24:00.
- At the weekend, the change of the number of female users could be divided into three segments according to time, which are from 7:00 to 9:00, from 9:00 to 21:00, and between 22:00 and 24:00. In the first segment, the evolving pattern of the number of female users appears to gently fluctuate. In the second segment, the evolving pattern presents that females' usage has three usage peak times across a day at the weekend, which are at around 11:00, between 15:00 and 17:00, and at around 21:00, and two low-points which are at around 13:00, and between 19:00 and 22:30; In the last segment, the evolving pattern presents a sharp decline between 21:00 and 22:00, which is similar to that of the male users.

Flower City Square - Water Fountain Square

(Day 1-Day 6)

(Jan 22nd 2013-Tuesday, weather: 16°C-21°C, overcast, slightly windy, and dry;

Jan 24th 2013-Thursday, weather: 13°C-23°C, cloudy, slightly windy, and dry;

Jan 26th 2013-Saturday, weather: 11°C-21°C, cloudy-rain, slightly windy, and moist;

Jan 29th 2013-Tuesday, weather: 10°C-22°C, cloudy-fine, slightly windy, and dry;

Jan 31st 2013-Thursday, weather: 13°C-23°C, cloudy, slightly windy, and dry;

Feb 2nd 2013-Saturday, weather: 15°C-25°C, fine-cloudy, slightly windy, and dry)

Males' Usage Features:

Based on the analysis of the curve's diagrams (see Appendix A figure 1.3) which presents the evolving pattern of the number of male users across the six days, three characteristics of males' usage in Water Fountain Square are discovered as below:

- The males' usage shows a similar trend across the weekday and the weekend with only one difference. This is that there is a slightly greater number of users at the weekend than that during the week at most times of a day.
- The males' usage presents a similar trend across the five observation days, with the only exception being on the 26th Jan 2013 when it was raining after 14:00. On 26th Jan, during this rainy period, there were few male users that used Water Fountain Square.

In detail, the males' usage of this square generally presents a stable trend of low usage with three exceptions which are their usage peak times (between 16:05 and 16:15, from 20:05 to 20:15, and from 20:05 to 21:15) when there are performances of the music fountain.

- The significant usage period of male users normally starts from 09:00 and finishes by 23:00, besides the exceptions mentioned above.

Females' Usage Features:

Based on the analysis of the curve's diagrams (see Appendix A figure 1.4) which presents the evolving pattern of the number of female users across the six days, four characteristics of females' usage are discovered as below:

- In general, the females' usage in Water Fountain Square has a similar usage trend across a day to the males' usage.
- Similar to the usage of male users, the females' usage presents a similar trend across the

weekdays to that of the weekend, with only one difference. It is that there is a greater number of female users at the weekend than during the week at most times of the day.

- Similar to the usage of male users, the females' usage presents a similar trend across the six observation days with three usage peak times, besides two exceptions, being the Jan 26th 2013 after 14:00 and Jan 31st 2013 between 13:00 and 15:00. According to the records, after 14:00 on Jan 26th 2013, it was raining heavily; while between 13:00 and 15:00 on Jan 31st 2013, there was a group of females rehearsing group dancing.
- The significant usage period for female users normally starts from 09:00 and finishes by 23:00 besides the exceptions when it rains.

Flower City Square - Lighting Square

(Day 1-Day 6)

(Jan 22nd 2013-Tuesday, weather: 16°C-21°C, overcast, slightly windy, and dry;

Jan 24th 2013-Thursday, weather: 13°C-23°C, cloudy, slightly windy, and dry;

Jan 26th 2013-Saturday, weather: 11°C-21°C, cloudy-rain, slightly windy, and moist;

Jan 29th 2013-Tuesday, weather: 10°C-22°C, cloudy-fine, slightly windy, dry;

Jan 31st 2013-Thursday, weather: 13°C-23°C, cloudy, slightly windy, and dry;

Feb 2nd 2013-Saturday, weather: 15°C-25°C, fine-cloudy, slightly windy, and dry)

Male Usage Features:

Based on the analysis of the curve's diagrams (see Appendix A figure 1.5) which presents the evolving pattern of the number of male users across the six days in Flower City Square, three characteristics of males' usage in Lighting Square are discovered as below:

- In general, males' usage trend across a day during the week presents a similar pattern to that at the weekend. The only noticeable difference is that there is a slightly greater number of male users at the weekend than that of during the week, at most times of the day.
- The males' usage patterns across the six observation days appears to form a similar trend, apart from two exceptions which are after 14:00 on Jan 26th 2013 and at around 17:00 on Jan 31st 2013. On 26th Jan, the number of male users presented a significant decrease after 12:00 and fairly low usage after 14:00 because it was cloudy from 12:00 and started raining after 14:00. On Jan 31st 2013, it appeared that there were more than a normal days' male users using the Lighting Square at around 17:00 because there was an atypical performance by Children at that time.

In detail, the males' usage of this square normally has three peak times which are at around 11:00, 17:00 and 20:00. From 7:00 to 9:00, the number of male users is fairly low and stable; from 9:00 to 11:00, the number presents a significant increase; from 11:00 to 20:00, the number of male users undulates with two usage low-points which are at 14:00 and at 19:00; after 20:00, the number of male users presents an obvious downward trend until 24:00.

- The significant usage period across a day by male users in this square normally starts from 9:00 and finishes by 23:00, besides the exception of the rainy period.

Female Usage Features:

Based on the analysis of the curve's diagrams (see Appendix A figure 1.6) which presents the evolving pattern of the number of female users across the six days, three characteristics of females' usage in Lighting Square are discovered as follows:

- Similar to the usage trend of male users, the females' usage patterns across weekdays and the weekend appear similar, but with more females using Lighting Square at the weekend.
- The females' usage patterns across the six observation days appear similar, apart from three exceptions that are; after 14:00 on Jan 26th 2013, at around 11:00 on Jan 31st 2013, and at around 17:00 on 31st Jan 2013. This is similar to the usage patterns of the male users. On Jan 26th, the number of female users presented a significant decrease after 12:00 and nearly no usage after 14:00, because it was cloudy from 12:00 and started raining by 14:00. On 31st Jan 2013, it appeared that there were more than a normal day's female users using Lighting Square at around 11:00 and 17:00, because there was an atypical company collective gathering at 11:00 and there was an atypical Children's performance at around 17:00.

In detail, the females' usage of this square on Jan 22nd 2013 also has three peak times which are at 11:00, 17:00 and 20:00. From 7:00 to 11:00, the number of female users presents a linear increasing trend; from 11:00 to 20:00, the number of female users presents a fluctuation with two usage low-points and three usage peak points; from 20:00 to 24:00, the number of female users presents a linear decreasing trend with the number of people declining.

- The significant usage period across a day by female users normally starts from 09:00 and finishes by 22:00 besides the exception of the rainy period.

Conclusion:

Base on the crosswise comparison of the three squares, it is found that in the recreation squares in Guangzhou, a number of features of the usage by gender exist. These are:

- In most cases, both genders present similar trends throughout a day.
- Both male users and female users present similar usage trends throughout the week to that at the weekend, apart from the fact that the usage of both genders shows an increase at the weekend.
- Male users present a slightly longer duration of usage time than that of the female users by leaving the recreation squares later.
- Stimuli can significantly affect the usage for both genders. When the stimuli is positive, such as a performance, then the usage of both genders presents a significant increase; and when the stimuli is negative, such as bad weather, then the usage of both genders presents a significant decrease. This implies that the affordance of the recreation squares could significantly affect the usage by both genders.
- Usage peak times for both genders exist. In the different recreation squares, the exact times could differ, but the usage peak periods are similar, which could be summarised as being: at around 11:00 in the morning, at around 16:00 in the afternoon, and at around 21:00 in the evening.

2. Differences by age

Hero Square

(Day 1-Day 6)

(Jan 8th 2013-Tuesday, weather: 9°C-17°C, cloudy, slightly windy, and dry;

Jan 10th 2013-Thursday, weather: 9°C-14°C, cloudy, slightly windy, and dry;

Jan 12th 2013-Saturday, weather: 11°C-16°C, cloudy, slightly windy, and dry;

Jan 15th 2013-Tuesday, weather: 10°C-20°C, fine, slightly windy, and dry;

Jan 17th 2013-Thursday, weather: 8°C-19°C, fine -cloudy, slightly windy, and dry;

Jan 19th 2013-Saturday, weather: 12°C-18°C, cloudy, slightly windy, and dry)

Based on the analysis of the curve's diagrams (see Appendix A figure 1.7-1.12) which present the evolving pattern of the number of users in different age groups across the six days in Hero Square, the usage features of each age group are shown as follows:

0-3 Year Old Users (see Appendix A figure 1.7):

- The usage by the 0-3 year old users presents a similar trend across the six days in Hero Square which includes the following two key points:
 1. They usually use Hero Square in pushchairs accompanied by their parent(s) or

grandparent(s), which starts from around 10:00 and finishes by around 22:00 with fluctuating usage.

2. They prefer to use the square in the late morning and afternoon, particularly at around 11:00 and between 15:00 and 17:00.
- They present a similar usage during the week and at the weekends, besides an exception at 11:00 on Jan 12th 2013 when there was an organized health promotion event.

4-12 Year Old Users (see Appendix A figure 1.8):

- The usage by the 4-12 year old users presents a similar trend across the six days in Hero Square which includes the following two key points:
 1. They usually use Hero Square accompanied by their parent(s) or grandparent(s) to play in the square, with or without toys (e.g. rollerblades, skateboards, balls and so on), which starts from around 10:00 and finishes by around 23:00, with marked fluctuations.
 2. They present their active usage of Hero Square in the late morning and late afternoon, and non-active usage in the evening. Furthermore, they prefer to use this square during two time periods, these are at around 11:00, and between 15:00 and 17:00.
- They present a higher usage at the weekend than that of during the week at most times of day.

13-18 Year Old Users (see Appendix A figure 1.9):

- The usage by the 13-18 year old users presents a similar trend across the six days in Hero Square which includes the following two key points:
 1. They prefer to use Hero Square in groups, and usually prefer to start using Hero Square from 12:00 and finish by 24:00 with a gradually increasing usage through a day.
 2. They present their active usage of Hero Square in the late afternoon and evening, and non-active usage in the morning.
- They present a longer and higher usage of Hero Square at the weekend than that of during the week.

19-24 Year Old Users (see Appendix A figure 1.10):

- The usage by the 19-24 year old users presents an inconsistent usage trend across the six days in Hero Square, but this does still show the following three characteristics:
 1. In general, they prefer to use Hero Square in groups, and present a limited usage of it

throughout a day except for some special situations when there are organised collective activities or informal organised group activities (skateboarding together). This implies that formal/informal organised group activities could effectively attract people aged between 19 and 24 to use the squares.

2. They usually present a gradually increasing usage of Hero Square throughout a day, except for special conditions, which implies that their preferred usage time is in the evening (between 19:00 and 22:30).
3. They do not present an obvious difference in their usage between the week and at the weekend, in normal situations.

25-64 Year Old users (see Appendix A figure 1.11):

- The usage by the 25-64 year old users across the six days in Hero Square shows that they have different usage trends between the week and the weekend, which are summarised as follows:
 1. During the week, they start using Hero Square from about 7:00 and finish at around 24:00 with a gradually increasing usage in the morning, a relatively stable usage in the afternoon with obvious usage fluctuations then. Their peak usage during the week is at around 21:00 because a number of female users in this age range come to participate in square dancing at around this time.
 2. At the weekend, they start using Hero Square, also from 7:00, and also finish using by around 24:00, but with obvious fluctuations throughout a day. They have three preferred usage time periods at the weekend, which are between 10:00 and 12:00 with a peak at 11:00, between 15:00 and 17:00 with a peak at 16:00, and between 20:00 and 22:00 with a peak at 21:00.

65+ Year Old Users (see Appendix A figure 1.12):

- The usage by the 65+ year old users presents a similar trend across the six days in Hero Square which mainly includes the following two key points:
 1. They usually use Hero Square, starting from 7:00 and finish by 22:00 with a fluctuating low usage throughout a day.
 2. They present four preferred usage time periods which are at 7:30 (for morning exercises), 11:00 (for accompanying their grandchildren), between 15:00 and 16:00 (again, for accompanying their grandchildren), and finally, from 20:00 to 21:00 (for square dancing).

- They do not present a significant usage difference between the week and the weekend.

In summary:

- In general, the 0-3, 4-12, 13-18, 19-24, and the 65+ year old users all present a limited usage of Hero Square throughout a day; while the 25-64 year old users present a relatively higher usage of Hero Square across a day.
- In general, different users in the different age ranges present different preferred usage times in Hero Square. In summary, 0-3 year old users mainly use the square in the morning at around 11:00, and in the afternoon between 15:00 and 17:00; the 4-12 year old users mainly use the square in the morning at around 11:00 and in the afternoon between 15:00 and 17:00; the 13-18 year old users mainly use the square in the late afternoon and evening; the 19-24 year old users mainly use Hero Square in the evening; the 65+ year old users mainly use the square in the early morning at around 7:30 and again at 11:00, in the afternoon between 15:00 and 16:00, and in the evening between 20:00 and 21:00; while the 25-64 year old users mainly use the square in the evening at around 21:00.
- The users aged 0-3, 19-24, and 65+ years old do not present a significant difference in their usage between the week and the weekend; while the users aged 4-12, 13-18, and 25-64 years old present differences in their usage between the week and the weekend. This gives an indication as to which groups of users are more sensitive to weekends in their usage of Hero Square.

Flower City Square - Water Fountain Square

(Day 1-Day 6)

(Jan 22nd 2013-Tuesday, weather: 16°C-21°C, overcast, slightly windy, and dry;

Jan 24th 2013-Thursday, weather 13°C-23°C, cloudy, slightly windy, and dry;

Jan 26th 2013-Saturday, weather 11°C-21°C, cloudy-rain, slightly windy, and moist;

Jan 29th 2013-Tuesday, weather 10°C-22°C, cloudy-fine, slightly windy, and dry;

Jan 31st 2013-Thursday, weather 13°C-23°C, cloudy, slightly windy, and dry;

Feb 2nd 2013-Saturday, weather: 15°C-25°C, fine cloudy, slightly windy, and dry)

Based on the analysis of the curve's diagrams (see Appendix A figure 1.13-1.18) which present the evolving pattern of the number of users in different age groups across the six days in Water Fountain Square, the usage features of each age group are shown as follows:

0-3 Year Old Users (see Appendix A figure 1.13):

- The 0-3 year old users present nearly no usage of Water Fountain Square at most times of a day, with three subtle preferred usage time periods which are around 11:00, between 16:05 and 16:15, and between 20:05 and 20:15.

4-12 Year Old Users (see Appendix A figure 1.14):

- The usage by the 4-12 year old users presents a similar trend across the six days in Water Fountain Square which includes the following two key points:
 1. They present a fairly low usage of Water Fountain Square throughout a day except for three time periods (16:05 to 16:15, 20:05 to 20:15, and between 21:05 and 21:15) when there are music fountain performances.
 2. They show a similar usage of Water Fountain Square between the week and the weekend, besides an exception period when it was rainy.

13-18 Year Old Users (see Appendix A figure 1.15):

- The 13-18 year old users present nearly no usage of Water Fountain Square at most times of a day, with three exceptions, which are between 16:05 and 16:15, 20:05 to 20:15, and from 21:05 to 21:15 when there are music fountain performances.

19-24 Year Old Users (see Appendix A figure 1.16):

- Similar to the 13-18 year old users, the 19-24 year old users also present no usage of Water Fountain Square at most times of day, with three exceptions which are between 16:05 and 16:15, 20:05 to 20:15, and again between 21:05 and 21:15 when there are music fountain performances.

25-64 Year Old Users (see Appendix A figure 1.17):

- The usage by the 25-64 year old users presents a similar trend across the six days in Water Fountain Square, which includes the following two key points:
 1. They present a certain but not active usage of Water Fountain Square at most times of day, besides three time periods which are, between 16:05 and 16:15, 20:05 to 20:15, and again, between 21:05 and 21:15 when there are music fountain performances.
 2. The usage of the 25-64 year old users at the weekend presents a greater usage level than that of during the week, at the times when there are no music fountain performances.

- There was no usage by the 25-64 year old users after 15:00 on Jan 26th, 2013 when it was raining.

65+ Year Old Users (see Appendix A figure 1.18):

- The 65+ year old users present nearly no usage of Water Fountain Square at most times of a day, but appear to have a slightly higher usage during two time periods (between 16:05 and 16:15, and again between 21:05 and 21:15) when there are music fountain performances.

In Summary:

- In general, the 0-3, 13-18, 19-24, and the 65+ year old users all present nearly no usage of Water fountain Square at most times throughout a day, while the 4-12 and the 25-64 year old users present a slight higher usage of Water Fountain Square throughout a day.
- All of the different age ranges of users present an obvious increased usage at the times when there are music fountain performances, which implies that the music fountain performance is a positive stimuli for the usage of the recreation square by people.
- All of the different age ranges of users presented no usage of Water fountain Square when it was rainy, which implies that the weather is a factor which could significantly affect the people's usage of Water Fountain Square.

Flower City Square - Lighting Square

(Day 1-Day 6)

(Jan 22nd 2013-Tuesday, weather: 16°C-21°C, overcast, slightly windy, and dry;

Jan 24th 2013-Thursday, weather: 13°C-23°C, cloudy, slightly windy, and dry;

Jan 26th 2013-Saturday, weather: 11°C-21°C, cloudy-rain, slightly windy, and moist;

Jan 29th 2013-Tuesday, weather: 10°C-22°C, cloudy-fine, slightly windy, and dry;

Jan 31st 2013-Thursday, weather: 13°C-23°C, cloudy, slightly windy, and dry;

Feb 2nd 2013-Saturday, weather: 15°C-25°C, fine-cloudy, slightly windy, and dry)

Based on the analysis of the curve's diagrams (see Appendix A figure 1.19-1.24) which present the evolving pattern of the number of users in different age groups across the six days in Lighting Square, the usage features of each age group are shown as follows:

0-3 Year Old Users (see Appendix A figure 1.19):

- The usage by the 0-3 year old users presents a regular trend across the six days in Lighting

Square which includes the following two key points:

1. They usually use this square in pushchairs accompanied by their parent(s) or grandparent(s). Their usage normally starts from around 10:00 and finishes by around 18:00 with a fluctuation in numbers.
 2. They prefer to use the square in the late morning and afternoon, particularly between 11:00 and 12:00, and then again between 16:00 and 17:00.
- They present a similar usage between the week and the weekend, besides an exception of after 14:00 on Jan 26th 2013 when it was raining.

4-12 Year Old Users (see Appendix A figure 1.20):

- The usage by the 4-12 year old users presents a regular trend across the six days in Lighting Square which includes the following two key points besides special situations:
 1. They usually use this square accompanied by their parent(s) or grandparent(s), starting from around 9:00 and finishing by around 23:00 with a fluctuation in numbers.
 2. They prefer to use the square in the late morning, afternoon and evening, particularly between 10:00 and 12:00, 16:00 and 17:00, and then between 20:00 and 21:00.
- They present a similar usage trend between the week and weekend, besides special situations, but with a higher usage at the weekend than that of during the week.
- They presented a significant increase in usage at around 17:00 on Jan 31st 2013 when there was an atypical performance by children of this age; while they presented a significant decreasing usage after 14:00 on Jan 26th 2013 when it was raining.

13-18 Year Old Users (see Appendix A figure 1.21):

- The 13-18 year old users presents a relatively low usage (nearly no one present) of the Lighting Square throughout the day whether during the week or at the weekend.

19-24 Year Old Users (see Appendix A figure 1.22):

- The usage by the 19-24 year old users presents a similar and regular trend across the six days in Lighting Square, which mainly includes the following two key points, besides the special situation:
 1. They present a usage of Lighting Square, starting from around 9:00 and finishing by around 22:00, with a low usage in the morning and a slightly higher usage in the afternoon

and evening.

2. They present one preferred usage time which is at around 17:00 within a day.
- They do not present an obvious difference in their usage between the week and the weekend in normal situations, besides an exception of 13:00 on Jan 26th 2013 when it was going to rain.

25-64 Year Old Users (see Appendix A figure 1.23):

- The usage by the 25-64 year old users presents a regular trend across the six days in Hero Square which mainly includes the following two key points, besides the special situations:
 1. They present a usage of Lighting Square, starting from around 7:00 and finishing by around 24:00, with a gradual increase in usage in the morning until 11:00, then a subtly fluctuating usage in the afternoon and evening.
 2. They present two preferred usage time periods which are between 11:00 and 12:00 in the morning, and between 20:00 and 21:00 in the evening.
- They do not present an obvious difference in their usage between the week and the weekend in normal situations, besides an exception of 14:00 on Jan 26th 2013 when it was raining and another exception of around 17:00 when there was an atypical children's performance in Lighting Square.

65+ Year Old Users (see Appendix A figure 1.24):

- The usage by the 65+ year old users presents a fairly low usage across the six days in Lighting Square throughout a day whether during the week or the weekend.

In summary:

- In general, the 0-3, 13-18, and the 65+ year old users all present a fairly low usage of Lighting Square throughout a day whether during the week or the weekend; the 19-24 and the 4-12 year old users present a slightly higher usage across a day whether during the week or the weekend; and the 25-64 year old users present a dominant usage of Lighting square across a day irrespective of whether during the week or the weekend, especially between 11:00 and 12:00 in the morning and from 20:00 to 21:00 in the evening.
- None of the users' age groups presented any usage of Lighting Square in the afternoon on Jan 26th 2013 when it was raining, which implies the bad weather is a negative factor that will reduce the users' usage of Lighting Square.

Conclusion

Base on the crosswise comparison of the three squares, it is found that in the recreation squares in Guangzhou, a number of features of the usage by age exist. These are:

- Stimuli can significantly affect the usage for all age groups. When the stimuli is positive, such as a performance, the usage of all age groups presents an increase; and when the stimuli is negative, such as bad weather, the usage of all age groups presents a decrease. This implies that the affordance of different recreation squares can significantly affect the usage for all age groups.
- The curve's diagram of Hero Square implies that the users aged 4-12, 13-18, and 25-64 years old are more sensitive to the weekends, while the users aged 0-3, 19-24, and 65+ years old are not.
- Usage peak times for the different age groups exist and are different in the recreation squares, which could be roughly summarised as below:
 1. The users who are aged 65+ mainly use the recreation squares in the early morning (between 7:00 and 8:00) for morning exercises, in the morning between 10:00 and 12:00, and in the afternoon between 14:00 and 18:00 for accompanying their grandchildren to let them play or sunbathe.
 2. The users who are aged 25- 64 years old mainly use the recreation squares between 9:00 and 23:00 in a day with three usage peak times, which are at around 11:00, between 15:00 and 17:00, and from 20:00 to 21:00 for diverse behaviours.
 3. The users who are aged 0- 3 years old mainly use the square at around 11:00 to 12:00, and between 15:00 and 17:00 when the sunshine is good. While the users who are aged 4-12 years old mainly use the recreation squares at around 11:00, between 16:00 and 17:00, and between 20:00 and 21:00. These latter two age groups share coincidental similarities with regards to peak usage times.
 4. The users who are age 13-18 years old present different preferred usage times across the three recreation squares.

3. Differences by group

Hero Square

(Day 1-Day 6)

(Jan 8th 2013-Tuesday, weather: 9°C-17°C, cloudy, slightly windy, and dry;

Jan 10th 2013-Thursday, weather: 9°C-14°C, cloudy, slightly windy, and dry;

Jan 12th 2013-Saturday, weather: 11°C-16°C, cloudy, slightly windy, and dry;

Jan 15th 2013-Tuesday, weather: 10°C-20°C, fine, slightly windy, and dry;

Jan 17th 2013-Thursday, weather: 8°C-19°C, fine -cloudy, slightly windy, and dry;

Jan 19th 2013-Saturday, weather: 12°C-18°C, cloudy, slightly windy, and dry)

Based on the analysis of the curve's diagrams (see Appendix A figure 1.25-1.28) which present the changing pattern of the number of users in different participation groups across the six days in Hero Square, the usage features of each user group have been discovered to be as follows:

Single Users (see Appendix A figure 1.25):

- The usage by single users across the six days presents a similar and regular trend, which includes the following two key points:
 1. The usage by this group presents a stable usage pattern between 7:00 and 19:00, and a significant fluctuation between 19:00 and 24:00 with sharp increase in numbers from 19:00 to 21:00 and a corresponding sharp decrease from 21:00 to 22:00.
 2. The usage peak time of this group is at around 21:00 when there are a few square dancing participants (predominantly female) coming to use Hero Square.
 3. This group of users presents certain usage of Hero Square, starting from 7:00 and finishing at 24:00, with the preferred usage time in the evening.
- The usage by single users at the weekend is slightly greater than that during the week at most times before 19:00.

Couple Users (see Appendix A figure 1.26):

- The usage by couple users across the six days also presents a similar trend, which includes the following two key points:
 1. The usage by this group is fairly low in Hero Square across a day with the maximum number of users being below 18 in normal situations.
 2. This group of users presents their usage of Hero Square normally starting from 11:00 and finishing at 24:00, with the preferred usage time being in the late afternoon and the evening (between 15:00 and 22:00).
- The usage by couple users at the weekend presents a similar usage level to that of during the week at most times of a day.

Friend(s) Users (see Appendix A figure 1.27):

- The usage by friend(s) users across the six days presents obvious fluctuations throughout the day (from 7:00 to 24:00) with two usage peaks that are at 16:00 and 21:00.
- The usage by friend(s) users at the weekend is greater than that during the week at most times of a day besides an exception - Jan 17th 2015.
- Except for one weekend day (Jan 19th 2013) and a weekday (Jan 17th 2015), the usage by friend(s) users in Hero Square is limited to a maximum number of people being below 29.
- The degree of usage by the friend(s) users across different days appears to show an obvious oscillation sometimes.

Family Users (see Appendix A figure 1.28):

- The usage by family users across the six days presents a similar and regular trend, which includes the following two key points:
 1. The usage by this group presents a fluctuating usage pattern throughout a day with two usage peaks which are at around 11:00 and between 15:00 and 17:00, when there are a few parents/grandparents who come to use Hero Square to accompany their children/babies.
 2. The usage by this group appears to be active throughout a day compared to the other users' group. They normally starts to use this square from around 9:00 and finishes at around 23:00 with the preferred usage time in the late morning and afternoon.
- The usage by family users shows a significantly higher number of users at the weekend than during the week at most times of a day. They also present slightly longer usage hours at the weekend than those of during the week.

In Summary:

- In general, in Hero Square, the family users and single users dominate the usage of the square, while the couple users and the friend(s) users' group only moderately utilise the square during a day.
- In detail, family users dominate the square in the morning (between 10:00 and 12:00) and the afternoon (between 14:00 and 17:00), while single users dominate the square in the evening (between 20:00 and 22:00) during a normal day.
- Out of these four different user types, only the family users present an obvious difference on their usage of squares between the week and the weekend.

Flower City Square - Water Fountain Square

(Day 1-Day 6)

(Jan 22nd 2013-Tuesday, weather: 16°C-21°C, overcast, slightly windy, and dry;

Jan 24th 2013-Thursday, weather 13°C-23°C, cloudy, slightly windy, and dry;

Jan 26th 2013-Saturday, weather 11°C-21°C, cloudy-rain, slightly windy, and moist;

Jan 29th 2013-Tuesday, weather 10°C-22°C, cloudy-fine, slightly windy, and dry;

Jan 31st 2013-Thursday, weather 13°C-23°C, cloudy, slightly windy, and dry;

Feb 2nd 2013-Saturday, weather: 15°C-25°C, fine cloudy, slightly windy, and dry)

Based on the analysis of the curve's diagrams (see Appendix A figure 1.29-1.32) which present the changing pattern of the number of users in different participation groups across the six days in Water Fountain Square, the usage features of each user group have been discovered to be as follows:

Single Users (see Appendix A figure 1.29):

The usage by single users presents a similar trend across the six days in Water Fountain Square with the following two main features:

- They present a relatively low usage of Water Fountain Square throughout a day except for three time periods when there are music fountain performances which are between 16:05 and 16:15, 20:05 to 20:15, and from 21:05 to 21:15. If ranking these three time periods according to the number of single users, the decreasing order is, between 20:05 and 20:15, 16:05 to 16:15, and finally, from 21:05 to 21:15.
- The number of single users is slightly higher at the weekend than it is during the week at most times of day, besides an exception - Jan 26th 2013 when there was bad weather.

Couple Users (see Appendix A figure 1.30):

- The usage by couple users presents a similar trend across the six days in Water Fountain Square with the following three main features:
 1. There is an extremely low usage throughout a day except for three time periods when there are music fountain performances which are between 16:05 and 16:15, from 20:05 to 20:15, and from 21:05 to 21:15.
 2. Similar to the usage pattern of single users, the decreasing order of the three usage peak times of couple users are between 20:05 and 20:15, between 16:05 and 16:15, and finally, between 21:05 and 21:15.

3. The contrast between the number of couple users using the square when there are music fountain performances and the times when there aren't, is conspicuous.
- There is no significant distinction on the degree of usage between the week and at the weekend at most times of a day, except for two time periods which are from 16:20 to 20:00 and after 21:20. Meanwhile there was no usage after 14:00 on Jan 26th 2013 due to the rainy weather.

Friend(s) Users (see Appendix A figure 1.31):

- They represent a fairly low usage in the morning and afternoon, and a slightly higher usage in the evening. Similar to the other types of users, their usage peak times are also in the periods when there are music fountain performances.
- Sometimes, there are exceptional usage patterns when there are unusual situations, such as a group of people taking group photographs at 11:00 on Jan 26th, and a group of people rehearsing group dance at 14:00 on Jan 31st. Also, it is found that there were very few friend(s) users in this square when it was raining.
- The friend(s) users have no significant difference on their usage of Water Fountain Square between the weekend and during the week.

Family Users (see Appendix A figure 1.32):

- They present a certain usage of Water Fountain Square and prefer to use it in the late morning (at around 11:00), late afternoon (between 15:00 and 17:00) and the evening (between 19:00 and 21:20), especially in the periods when there are music fountain performances.
- There is no significant difference on the usage by the family users between the weekend and during the week.
- There are no family users using the square after 14:00 on Jan 26th 2013 due to the rainy weather.

In summary:

- In Water Fountain Square, the four different types of users (single users, couple users, friend(s) users and family users) present similar usage trends which mainly includes the following four features:
 1. They all show an obvious increase in usage during the periods when there are music fountain performances (between 16:05 and 16:15, 20:05 to 20:15 and from 21:05 to

21:15), which implies that the music fountain performance is a positive stimuli to attract the public to use the recreation square.

2. Throughout a day, in Water Fountain Square, the single users and couple users appear to have a fairly low usage, except for the three time periods for music fountain performances; while the friend(s) users and family users show a slightly higher usage compared to these other two groups of users. Additionally, the preferred usage times of friend(s) users are in the late afternoon (between 15:00 and 17:00) and the evening (between 19:00 and 21:20); while the preferred usage times of family users are in the morning (around from 10:00 to 12:00), the late afternoon (between 15:00 and 17:00), and in the evening (between 19:00 and 21:20).
3. All groups display no usage of this square during rainy weather, which implies that the weather conditions have a significant impact on the public's usage of this recreation square.
4. There are no obvious differences on the usage of all these four types of users between the week and weekend.

Flower City Square - Lighting Square

(Day 1-Day 6)

(Jan 22nd 2013-Tuesday, weather: 16°C-21°C, overcast, slightly windy, and dry;

Jan 24th 2013-Thursday, weather: 13°C-23°C, cloudy, slightly windy, and dry;

Jan 26th 2013-Saturday, weather: 11°C-21°C, cloudy-rain, slightly windy, and moist;

Jan 29th 2013-Tuesday, weather: 10°C-22°C, cloudy-fine, slightly windy, and dry;

Jan 31st 2013-Thursday, weather: 13°C-23°C, cloudy, slightly windy, and dry;

Feb 2nd 2013-Saturday, weather: 15°C-25°C, fine cloudy, slightly windy, and dry)

Based on the analysis of the curve's diagrams (see Appendix A figure 1.33 – Appendix A figure 1.36) which present the changing pattern of the number of users in different participation groups across the six days in Lighting Square, the usage features of each user group have been discovered to be as follows:

Single Users (see Appendix A figure 1.33):

- The usage by single users presents a similar trend across the six days in Lighting Square: Their usage normally starts at 7:00 and finishes by 24:00, and is fairly stable throughout a day especially in the period between 7:00 and 22:00.
- There is no significant difference in their usage of Lighting Square between the week and the

weekend.

- There was no usage by single users in Lighting Square after 17:00 on Jan 26th 2013 when it rained heavily.

Couple Users (see Appendix A figure 1.34):

- The usage by couple users presents a similar trend across the six days in Lighting Square. Their usage normally starts at 10:00 and finishes by 24:00 with a relatively low degree but stable usage throughout a day. The exceptions to this being from 17:00 on Jan 31st 2013 when there was a children's dancing performance, and after 15:00 on Jan 26th 2013 when it was raining.
- There is no significant difference on their usage of Lighting Square between the week and the weekend except for the evening (after 19:00).

Friend(s) Users (see Appendix A figure 1.35):

- The usage by friend(s) users presents a similar trend across the six days in Lighting Square. Their usage normally starts at 7:30 and finishes by 24:00, and is stable at most times of a day with three preferred usage times which are between 10:00 and 13:00, 15:00 to 17:00 and from 20:00 to 21:00.
- The usage by friend(s) users shows an obvious increase in numbers when there are performances or organised activities, e.g. at 17:00 on Jan 31st 2013 when there was an atypical children's dancing performance, at 11:00 on Jan 24th when there was an atypical collective activity of a company, and again at 11:00 on Jan 31st when there was an atypical inspecting and studying tour.
- There is no obvious difference on their usage of Lighting Square between the week and the weekend. There was no usage of friend(s) users in Lighting Square after 14:00 on Jan 26th 2013 when it started to rain.

Family Users (see Appendix A figure 1.36):

- The usage by family users presents a similar trend across the six days in Lighting Square as follows:
 1. Their usage normally starts at 9:00 and finishes by 24:00 with distinct fluctuations throughout a day.
 2. They have three usage peak time periods which are between 10:00 and 13:00, 15:00 to

18:00, and from 20:00 to 22:00.

- The usage by family users in Lighting Square at the weekend is slightly higher than that of during the week.
- The usage by family users presented an obvious increase at around 17:00 on Jan 31st 2013 when there was an atypical children's dancing performance, and an obvious decreasing after 12:00 and no usage after 14:00 on Jan 26th 2013 when it clouded over and rained.

In Summary:

- In Lighting Square, the four types of users present different usage trends and degrees of usage. Furthermore, the single users and couple users present the relatively low and stable usage of this square, except for during the unusual situations; while the friend(s) users and family users present a higher usage of this square.
- In this square, the friend(s) users prefer to use it in three periods which are around 10:00 to 13:00, 15:00 to 17:00, and between 20:00 and 21:00; while family users prefer to use it in similar but not exact periods, which are between 10:00 and 13:00, 15:00 and 18:00, and from 20:00 to 22:00.
- Only family users present an obvious difference in their usage level between the week and weekend.
- The usage by these four types of users are all influenced by stimuli such as performances, organised activities, and changeable weather. The positive stimuli, e.g. interesting performances can act to attract and hold more people to use the recreation square; while the negative stimuli can significantly reduce their usage.

Conclusion

Based on the crosswise comparison of the three squares, it is found that in the recreation squares in Guangzhou, a number of features of the usage by participation groups exist. These are:

- Similar to the impacts on different genders and different age groups, stimuli can significantly affect the usage by all participation groups. When the stimuli is positive, the usage of all participation groups shows an increase; and when the stimuli is negative, their usage shows a decrease. This implies that the affordance of different recreation squares can significantly affect the usage for all the participation groups.
- It is found that the usage amongst different participation groups presents different usage trends and degrees of usage throughout a day in each recreation square. Meanwhile their

relative sort orders in line with their respective degrees of usage in different recreation squares are also different. In Hero Square, the order is roughly, family users, single users, friend(s) users, and then couple users; while, in Water Fountain, the order is roughly, friend(s) users, family users, couple users, and then single users; and in Lighting Square, the order is roughly, family users, friend(s) users, single users, and then couple users.

- It is found that the usage amongst the different participation groups presents different preferred usage times. This can be roughly summarised as: family users mainly use the recreation squares at roughly 11:00 in the morning, between 15:00 and 17:00 in the afternoon, and again from 20:00 until 21:00 in the evening; friend(s) users mainly use the recreation squares at roughly 16:00 in the afternoon and again at 21:00 in the evening; single users present a relatively stable level of usage throughout a day except for special situations, and couple users mainly use the recreation squares between roughly 15:00 and 21:00 in a day.

6.1.2 The Diversity of Behaviours in the Recreation Squares in Guangzhou

Behaviour types

According to the observation of Behaviour Panoramas and Behaviour Closeshots, there are 37 types of behaviours which occur in Hero Square, 24 types which occur in Flower City Square - Water Fountain Square, and 34 types which occur in Flower City Square - Lighting Square. Inspired by Gehl's (1987) theory of activities' classification, these behaviours are classified into two categories in terms of the duration of each behaviour, which are "passing-through" and "staying-in". The following three behaviour lists (see table 6.1, 6.2, 6.3) are generated based on the above classification to explicitly demonstrate the behaviours which occur in each square selected in Guangzhou.

BEHAVIOUR LIST - HERO SQUARE

| NO. | BEHAVIOUR | CODE |
|------------|------------------------------------------------------------------------------------|-------------|
| A | Passing-through | A |
| 1 | Passing through on foot | a1 |
| 2 | Passing through by bicycle | a2 |
| B | Staying-in | B |
| 3 | Sitting and reading | b1 |
| 4 | Using/ playing with phone or personal business | b2 |
| 5 | Sitting and smoking in a daze | b3 |
| 6 | Sitting and watching (people, plants, sculptures, temporary performance platform) | b4 |
| 7 | Sitting with a pram | b5 |
| 8 | Sitting and eating | b6 |
| 9 | Being intimate | b7 |
| 10 | Standing and watching (people, plants, sculptures, temporary performance platform) | b8 |
| 11 | Standing with a pram | b9 |
| 12 | Strolling | b10 |
| 13 | Strolling with a pram | b11 |
| 14 | Strolling with a dog | b12 |
| 15 | Square patrolling | b14 |
| 16 | Square cleaning by sanitation worker | b15 |
| 17 | Rag-picker strolling | b16 |
| 18 | Running and playing, using open area | b17 |
| 19 | Playing around on bicycle | b18 |
| 20 | Rollerblading | b19 |
| 21 | Skateboarding | b20 |
| 22 | Playing BMX acrobatics | b21 |
| 23 | Playing with toy on the ground | b22 |
| 24 | Playing badminton | b23 |
| 25 | Playing with a ball | b25 |
| 26 | Street dancing (in group) | b26 |
| 27 | Exercising | b27 |
| 28 | Square dancing (in group) | b28 |
| 29 | Doing spontaneous business | b29 |
| 30 | Square facility maintenance (temporary performance platform, plantings) | b30 |
| 31 | Health consulting | b31 |
| 32 | Rehearsing collective activity | b35 |
| 33 | Standing and chatting | b34 |
| 34 | Sitting and chatting | b36 |
| 35 | Doing questionnaire survey | b37 |
| 36 | Taking personal photos | b38 |
| 37 | Handing out free newspapers | b40 |

Table 6.1 Behaviour list of Hero Square

BEHAVIOUR LIST - WATER FOUNTAIN SQUARE

| NO. | BEHAVIOUR | CODE |
|------------|---------------------------------------------------------|-------------|
| A | Passing-through | A |
| 1 | Passing through on foot | a1 |
| 2 | Passing through by bicycle | a2 |
| 3 | Passing through by vehicle (square security) | a3 |
| B | Staying-in | B |
| 4 | Sitting and reading | b1 |
| 5 | Using/ playing with phone or personal business | b2 |
| 6 | Sitting and smoking in a daze | b3 |
| 7 | Sitting and watching (people, plants, water fountain) | b4 |
| 8 | Sitting with a pram | b5 |
| 9 | Sitting and eating | b6 |
| 10 | Standing and watching (people, plants, water fountain) | b8 |
| 11 | Standing with a pram | b9 |
| 12 | Strolling with a pram | b11 |
| 13 | Strolling with a dog | b12 |
| 14 | Square cleaning by sanitation worker | b15 |
| 15 | Running and playing, using open area | b17 |
| 16 | Playing around on bicycle | b18 |
| 17 | Playing BMX acrobatics | b21 |
| 18 | Taking group photos | b24 |
| 19 | Doing spontaneous business | b29 |
| 20 | Square facility maintenance (water fountain, plantings) | b30 |
| 21 | Standing and chatting | b34 |
| 22 | Rehearsing collective activity | b35 |
| 23 | Sitting and chatting | b36 |
| 24 | Taking personal photos | b38 |

Table 6.2 Behaviour list of Flower City Square - Water Fountain Square

BEHAVIOUR LIST - LIGHTING SQUARE

| NO. | BEHAVIOUR | CODE |
|------------|--------------------------------------------------------------|-------------|
| A | Passing-through | A |
| 1 | Passing through on foot | a1 |
| 2 | Passing through by bicycle | a2 |
| 3 | Passing through by vehicle (square security) | a3 |
| B | Staying-in | B |
| 4 | Sitting and reading | b1 |
| 5 | Using/ playing with phone or personal business | b2 |
| 6 | Sitting and smoking in a daze | b3 |
| 7 | Sitting and watching (people, plants, temporary sculptures) | b4 |
| 8 | Sitting with a pram | b5 |
| 9 | Sitting and eating | b6 |
| 10 | Being intimate | b7 |
| 11 | Standing and watching (people, plants, temporary sculptures) | b8 |
| 12 | Standing with a pram | b9 |
| 13 | Strolling | b10 |
| 14 | Strolling with a pram | b11 |
| 15 | Strolling with a dog | b12 |
| 16 | Square cleaning by sanitation worker | b15 |
| 17 | Running and playing, using open area | b17 |
| 18 | Playing around on bicycle | b18 |
| 19 | Rollerblading | b19 |
| 20 | Skateboarding | b20 |
| 21 | Playing with toy on the ground | b22 |
| 22 | Playing badminton | b23 |
| 23 | Taking group photos | b24 |
| 24 | Playing with a ball | b25 |
| 25 | Exercising | b27 |
| 26 | Doing spontaneous business | b29 |
| 27 | Square facility maintenance (temporary sculpture, plantings) | b30 |
| 28 | Inspecting and studying (in tour) | b32 |
| 29 | Outdoor sketching | b33 |
| 30 | Standing and chatting | b34 |
| 31 | Rehearsing collective activity | b35 |
| 32 | Sitting and chatting | b36 |
| 33 | Taking personal photos | b38 |
| 34 | Sitting/ lying down and sleeping | b39 |

Table 6.3 Behaviour list of Flower City Square - Lighting Square

BEHAVIOUR LIST

| NO. | BEHAVIOUR | CODE |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------|----------|
| A | Passing-through | A |
| 1 | Passing through on foot | a1 |
| 2 | Passing through by bicycle | a2 |
| 3 | Passing through by vehicle (square security) | a3 |
| B | Staying-in | B |
| 4 | Sitting and reading | b1 |
| 5 | Using/ playing with phone or personal business | b2 |
| 6 | Sitting and smoking in a daze | b3 |
| 7 | Sitting and watching (people, plants, water fountain, sculptures, temporary sculptures, temporary performance platform) | b4 |
| 8 | Sitting with a pram | b5 |
| 9 | Sitting and eating | b6 |
| 10 | Being intimate | b7 |
| 11 | Standing and watching (people, plants, water fountain, sculptures, temporary sculptures, temporary performance platform) | b8 |
| 12 | Standing with a pram | b9 |
| 13 | Strolling | b10 |
| 14 | Strolling with a pram | b11 |
| 15 | Strolling with a dog | b12 |
| 16 | Square patrolling | b14 |
| 17 | Square cleaning by sanitation worker | b15 |
| 18 | Rag-picker strolling | b16 |
| 19 | Running and playing, using open area | b17 |
| 20 | Playing around on bicycle | b18 |
| 21 | Rollerblading | b19 |
| 22 | Skateboarding | b20 |
| 23 | Playing BMX acrobatics | b21 |
| 24 | Playing with toy on the ground | b22 |
| 25 | Playing badminton | b23 |
| 26 | Taking group photos | b24 |
| 27 | Playing with a ball | b25 |
| 28 | Street dancing (in group) | b26 |
| 29 | Exercising | b27 |
| 30 | Square dancing (in group) | b28 |
| 31 | Doing spontaneous business | b29 |
| 32 | Square facility maintenance (temporary sculptures, water fountain, temporary lighting sculptures, temporary performance platform, plantings) | b30 |
| 33 | Health consulting | b31 |
| 34 | Inspecting and studying (in tour) | b32 |
| 35 | Outdoor sketching | b33 |
| 36 | Standing and chatting | b34 |
| 37 | Rehearsing collective activity | b35 |
| 38 | Sitting and chatting | b36 |
| 39 | Doing questionnaire survey | b37 |
| 40 | Taking personal photos | b38 |
| 41 | Sitting/ lying down and sleeping | b39 |
| 42 | Handing out free newspapers | b40 |

Table 6.4 Comprehensive behaviour list of the recreation squares

From the analysis of the three behaviour lists above, it can be found that the types and quantity of behaviours across the three different squares have both similarities and differences. The existence of similarities informs us that there are certain universal behaviours occurring across different recreation squares in Guangzhou; while the existence of differences informs us that apart from the universal behaviours, there are also some non-universal behaviours occurring in the different recreation squares in Guangzhou due to some reasons.

Here, the author collected all of the behaviours occurring in the three squares and generated a comprehensive behaviour list (see table 6.4) which may not demonstrate all of the behaviours occurring in the recreation squares in Guangzhou, but at least reveals the usual behaviours in the recreation squares in Guangzhou to a certain extent. This comprehensive behaviour list can directly inform us as to “what do people usually do in the recreation squares in Guangzhou?”

From the analysis of this comprehensive behaviour list, it can be seen that, there are 42 usual typical behaviours occurring currently in recreation squares in Guangzhou, which includes both passing-through behaviours and staying-in behaviours. Furthermore, in the passing-through category, there are three usage behaviours which are respectively passing-through on foot, passing-through by bicycle, and passing-through by vehicle. In the staying-in category, there are 39 various behaviours.

Referring to Gehl’s (1987, p. 9) classification of behaviours which are “necessary activities”, “optional activities”, and “social activities”, the author coded the behaviours on the four behaviours lists and accomplished two achievements. The first achievement is the comparison list of behaviours of the three different squares (see table 6.5); and the second is the classification list of the diverse staying-in behaviours that are occurring in the recreation squares in Guangzhou (see table 6.6).

Based on the analysis of the comparison list of behaviours (table 6.5), two features of the usage behaviours that are occurring in the recreation squares in Guangzhou are revealed as below:

- The three different categories of behaviours (“necessary activities”, “optional activities”, and “social activities”) present an imbalanced pattern in all of the three different recreation squares; however, the hierarchy and the relative ratios of these in each square are similar to each other. This informs us to the existence of imbalanced usage with respect to the behaviour types in the different recreation squares.
- In the “necessary activities” category, the quantity and types of behaviours that are occurring across the three squares are similar. However in the “optional activities” and “social activities”

categories, the quantity and types of behaviours occurring in Hero Square and Lighting Square are similar and more than those in Water Fountain Square. This fact stimulates the reflection of the author. If Gehl's (1987) words, which are that the "optional activities" and especially the "social activities" are determined by the conditions of an environment, can be agreed upon, then a conclusion can be produced. This is that in a recreation square in Guangzhou, the quantity and types of "optional behaviours" and especially "social behaviours", would be significantly affected and determined by the affordance of this recreation square.

| Square Activities | Hero Square (37 types) | Water Fountain Square (23 types) | Lighting Square (33 types) |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Necessary activities | [3 types, 8.1 %] <ul style="list-style-type: none"> • Square patrolling • Square facility maintenance (temporary sculpture, plantings) • Square cleaning by sanitation worker | [2 types, 8.7 %] <ul style="list-style-type: none"> • Square facility maintenance (water fountain, plantings) • Square cleaning by sanitation worker | [2 types, 6.1 %] <ul style="list-style-type: none"> • Square facility maintenance (temporary sculpture, plantings) • Square cleaning by sanitation worker |
| Optional activities | [20 types, 54.1 %] <ul style="list-style-type: none"> • Sitting and reading • Using/ playing with phone or personal business • Sitting and smoking in a daze • Sitting and watching (objects except for people) • Sitting with a pram • Sitting and eating • Standing and watching (objects except for people) • Standing with a pram • Strolling • Strolling with a pram • Strolling with a dog • Rag-picker strolling • Running and playing, using space • Playing around on bicycle • Rollerblading • Skateboarding • Playing BMX acrobatics • Playing with toy on the ground • Exercising • Taking personal photos | [14 types, 60.9 %] <ul style="list-style-type: none"> • Sitting and reading • Using/ playing with phone or personal business • Sitting and smoking in a daze • Sitting and watching (objects except for people) • Sitting with a pram • Sitting and eating • Standing and watching (objects except for people) • Standing with a pram • Strolling with a pram • Strolling with a dog • Running and playing, using open space • Playing around on bicycle • Playing BMX acrobatics • Taking personal photos | [20 types, 60.6 %] <ul style="list-style-type: none"> • Sitting and reading • Using/ playing with phone or personal business • Sitting and smoking in a daze • Sitting and watching (objects except for people) • Sitting with a pram • Sitting and eating • Standing and watching (objects except for people) • Standing with a pram • Strolling • Strolling with a pram • Strolling with a dog • Running and playing, using open space • Playing around on bicycle • Rollerblading • Skateboarding • Playing with toy on the ground • Exercising • Outdoor sketching • Taking personal photos • Sitting/ lying down and sleeping |
| Social activities | [14 types, 37.8 %] <ul style="list-style-type: none"> • Sitting and watching (people) • Being intimate • Standing and watching (people) • Playing badminton • Playing with a ball • Street dancing (in group) • Square dancing (in group) • Doing spontaneous business • Health consulting • Rehearsing collective activity • Standing and chatting • Sitting and chatting • Doing questionnaire survey • Handing out free newspapers | [7 types, 30.4 %] <ul style="list-style-type: none"> • Sitting and watching (people) • Standing and watching (people) • Doing spontaneous business • Rehearsing collective activity • Standing and chatting • Sitting and chatting • Taking group photos | [11 types, 33.3 %] <ul style="list-style-type: none"> • Sitting and watching (people) • Being intimate • Standing and watching (people) • Playing badminton • Taking group photos • Playing with a ball • Doing spontaneous business • Inspecting and studying (in tour) • Standing and chatting • Sitting and chatting • Rehearsing collective activity |

Table 6.5 Comparison list of staying-in behaviours across the three squares

Finally, a new classification list of the staying-in behaviours (see table 6.6) is generated, based on coding the behaviours on the comprehensive behaviour list (see table 6.4), by three types (“necessary behaviours”, “optional activities”, “social activities”). From the analysis of the new classification list, two issues become clear. The first issue is that in the three recreation squares, the behaviours that belong to the “necessary activities” category normally consist of three, which are all relevant to the square’s maintenance; the behaviours which belong to the “optional activities” and “social activities” categories are respectively 22 types and 16 types. This draws a clear image of the situation of behaviours which are occurring in the recreation squares in today’s Guangzhou. While the second issue is that, currently in Guangzhou’s recreation squares, “optional activities” dominate the usage, “social activities” comes second, and “necessary activities” comes last. This informs us that the recreation squares are engaged by an imbalanced usage pattern of the behaviours and a need to increase the behaviours that belong to the category of “social activities”. In another word, the social behaviours, which are occurring, are represented by a limited number of types, and this needs to be improved in today’s Guangzhou, which clearly highlights the significance of, and urgency in carrying out this research.

The necessary activities which usually happen in the recreation squares in Guangzhou as following (3 types):

- Square patrolling
- Square facility maintaining (temporary sculpture, water fountain, temporary performance platform, plantings)
- Square cleaning by sanitation

The optional activities which usually happen in the recreation squares in Guangzhou as following (22 types):

- Sitting and reading
- Using/playing with phone or personal business
- Sitting and smoking in a daze
- Sitting and watching (objects except for people)
- Sitting with a pram
- Sitting and eating
- Standing and watching (objects except for people)
- Standing with a pram
- Strolling
- Strolling with a pram
- Strolling with a dog
- Rag-picker strolling

| |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Running and playing, using open area • Playing around on bicycle • Rollerblading • Skateboarding • Playing BMX acrobatics • Playing with toy on the ground • Exercising • Taking personal photographs • Outdoor sketching • Sitting/ lying down and sleeping |
| <p>The social activities which usually happen in the recreation squares in Guangzhou as following (16 types):</p> <ul style="list-style-type: none"> • Sitting and watching (people) • Being intimate • Standing and watching (people) • Playing badminton • Playing with a ball • Street dancing (in group) • Square dancing (in group) • Doing spontaneous business • Health consulting • Rehearsing collective activity • Standing and chatting • Sitting and chatting • Doing questionnaire survey • Taking group photographs • Handing out free newspaper • Inspecting and studying (in tour) |

Table 6.6 Classification list of the staying-in behaviours in the recreation squares

Behaviour spatial distributions

Based on the data collected from the observations, 435 behaviour maps (see Appendix B) are generated by using GIS to illustrate the details of each behaviour at each observation time in the three squares. In this thesis, 36 (12 behaviour maps for each of the recreation squares) behaviour maps are selected from the 435 maps to illustrate the features of spatial distribution of each

behaviour in the three squares. Furthermore, these 12 behaviour maps for each square cover six days' situations of behaviours. Among these, 2 behaviour maps for each day with one for passing-through behaviours and the other one for staying-in behaviours. The analysis of these 36 behaviour maps reveals a number of features relating to the behaviour's spatial distribution, and they are illustrated by each square as follows.

Hero Square

Based on the analysis of 12 behaviour maps (see Appendix B figure 2.1- 2.12) which present the spatial distribution of each behaviour across six days in Hero Square, the features of spatial distribution of these are discovered and illustrated as follows.

- The distributions of passing-through behaviours across six days (see Appendix B figure 2.15, figure 2.17, figure 2.19, figure 2.21, figure 2.23, figure 2.25) presents similar patterns which mainly includes two key points as follows:
 1. The spatial engagement by passing-through users presents a “Z” shape in the south part of Hero Square, and a wild (irregular) shape in the north part. Meanwhile, a greater number of passing-through behaviours happen in the south part than in the north part, with three major walking-through flows throughout a day in Hero Square (see Appendix B figure 2.13), which are between A (near tube station) and B (near tube station), between A to D (near bus station), and between D (near bus station) to C. This feature reveal that today's recreation squares in Guangzhou have been occupied by certain passing-through users, and they present a usage preference of “short-cut”; meanwhile it is found that the stopping places of public transport could significantly affect the movement tracks of the passing-through users.
 2. The passing-through users present similar behaviour distribution patterns between the week and weekend.
- The distributions of staying-in behaviours across the six days (see Appendix B figure 2.2, figure 2.4, figure 2.6, figure 2.8, figure 2.10, figure 2.12) presents similar and regular patterns besides special situations, which mainly includes the following two key points:
 1. The staying-in users present a higher usage of the north part than that of the south part of Hero Square, which is in contrast to the passing-through usage. This implies the existence of an avoidance of each other (passing-through users and staying-in users).

In the south part of Hero Square, staying-in users prefer to use the linear place along the seating opportunities and the space around the steps. Few staying-in users use the centre of the south part of Hero Square during the week. This implies that stay-in users are

sensitive to seating opportunities whether formal or informal.

While, in the south part of Hero Square, the spatial engagement by all of the staying-in users presents a “U” shape in general, because there are sculptures and planting in the centre. During the evening, the south part presents an obvious trend of “fixed territories” formed by the square dancing and skateboarding, which informs us as to the existence of the “fixed territories” and “loyal users” in the recreation squares in today’s Guangzhou.

2. The staying-in users present similar behaviour distribution patterns during the week and at the weekend, apart from one difference. This difference is that more staying-in behaviours occur in the centre of the south part of Hero Square at the weekend, especially on Jan 19th 2013, when the area near the steps was engaged by construction work for a temporary performance stage. This implies that the behaviour’s spatial distribution could be affected by the affordance of a square.

Flower City Square - Water Fountain Square

Based on the analysis of 12 behaviour maps (see Appendix B figure 2.1- 2.12) which present the spatial distribution of each behaviour across the six days in Water Fountain Square, the features of these are discovered and illustrated as follows.

- The distributions of passing-through behaviours across the six days (see Appendix B figure 2.15, figure 2.17, figure 2.19, figure 2.21, figure 2.23, figure 2.25) present similar patterns, which mainly includes the following two key points:
 1. The spatial engagement by passing-through users presents a “()” shape in Water Fountain Square with two simple circulation flows which are between A and B, and between C and D (see Appendix B figure 2.27). This highlights the users’ avoidance of the usage of the centre part of this square where the fountain facilities are located.
 2. The passing-through users present similar behaviour distribution patterns during the week and at the weekend, except for on Jan 26th 2013 when there is less usage due to the rainy weather.
- The distributions of the staying-in behaviours across the six observation days (see Appendix B figure 2.16, figure 2.18, figure 2.20, figure 2.22, figure 2.24, figure 2.26) present similar and regular patterns besides special situations, which mainly includes the following two key points:
 1. The staying-in users present a higher usage along the two sides’ benches on the west and east of the site, and then, the space in the south and north (see Appendix B figure 2.28).

There are very few people using the centre of this square, whether there is a fountain performance or not, which might be because of the potential safety risk which is caused by the sunken space of the fountain on the ground.

2. The staying-in users also present a similar behaviour distribution patterns between the week and the weekend, except for on Jan 26th 2013 when there is less usage due to the rainy weather.

Flower City Square - Lighting Square

As with the other two squares, the illustration and analysis of the spatial distributions of behaviours occurring in Lighting Square is carried out based on the 12 behaviour maps in Appendix B (see figure 2.29 - 2.40) generated by using GIS. From these maps, certain features with regards to the behaviours' spatial distributions in Lighting Square are found and can be summarised as follows.

- The distributions of passing-through behaviours across the six observation days in Lighting Square (see Appendix B figure 2.29, figure 2.31, figure 2.33, figure 2.35, figure 2.37, figure 2.39) present similar spatial distribution patterns, which mainly includes the following two key points:
 1. In general, the spatial engagement by passing-through users seems to cover nearly the whole space of Lighting Square with all-round circulation flows, which is different from the flow patterns of Hero square and Water Fountain Square.
 2. The passing-through users present similar behaviour distribution patterns during the week and at the weekend.
- The distributions of the staying-in behaviours across the six observation days in Lighting square (see Appendix B figure 2.30, figure 2.32, figure 2.34, figure 2.36, figure 2.38, figure 2.40) present similar spatial distribution patterns, which mainly includes the following two key points:
 1. In general, the spatial engagement by the staying-in users is mainly around the edge space where the seating opportunities are, and there is a very low level of spatial engagement by the staying-in behaviours in the centre part of Lighting Square.
 2. The staying-in users present similar behaviour distribution patterns during the week and at the weekend; however there is a higher usage of the centre part of Lighting Square at the weekend.

Conclusion

Based on the crosswise comparison of the findings relating to the distribution of behaviours across the three squares, some common features of the distributions of behaviours in the recreation squares in Guangzhou exist. These are:

- The distributions of passing-through behaviours are significantly affected by the location of the public transport stops, and passing-through users present a preference of “shortcut”.
- The passing-through behaviours and staying-in behaviours appear to avoid each other and don't occupy the same areas of a recreation square, which implies the potential usage conflicts that needs to be resolved within the design.
- It is found that the distributions of both passing-through and staying-in behaviours are more influenced by the location of the internal objects, e.g. sculpture, planting, fountain, seating, rather than by the weather. This gives us an inspiration on a way of controlling the distributions of passing-through behaviours and staying-in behaviours in a recreation square in Guangzhou by design. Furthermore, the staying-in users present an obvious gathering in places where opportunities for seating are provided whether formal or informal. This implies that the more and better the seating opportunities are, the more possibilities are for staying-in behaviours to occur and the longer duration of staying-in behaviours are.
- The distributions of both passing-through and staying-in behaviours present similar patterns during the week and at the weekend, which informs us as to the fact that the distribution of behaviours is not sensitive to the weekend.

The above findings, based on the crosswise comparison, can be summarised into one issue, which is that the affordance can significant affect both passing-through and staying-in behaviours. The greater the affordance of a square, the wider and greater the distributions of the behaviours.

6.1.3 The Main Usage and Their Participants in the Recreation Squares in Guangzhou

As discussed above, the recreation squares are engaged by a number of typical behaviours currently, in Guangzhou. From the analysis of the GIS behaviour maps, it is found that each of these three recreation squares are all normally dominated by certain types of behaviours at different time. Therefore, six summary tables (2 tables for each of the three recreation squares) (see Appendix C table 1.1, 1.2, 2.1, 2.2, 3.1, 3.2) are produced to present this issue clearly and visually to the reader.

Here there are two tables for each recreation square, which, respectively, illustrated the situation during the week and at the weekend. On each table, there are five attributes which correspond to,

time, passing-through versus staying-in behaviours, top three main typical behaviours, corresponding users, and dominant behaviours. From the analysis of these six tables, a number of features relating to the main usage and their participants in the three recreation squares are revealed. These are illustrated as follows.

Hero Square

Based on the analysis of table 1.1 and table 1.2 in Appendix C, it is found that Hero Square is dominated by different behaviours at different times, while these behaviours significantly contribute towards forming the appearance of Hero Square. According to the Chinese common time divisions, which are morning (between 7:00 and 12:00), lunchtime (between 12:00 and 14:00), afternoon (between 14:00 and 18:00), and evening (between 18:00 and 24:00), the dominant behaviours occurring in Hero Square in each time period are found as below.

- **In the morning (between 7:00 and 12:00)**

1. During the time between 7:00 and 8:00, the behaviour in the passing-through behaviours' category and the behaviours in the staying-in behaviours' category present similar proportions in the usage of Hero Square in most cases. Furthermore, passing-through on foot and doing morning exercises are the dominant behaviours occurring at this time.
2. During the time between 8:00 and 10:00, passing-through on foot dominates the usage of Hero square.
3. During the time between 10:00 and 12:00, the behaviours in the staying-in behaviours' category dominate the usage of Hero Square at most times of this period. The dominant behaviours occurring in Hero Square during this period are as follows: passing-through on foot, running and playing using open area, sitting and chatting, sitting with a pram, rehearsing collective activity, standing with a pram, standing and watching (sculptures, plants, or people), strolling with a pram, doing maintenance of square's facilities (temporary performance platform), health consulting (special event), and playing around on bicycle.

- **At Lunch Time (between 12:00 and 14:00):**

1. During the time between 12:00 and 14:00, the behaviours in the staying-in behaviours' category dominate the usage of Hero Square during this period. These are: standing with a pram, strolling with a pram, doing maintenance of square's facilities, running and playing using open area, sitting and watching (sculptures, plants, or people), sitting and chatting, sitting with a pram, using/playing with phone or personal business, rollerblading,

and rehearsing collective activity.

- **In the afternoon (between 14:00 and 18:00):**

1. During the time between 14:00 and 18:00, it is found that Hero Square is dominated by the staying-in behaviours. These are as follows; sitting and watching (sculptures, plants, or people), sitting with a pram, running and playing using open area, sitting and chatting, rehearsing collective activity, playing around on bicycle, rollerblading, strolling with a pram, and sitting with a pram.

- **In the evening (between 18:00-24:00):**

1. During the time between 18:00 and 20:00, the behaviours in the category of staying-in behaviours dominate the usage of this square. The specific dominant behaviours are as follows; running and playing using open area, skateboarding, sitting and chatting, strolling with a pram, rollerblading, and sitting and watching (sculptures, plants, or people)
2. During the time between 20:00 and 22:00, square dancing which belongs to the category of the staying-in behaviours present an absolute dominance in the usage of Hero Square in this period. While, the behaviour of standing and watching (people) presents a second placed dominance in the usage of this square during this period.
3. During the time between 22:00 and 24:00, it is still staying-in behaviours that dominate the usage of Hero Square at most times of this period. The dominant behaviours occurring in this period are; passing-through on foot, square dancing, street dancing, skateboarding, sitting and watching (people), running and playing using open area, sitting and chatting, playing BMX acrobatics, standing and chatting, rollerblading, and square patrolling.

Water Fountain Square

In Water Fountain Square, the main typical behaviours and the dominant behaviours that are occurring during the four different time periods are found based on the analysis of the table 2.1 and table 2.2 in Appendix C, and the dominant behaviours are listed as below.

- **In the morning (7:00-12:00):**

1. During the time between 7:00 and 8:00, passing-through on foot in the category of passing-through behaviours dominates the usage of Water Fountain Square at this time.
2. During the time between 8:00 and 10:00, the behaviour in the category of passing-

through behaviours' dominate the usage of Water Fountain Square in most cases. In general, passing-through on foot and doing maintenance of squares' facilities are the dominant behaviours during this period.

3. During the time between 10:00 and 12:00, the behaviour in the passing-through behaviour category dominate the usage of Water Fountain Square in most cases, with the exception that behaviours in the staying-in behaviours category dominate the usage of it occasionally. In general, the dominant behaviours of this period are follows; passing-through on foot, strolling with a pram, sitting with a pram, running and playing using open area, doing maintenance of square's facilities (sculpture of lightings), and taking group photographs.

- **At Lunch Time (between 12:00 and 14:00):**

1. During the time between 12:00 and 14:00, the behaviour in the category of passing-through behaviours dominates the usage of Hero Square during this period. Furthermore, passing-through on foot dominates the usage of Water Fountain Square at lunch time.

- **In the afternoon (between 14:00 and 18:00):**

1. During the time between 14:00 and 18:00, it is found that Water Fountain Square is normally dominated by the passing-through behaviour at most times during this period. Only at the time around 16:00, when there is a performance of the music fountain, the staying-in behaviours present an increase in this square. During the period that staying-in behaviours dominate the usage of this square, the following behaviours primarily engage this square (besides sitting/standing and watching performance of music fountain, which has been discussed above); rehearsing collective activity, running and playing using open area, sitting and watching (people, plants), sitting and chatting, taking personal photographs, and strolling with a pram.

- **In the evening (between 18:00-24:00):**

1. During the time between 18:00 and 20:00, passing-through on foot dominates the usage of Water Fountain Square in most cases. In the exceptional case, three staying-in behaviours dominate the usage of this square, which are sitting and chatting, running and playing using open area, and sitting and watching (people, plants).
2. During the time between 20:00 and 22:00, Water Fountain Square is dominated by the behaviour of passing-through on foot at most times during this period except for two

exceptional periods (between 20:00 and 20:20, and from 21:00 to 21:20) when there are performances of the music fountain. In the exceptional periods, besides the behaviour of watching the performance, running and playing using open area, sitting and chatting, sitting and watching (people), standing and chatting, and taking personal photographs are the five behaviours that dominate the usage of this squares in the exceptional periods.

3. During the time between 22:00 and 24:00, Water Fountain Square is dominated by the behaviour of passing-through on foot in most cases. In the exceptional case, playing BMX acrobatics, and sitting and chatting dominate the usage of this square during this period.

Lighting Square

In Lighting Square, the main typical behaviours and the dominant behaviours that are occurring during the four different time periods are found based on the analysis of the table 3.1 and table 3.2 in Appendix C. The dominant behaviours that occur in Lighting Square are listed as below:

- **In the morning (7:00-12:00):**

1. During the time between 7:00 and 8:00, during the week, the behaviours in the passing-through category dominate the usage of Lighting Square; while at the weekend the proportion of the behaviours in the staying-in behaviours' category presents an increase in the usage of Lighting Square. In general, passing-through on foot, playing badminton, and square cleaning by sanitation worker, are the dominant behaviours occurring during this period.
2. During the time between 8:00 and 10:00, during the week, behaviours in the passing-through category dominate Lighting Square in most cases; while at the weekend the behaviours in the staying-in behaviours category present an increase in the proportion of the usage of Lighting Square. In general, the following behaviours dominate the usage of Lighting Square during this period; passing-through on foot, or by bicycle, playing badminton, sitting and reading, sitting and chatting, doing morning exercises, doing maintenance of square's facilities, square cleaning by sanitation worker, standing and chatting, and taking personal photographs.
3. During the time between 10:00 and 12:00, behaviours in the staying-in behaviours category dominate the usage of this square in most cases, with the exceptions that passing-through behaviour dominates the usage occasionally. In summary, the dominant behaviours during this period are; passing-through on foot, running and playing using open area, sitting and chatting, sitting and watching (sculptures, plants, or people), standing and chatting, strolling with a pram, inspecting and studying (in tour), and taking

group photographs.

- **At Lunch Time (between 12:00 and 14:00):**

1. During the time between 12:00 and 14:00, the behaviours in the staying-in behaviours' category dominate the usage of Lighting Square at most times during this period, in most cases. The specific dominant behaviours are as follows; passing-through on foot, sitting with a pram, running and playing using open area, sitting and chatting, sitting and eating, and sitting and watching (people, plants).

- **In the afternoon (between 14:00 and 18:00):**

1. During the time between 14:00 and 18:00, it is found that the staying-in behaviours dominate the usage of Lighting Square at most times during this period. The specific dominant behaviours of this square, besides watching the performance, in this period are as follows; passing-through on foot, running and playing using open area, sitting and chatting, strolling with a pram, and standing and chatting.

- **In the evening (between 18:00-24:00):**

1. During the time between 18:00 and 20:00, the behaviours in the staying-in behaviours category dominate the usage of this square in most cases. The specific dominant behaviours are as follows; passing-through on foot, sitting and chatting, running and playing using open area, sitting and watching (people and plants), and strolling.
2. During the time between 20:00 and 22:00, the behaviours in the staying-in behaviours category that dominate the usage of this squares are running and playing using open area, sitting and chatting and standing and chatting.
3. During the time between 22:00 and 24:00, the proportions between passing-through behaviours and staying-in behaviours are similar. The specific dominant behaviours that occur during this period are; passing-through on foot, running and playing using open area, sitting and chatting, sitting and watching (people), standing and chatting, and being intimate.

In summary, from the analysis, it can be seen that all of the three recreation squares are dominated by a certain number of behaviours, which have been respectively indicated according to the time period above. Through the crosswise comparison of the dominant behaviours in the three squares, it is found that, the types of the dominant behaviours that occur at the same time periods in

different recreation squares present a certain amount of overlap. This implies that the recreation squares in Guangzhou are dominated by certain universal behaviours, which will be further discussed in the next Chapter.

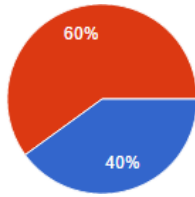
6.2 Findings from Semi-structured Interviews

For successfully achieving the research objective 2, two selection criteria for selecting suitable participants for the semi-structured interviews were set. The first is that the interviewees should be selected from amongst the on-site users across all of the three squares; and the second is that the interviewees should be selected from every observation times and should be the representative users of that period, which have been identified in the non-participant observations.

Based on the above selection criteria, 39 people were invited to take the interviews. Eventually there were 35 interviewees involved and completed the 45 to 60 minute semi-structured interview. These 35 interviewees covered both genders, contained the age range from 7 to 67, and included both Guangzhou citizens and non-Guangzhou citizens. Finally, 25 semi-structured interviews in Hero Square, 3 semi-structural interviews in Water Fountain Square and 7 semi-structured interviews in Lighting Square were conducted and completed, because Hero Square appeared to have a higher usage by users and to have a more obvious unbalanced usage which could better assist the author to discover the users' insight thoughts and desires for recreation squares in Guangzhou.

In detail, the basic information of these interviewees is analysed as follows. Classified by different gender, there are 14 males and 21 females (see Figure 6.1); classified by age, there is one person in the category of 4-12 years old, four people in the category of 13-18 years old, seven people in the category of 19-24 years old, nineteen people in the category of 25-64 years old, and four people in the category of 65+ years old (see figure 6.2); classified by different origin, there are 21 Guangzhou citizens and 14 non-Guangzhou citizens (see Figure 6.3).

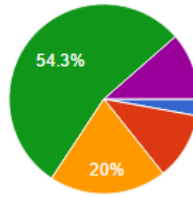
By Gender



Male: 14 people - 40%
Female: 21 people - 60%

Figure 6.1 Ratio of the interviewees by gender

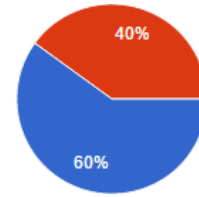
By Age



4-12 years old: 1 person - 2.9%
13-18 years old: 4 people - 11.4%
19-24 years old: 7 people - 20%
25-64 years old: 19 people - 54.3%
65+ years old: 4 people - 11.4%

Figure 6.2 Ratio of the interviewees by age

By Origin



Guangzhou Citizen: 21 - 60%
Non-Guangzhou Citizen: 14 - 40%
Other nationality: 0

Figure 6.3 Ratio of the interviewees by origin

6.2.1 The Usage Situation and Users’ Perceptions of Urban Squares in Guangzhou

From the answers to Q1.1.3 (see Figure 6.4), it can be found that, out of the 35 interviewees, there are 28 people (80%) stating that they have used all of the four different types of urban squares, while there are 34 people (97%) stating that they have used three different types of urban squares. This implies that the different types of square are widely used in Guangzhou by users in their routine life. Meanwhile the answers to Q1.1.5 (see Figure 6.5) inform us that there are 34.3% of the interviewees using the squares every day, 11.4 % of the interviewees using the squares more than once a week, and 11.4% of the interviewees using the squares weekly. This implies that the squares are frequently used in Guangzhou in routine life.

However, the answers to Q1.1.4 (see Figure 6.6) show that, there are 28 people (75.6% of the total) stating that they are not aware of any differences between the different types of squares and there is nobody stating that they know the differences. Meanwhile the answers to Q1.1.1 appear to explain the main reason that results in the fact above. Based on the analysis of the interviewees’ responses to Q1.1.1 (see Figure 6.7) and Q1.1.2 (see interviewees’ phrasing below), it could be deduced that the users’ comprehension of the different types of squares are vague in Guangzhou. This is mainly because the design has not contributed towards offering sufficient distinguishable characteristics to the different types of urban squares, and therefore the legibility of different urban squares to the users in Guangzhou is low.

“The squares look similar, but some squares look livelier and have more users.” (IC06, 25, male, lunch break)

“The outlooks appear similar, but the surrounding buildings are different, and the locations are different.” (IC08, 20, female, short break)

“They look dissimilar, but I cannot say the exact differences, just a sense.” (IC14, 65, male, accompanying grandson to play)

“Some squares have elderly people dancing, and some don’t.”(IC21, 21, male, skateboarding)

“The locations are different and the names are different.” (IC23, 17, male, street dancing)

“Some seem mainly to serve the commercial activities, and some others seem mainly to serve the people’s recreation activities.” (IC24, 36, female, square dancing)

“The whole designs of different squares look different.” (IC29, 26, male, lunch break)

“The stuff in the different squares are different, some squares have fountains, some squares have sculptures, some have large lawns, and some have nothing, only with large flat paving.” (IC31, 23, female, relaxing)

“Some are a bit too noisy and crowded, while some others are more peaceful.” (IC35, 24, female, relaxing)

[Q1.1.3 How many different types of urban squares categorised below in Guangzhou have you used? (Choose as many as appropriate)]

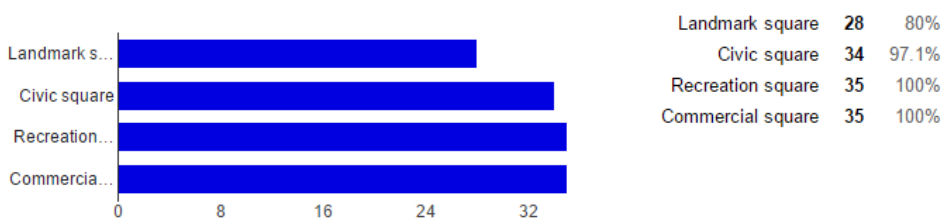


Figure 6.4 Answers to Q1.1.3

[Q1.1.5 How often do you usually use urban squares in Guangzhou? (Please tick one box from below)]

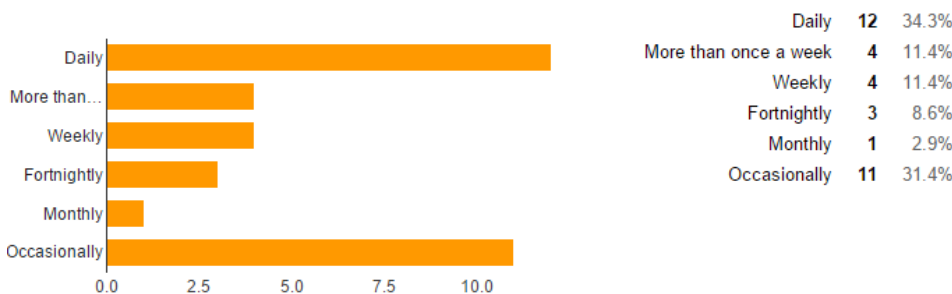


Figure 6.5 Answers to Q1.1.5

[Q1.1.4 Are you aware of any differences among different types of urban squares? (Please tick one box from below)]

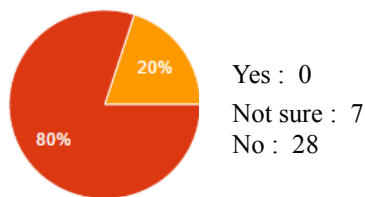


Figure 6.6 Answers to Q1.1.4

[Q1.1.1 In your mind, do the squares you saw in China currently have similar appearances and characteristics or diverse appearances and characteristics? (Please tick one box from below)]

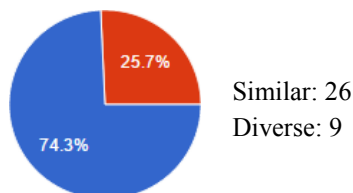


Figure 6.7 Answers to Q1.1.1

6.2.2 The Users' Main Usage Purpose and the Satisfaction Degree of Urban Squares in Guangzhou

The main purpose for using public squares

The answers to Q1.1.6 specified the main purpose for each interviewee's use of the urban squares in Guangzhou. Through analysis, their main purposes could be summarised into five categories which are "for exercising", "for relaxing", "for accompanying children or babies for their playing and sunbathing", "for playing", and "for passing through".

Therein, "for exercises" was mentioned 4 times, using phrases such as:

"Sometimes, if the time is too rushed, I will use the square for morning exercises rather than the park, because the square is nearer to my home." (IC02, 53, female)

"Playing the flute and exercising." (IC03, 65, male)

"Normally I use it for running with my husband in the early morning,..." (IC04, 30, female)

"I normally use the square for morning exercises, which usually lasts for around 30 minutes to 1 hour..." (IC11, 67, female)

"For relaxing" was mentioned 21 times, which includes different specific behaviours such as

dancing, enjoying the fresh air, wondering around, sun bathing, gathering and chatting, rehearsing, watching others and so on, with phrases such as:

“Relaxing, dancing and developing hobbies.” (IC24, 36, female)

“I come to square for relaxation and enjoying the fresh air, to divert the mind from boredom when I am in a bad mood.”(IC06, 25, male)

“Normally I come to the square to wonder around and for relaxing.” (IC26, 17, female)

“Relaxation, Oh well, sun bathing.” (IC30, 26, male)

“Go out and relax with friends together, and use the square for gathering, chatting and rehearsing.”(IC22, 17, male)

“Relaxing and to see the others’ life by the way.” (IC35, 24, female)

“For accompany children or babies for their playing and sunbathing” was mentioned 8 times, using phrases such as:

“My grandson comes to the square to skateboard, and I mainly come to accompany him for his security.” (IC14, 65, male)

“Using the square to let my baby enjoy sunbathing...”(IC15, 23, female)

“For playing” was mentioned 3 times, with phrases such as:

“Use square for skateboarding.” (IC21, 21 male)

“Come to play with my fiends together.” (IC23, 17, male)

“For passing through” was mentioned once, using the phrase:

“Passing – through on the way home.” (IC12, 55, female)

From the above discussions, two issues relating to the main usage purpose of urban squares in Guangzhou are discovered. The first is that “for recreation” presents an obvious predominant position in the main usage purposes of urban squares in Guangzhou. The second is that, users normally have two distinct usage motivations for using urban squares in Guangzhou, which is for themselves or for others. In this research, the people who use a square mainly for themselves are named “active users”; while those who use a square mainly for others, are named “passive users” by the author. Their usage preferences and desires have significant differences and will be discussed further in section 7.1.

The users' attitude towards creating social interactions and the suggestions:

The answers to Q1.1.7 (see Figure 6.8) indicated that 21 out of the 35 interviewees take a positive attitude towards making friends in squares, 12 out of 35 interviewees take an equivocal attitude, and only 2 interviewees tick “no” for the question of “do you like to make new friends in squares?”, who are 21 and 23 year old females. From the response of the interviewees, especially their further explanations, there are two features that are discovered. Firstly, the people who use a square in a group normally are more open minded for making friends and would like to extend this friendship beyond the square. Meanwhile this friendship could make the group more stable. Secondly, the people who use a square as individuals prefer to keep the friendship only in the square rather than extend it beyond the square.

[Q1.1.7 Do you like to make new friends in squares? (Please tick one box from below)]



Figure 6.8 Answers to Q1.1.7

In the 21 positive answers, the interviewees suggest three methods which could increase the opportunities for making new friends in squares for them. The first method is to hold regular or irregular public events or activities, e.g. “weekend forums”, “festival events”, “outdoor art exhibition”, and the second method is to nourish some specific usage culture in a square to attract people who have similar usage behaviours to come together. In other words, the second method is to encourage the individual users into forming several non-organised usage groups and to support them. The third method is to offer people the opportunity to sit down in the squares. These three views are expressed with the phrases such as:

“I wish the squares could have more interesting activities or events, such as ‘weekend forum’, and then there can be more opportunities to get to know new friends.” (IC08, 20, female)

“More activities, more opportunity to make new friends.” (IC11, 67, female)

“I come here for group dancing, and if there were more people to join our dancing group, then definitely there will be more opportunities to make friends.” (IC10, 53, female)

“It is easy to make friends when we are skateboarding together. Because when we play together, we could spontaneously advise each other on techniques, and then we get to know each other.” (IC21, 21, male)

“I think firstly the square should have the capability to let people sit down, then the other things can have a chance to happen.” (IC05, 53, female)

Their suggestions imply a fact that people and their activities are positive stimuli to attract more people to use the squares and to stay there longer, in the recreation squares of Guangzhou. This finding echoes the theory of “people attract people” raised by Gehl (1987) and Whyte (1980).

The degree of satisfaction in urban squares and recreation squares in Guangzhou

The answers to Q1.1.8 (see Figure 6.9) indicate that there are 9 interviewees that don’t have any favourite square, and there are 26 interviewees that do. While the answers to Q1.1.9 indicate a fact that, out of the 26 interviewees who admit to having favourite squares, there are only 3 people who think that the atmosphere of their favourite square has a good level of friendliness; while another 23 people respond with merely “OK”.

Meanwhile, in the 26 answers to Q1.1.8 (see Figure 6.10), only “Flower City Square” (mentioned 13 times), “Hero Square” (mentioned 9 times), “Haixinsha Square” (mentioned twice), “Chen Clan Academy Square” (mentioned once), and “Panyu Square” (mentioned once) are mentioned as favourite squares in the interviews from a range of over 30 different squares in Guangzhou. This implies a low degree of satisfaction of the squares by the users in current Guangzhou.

[Q 1.1.8 Do you have a favourite urban square in Guangzhou? If yes, which is it?]

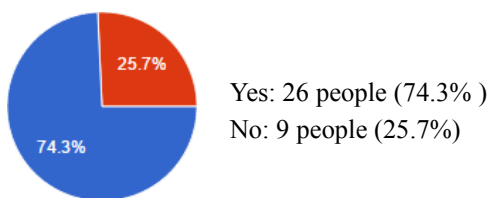


Figure 6.9 Answers to Q1.1.8

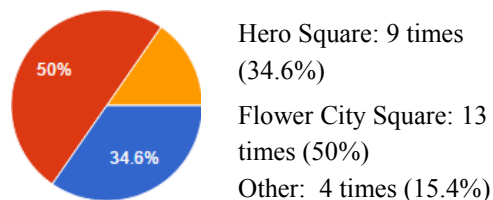


Figure 6.10 Answers to Q1.1.8

Meanwhile, the answers to Q1.1.9 (see Figure 6.11) express the evaluation of the friendliness of the atmosphere of the interviewees’ favourite squares. They show that most of the interviewees (23 people, 88.5%) think the friendliness of the atmosphere of their favourite squares is merely “OK”. Meanwhile the answers to Q2.1 (see Figure 6.12) state that only 1 person thinks that the recreation squares provide a good friendly atmosphere; 21 interviewees (60% of the total) evaluate the friendliness of recreation squares as “OK”; and 13 interviewees think that the recreation squares do not provide a friendly atmosphere.

[Q1.1.9 If your response to Q1.1.8 is yes, how do you evaluate the degree of your favourite square's friendly atmosphere if you have? (Please tick one box from below)]

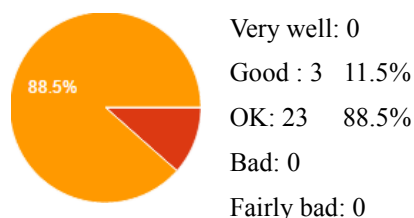


Figure 6.11 Answers to Q1.1.9

[Q2.1 In general, how do you evaluate the degree of squares' friendly atmosphere of urban recreation square in Guangzhou? (Please tick one box from below)]

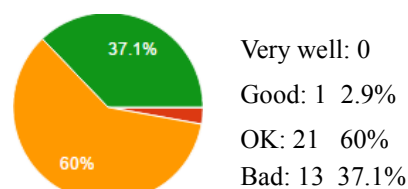


Figure 6.12 Answers to Q2.1

All these indicate that the degree of satisfaction with the squares especially with the recreation squares in current Guangzhou is fairly low.

The usage features of the three different squares

Firstly, the answers to Q3.1 (see Figure 6.13) further prove the existence of the active usage times of the recreation squares in Guangzhou which is discovered in the observations. The active usage times are between 10:00 and 12:00 in the morning, between 14:00 and 16:00 in the afternoon, and between 20:00 to 22:00 in the evening under usual circumstances.

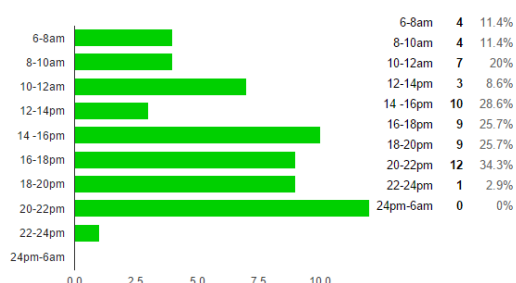


Figure 6.13 Answers to Q3.1

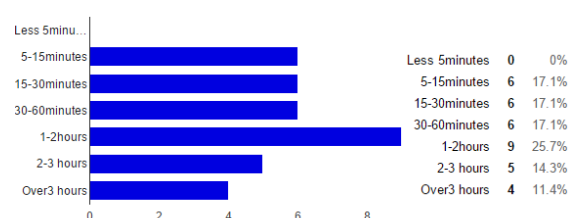


Figure 6.14 Answers to Q3.3

Secondly, the answers to Q3.3 (see figure 6.14) indicate that the usage duration of the interviewees covers a wide arrange, which is from 5 to 15 minutes, to over 3 hours. While in the different usage time durations, the users who use a recreation square for between 1 and 2 hours are in the majority; and the users who use a square in the other 5 time durations present a similar degree to each other. The interviewees' further explanations to Q3.3 imply that the affordance of a square (e.g. the attractions in the square) can significantly affect their usage time, using the phrases as follows.

“If there is a music fountain performance, I would like to stay in the Water fountain Square for around 10 minutes to watch it, otherwise I will just pass through. Actually I normally stay in Flower City square for around 1 hour, but stay in the other parts of it.” (IC27, 17, female)

“I stay in the Lighting Square normally, no more than 15 minutes and will wonder around and spend more time in the other parts of Flower City Square because it is too difficult to grab a seat in Lighting Square, which is really a pain for the family usage.” (IC34, 3, female)

“I could stay in the Water Fountain Square longer if there are more interesting things to watch or participate in, but there are not, and no lighting available in the evening, which gives me no reason to stay in the Water Fountain Square for long time, especially in the evening.” (IC32, 30, male)

“I cannot stay in the square for too long, because after morning exercises, I need to go back home and look after my grandson when their parents go to work. I seldom take my grandson to this square with me, because in Hero Square there aren't any playing facilities suitable to my grandson's playing, so he does not like to come with me.” (IC3, 65, male)

From the analysis of their phrases, it can be seen that, when the affordance of a recreation square is positive, the users would like to spend more time and come more frequently, and vice versa.

Thirdly, the answers to Q3.4, Q3.5, Q3.6 and Q3.7 imply the reasons that result in the differences of the usage level and usage behaviours of the three different squares which are mainly relating to the inside attractions, location, safety and security, and so on, which all relate to the issue of the “affordance” of a recreation square. A table (see table 6.7) is produced to concisely illustrate the different affordance of the three squares and the consequent usage levels of the three squares.

From above, it can be seen that, the usage differences of the different recreation squares are caused by the different levels of affordance of the recreation squares. In regard to the specific factors that will affect the “affordance” of a recreation square in Guangzhou, further discussion is carried out in the next subchapter, based on the interviewees' response to the above questions and question Q2.5.




| Criteria | Hero Square | Water Fountain Square | Lighting Square |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Aerial view (Edushi, 2015) |  |  |  |
| Location | • In central Guangzhou | • In central Guangzhou | • In central Guangzhou |
| Accessibility | • Easy to access by public transport | • Easy to access by public transport | • Easy to access by public transport |
| Permeability | <ul style="list-style-type: none"> • Good inside visual permeability, bad outside visual permeability. • Limited linkage to its surrounding buildings • Non-prosperous edge, but with potential. | <ul style="list-style-type: none"> • Good inside visual permeability, bad outside visual permeability. • Limited linkage to its surrounding buildings • Non-prosperous edge, but with potential. | <ul style="list-style-type: none"> • Good inside and outside visual permeability. • Good linkage to its surrounding buildings • Limited prosperous edge, but with potential. |
| Safety and security | <ul style="list-style-type: none"> • Good safety • Good security | <ul style="list-style-type: none"> • Safety risks exist (no lighting, sunken fountain) • Good security | <ul style="list-style-type: none"> • Good safety • Good security |
| Scale | • Inappropriate scale | • Inappropriate scale ratio | • Inappropriate scale |
| Legibility | <ul style="list-style-type: none"> • Has specific and defined features • Has photographic features • Inappropriate signs • Regular shape • Limited playful perception | <ul style="list-style-type: none"> • Limited specific and defined features • Only has good photographic features during fountain performance • Inappropriate signs • Regular shape • Low playful perception | <ul style="list-style-type: none"> • Limited specific and defined features • Has photographic features when the temporary sculpture exists • Signs exist, but need to be improved. • Regular shape • Very low playful perception |
| The sense of amenity and comfort | <p>Natural Setting</p> <ul style="list-style-type: none"> • Limited planting species with no accessibility • No water feature • No landform, but has level changes • No stone feature <p>Recreation Facilities</p> <ul style="list-style-type: none"> • Illumination exists • Normal paving • No retail kiosk • Seating available • No sunshade/similar structure • No electronic facilities for searching information • No stage for group events/activates • No fitness facilities • Sculptures exist • Volunteers' stop exists • No big screen for broadcasting significant information • No newspaper bulletin board • No newspaper selling kiosk <p>Human contact</p> <ul style="list-style-type: none"> • No shows/performances • Activities for participating in are available • Commercial activities exist • Some atmosphere for friends' gathering and recreation • Some atmosphere for family users' recreation • Some atmosphere for single users' recreation • Some atmosphere for couple users' recreation | <p>Natural Setting</p> <ul style="list-style-type: none"> • Limited planting species with no accessibility • Fountain exists • Slight landform, no level changes • No stone feature <p>Recreation Facilities</p> <ul style="list-style-type: none"> • No illumination • Normal paving • Retail kiosk exists • Seating available • No sunshade/similar structure • No electronic facilities for searching information • No stage for group events/activates • No fitness facilities • No sculpture • No volunteers' stop • No big screen for broadcasting significant information • No newspaper bulletin board • No newspaper selling kiosk <p>Human contact</p> <ul style="list-style-type: none"> • Fountain performances exist • Activities for participating in are unavailable • Commercial activities exist • Limited friendly atmosphere for friends' gathering and recreation • Some atmosphere for family users' recreation • Some atmosphere for single users' recreation • Some atmosphere for couple users' recreation | <p>Natural Setting</p> <ul style="list-style-type: none"> • Limited planting species with no accessibility • No water feature • Slight landform, no level changes • No stone feature <p>Recreation Facilities</p> <ul style="list-style-type: none"> • Illumination exists • Paving with illumination • No retail kiosk • Limited seating available • No sunshade/similar structure • Electronic facilities for searching information exist • No stage for group events/activates • No fitness facilities • Sculpture exists • No volunteers' stop • A big screen for broadcasting significant information exists • No newspaper bulletin board • No newspaper selling kiosk <p>Human contact</p> <ul style="list-style-type: none"> • No regular shows exist • Activities for participating in are available • Commercial activities exist • Limited friendly atmosphere for friends' gathering and recreation • Limited atmosphere for family users' recreation • Some atmosphere for single users' recreation • Some atmosphere for couple users' recreation |
| Territoriality and equity | • Territorial conflicts exist | • No obvious territorial conflicts | • Territorial conflicts exist |
| Maintenance | • Good maintenance | • Good maintenance | • Good maintenance |
| Management of events | • Is desired | • Is desired | • Is desired |
| Usage level | • Limited and imbalanced usage | • Low usage and imbalanced usage | • Limited and imbalanced usage |

Table 6.7 The summary of the affordance of the three squares

6.2.3 The Thoughts and Suggestions on the Concept and Criteria of Socially Beneficial Urban Square

The thoughts and suggestions on the concept of socially beneficial urban square

The answers to Q2.1-Q2.5 reveal the users' concerns and suggestions with respect to building users-friendly recreation squares for them, based on their own usage preferences and desires. From the analysis of these answers with the use of NVivo, two issues are discovered. The first is the thoughts and suggestions on the concept of socially beneficial recreation squares, and the second is the thoughts and suggestions on the criteria of socially beneficial recreation squares.

The interviewees' responses expressed a number of desires for the recreation squares, and suggestions in regard to the concept of socially beneficial urban squares. Based on the analysis, these relevant responses can be summarised into two categories. The first is that, the users expect the recreation squares to stimulate diverse behaviours and sustain diverse users, rather than only to be occupied by a limited number of behaviours and types of users. This is because they dislike the public recreation squares to become the exclusive paradise for only a limited number of people. This expectation is exacted from the interviewees' phrases, such as:

"I hope the atmosphere of different users' group do not disturb each other in a square. Actually if it is a good square, it will resolve this issue well." (IC22, 17, male)

"The friendly recreation squares should provide enough space for different user groups, and avoid the mutual disturbance, in my mind." (IC23, 17, male)

"As a friendly square, it needs affordance towards the different usage needs, and then there will be more users, and the atmosphere will be more flourishing and energetic." (IC06, 25, Male)

"The recreation square should afford diverse people's diverse usage needs rather than become the exclusive place for a certain type of users." (IC35, 24, female)

The second is that the users expect the recreation squares to possess three capabilities, as the squares with socially beneficial value. These are: the capability to work as an information hub which can exchange and deliver information; the capability to act as a city's culture hub which can nourish and promote the local cultures; and finally, the capability to act as a promotion centre which can reflect and exhibit the new techniques and knowledge. These views are presented with the phrases as below:

"A socially friendly recreation square should provide the facilities for people to be able to grab the latest information and exchange the information as they want, such as fixed Wi-Fi facilities in the square." (IC22, 17, male)

“This is the information era; a good recreation square with socially beneficial value should be like a communication centre which could offer us opportunity to exchange the information and cultures.” (IC05, 40, male)

“Recreation Squares, especially a socially friendly square, should be like a service centre for the citizens, which can provide information and help.” (IC19, 24, male)

“It should be the window to exhibit and promote the city’s culture.” (IC19, 24, male)

“It should regularly have some socially useful activities which could cultivate the citizens’ sense of social responsibility, and promote and spread the city’s cultures.” (IC08, 20, female)

“The socially friendly squares should have differences between the normal days and the festival days. Further, it should be able to reflect the local cultures on some special days, such as spring festival.” (IC30, 26, male)

“It should reflect the new design concept and new techniques which could make people feel the city’s new look and its development.” (IC, 26, male)

“The square could be more attractive and socially friendly if it can use new neoteric stuff and techniques, such as illumination, water fountain and so on.” (IC19, 20, male)

“The square should apply and present the latest new techniques and city life concepts, e.g. low carbon life, water sensitive design, neoteric environmental protection techniques, because it is the best place for testing the new techniques and then promoting new life concepts.” (IC 24, 36, female)

The thoughts and suggestions of the criteria of socially beneficial urban square

Interview question Q2.5 is designed based on the research outcomes of Chapter 4 - the criteria of socially beneficial urban squares in the West. While the responses of the interviewees to this question reveal the users’ thoughts and suggestions of the criteria of socially beneficial recreation squares. According to the analysis of the answers to Q2.5 and the interviewees’ further elaborations, two issues are confirmed. The first is the identification of the factors which should be on the criteria list of socially beneficial recreation squares in the Chinese context; while the second is the users’ suggestions on these factors for improving the social value of recreation squares in the Chinese context – Guangzhou. In general, nine factors are confirmed by the users to generate the criteria list of socially beneficial urban squares in Guangzhou, which are specified as follows.

Location

In Q2.5, four sub-questions are set to explore the users’ ideas on this factor. These are: the attitude

to “near home”, the attitude to “near office”, the attitude to “near commercial building”, and the attitude to “near cultural buildings”. The interviewees’ answers (see figure 6.15 - 6.18) express that “near home” is the most important for the users in China, with “near commercial buildings” a close second, then “near cultural buildings”, while “near office” is the least important. This implies one usage feature of recreation squares in Guangzhou, even the rest of China. This is that most users of recreation squares prefer to use them outside their routine working hours and have no usage culture of using recreation squares during their break at work. Meanwhile the further elaborations of the users highlight that the recreation squares are expected to support a “compound leisure” style with the phrasing as below, which inform us that the users expect a recreation square to be located in an area with diverse functions.

“I prefer the square to be located at a place which is easily accessible, and especially that is located in a place which has retail units, then I can bring my daughter to eat out or have afternoon dim sum after she has played in the square.” (IC16, 40, male)

“I like the square which has some interesting and functional buildings surrounded it, like the Europe. You know, some small retail blocks and their window displays could attract more people, and also offer us a better place to relax.” (IC05, 53, female)

“It is important that the surrounding facilities of a square are self-contained.” (IC32, 30, male)

“It will be good to see that there are some retail units surrounded, such as shelters or coffee bars which are convenient for me to see and chat with friends, like in the Europe.” (IC35, 24, female)

“I like the square with certain cultural features. If there are some cultural facilities surrounded, e.g. museum, opera, I think my son could use the square far more than now.” (IC 24, 36, female)

【01】 Near home [Q2.5 Can you please evaluate how the following factors affect your usage of the type of urban recreation square based on your usage habits and needs? (Please tick one for each criterion)]

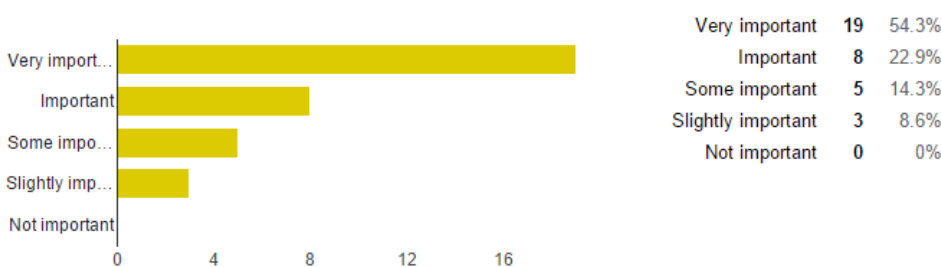


Figure 6.15 Answers to Q2.5 **【01】**

【02】 Near office [Q2.5 Can you please evaluate how the following factors affect your usage of the type of urban recreation square based on your usage habits and needs? (Please tick one for each criterion)]

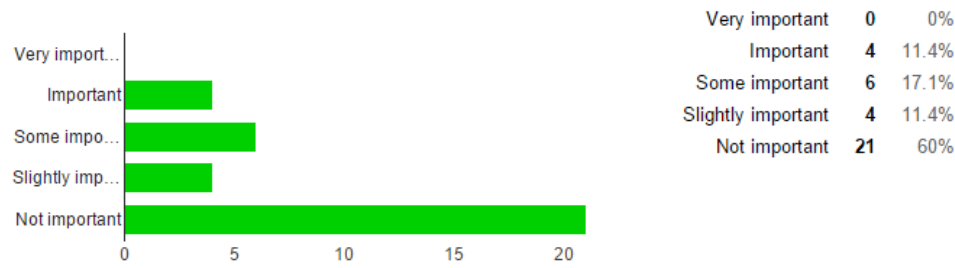


Figure 6.16 Answers to Q2.5 【02】

【03】 Near commercial buildings (e.g. Shopping mall) [Q 2.5 Can you please evaluate how the following factors affect your usage of the type of urban recreation square based on your usage habits and needs? (Please tick one for each criterion)]

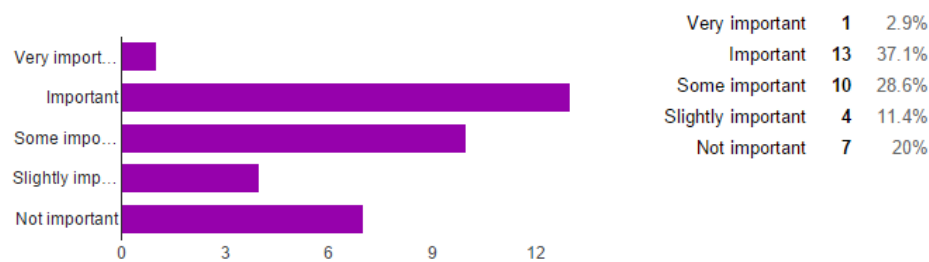


Figure 6.17 Answers to Q2.5 【03】

【04】 Near cultural buildings (e.g. Museum, opera) [Q 2.5 Can you please evaluate how the following factors affect your usage of the type of urban recreation square based on your usage habits and needs? (Please tick one for each criterion)]

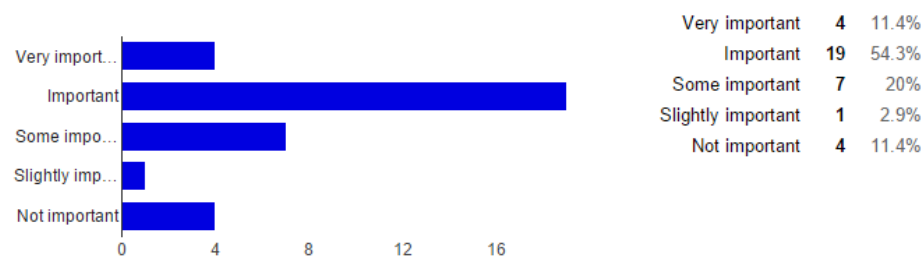


Figure 6.18 Answers to Q2.5 【04】

Accessibility

In Q2.5, three sub-questions are set to explore the users' ideas on this factor. These are the attitude to "easy to get to on foot", the attitude to "easy to get to by bus/underground" and the attitude to "easy to get by car". The interviewees' answers to these (see figure 6.19, 6.20, 6.21) plus their answers to Q3.2 (see figure 6.22) express that, "easy to get to on foot" is the most important for the users in Guangzhou; "easy to get by bus or underground" is the second most important; while "easy to get by car" is not important for them. This implies that the users in Guangzhou prefer to

get to recreation squares on foot or by public transport rather than by their own cars, although Guangzhou is a car city. Meanwhile, the users' further explanations to Q3.2 indicate that normally walking up to 15 minutes is acceptable to most of the users to regularly go to their preferred squares; while travelling by bus or underground within 30 minutes is also acceptable to them.

【05】 Easy to get to on foot [Q2.5 How do you evaluate the importance of the following factors for a recreation square based on your usage habits and needs? (Please tick one for each criterion)]

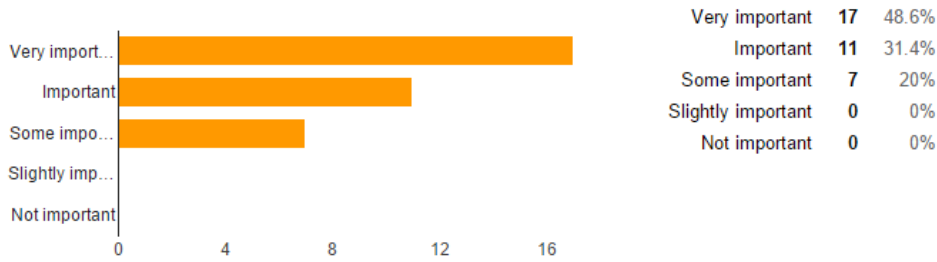


Figure 6.19 Answers to Q2.5 **【05】**

【06】 Easy to get to by bus/underground [Q2.5 How do you evaluate the importance of the following factors for a recreation square based on your usage habits and needs? (Please tick one for each criterion)]

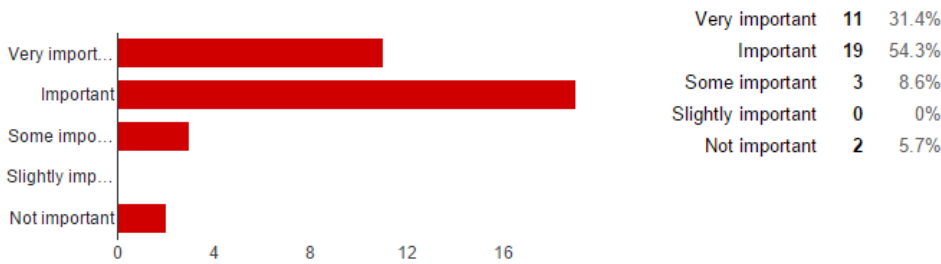


Figure 6.20 Answers to Q2.5 **【06】**

【07】 Easy to get by car and have a car parking nearby [Q2.5 How do you evaluate the importance of the following factors for a recreation square based on your usage habits and needs? (Please tick one for each criterion)]

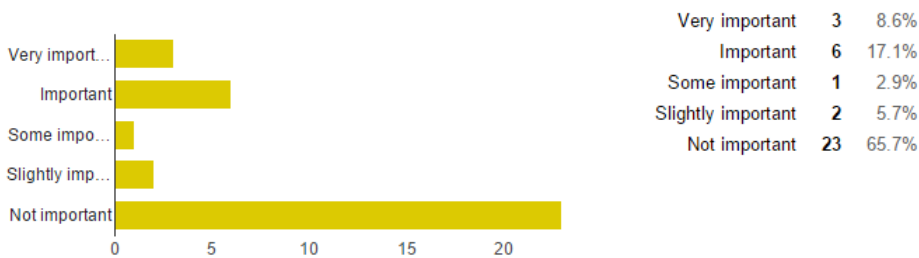


Figure 6.21 Answers to Q2.5 **【07】**

Q3.2 How do you come to this square? (Please tick one box from below)

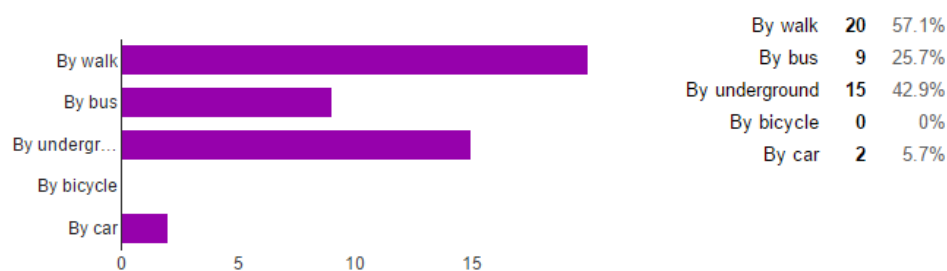


Figure 6.22 Answers to Q3.2

From the further explanations of some interviewees with regards to the issue of “accessibility”, it is found that, the users also expect recreation squares to not only provide easy and direct external access to all, but also internal access to all, with phrasing such as the following:

‘The accessibility design inside the square is quite important, especially for the disabled people.’ (IC27, 17, Female)

‘I hope that it is possible to access the greenery and flowers in the square.’ (IC34, 37, Female)

‘I hate that the green spaces are blocked by barriers which means that I cannot get into it, The square should integrate the green space and hard-paving space together, rather than split them, in my mind.’ (IC24, 36, Female)

Permeability

In Q2.5, four sub-questions are set to explore the users’ ideas on this factor. These are: the attitude to “visual permeability”, the attitude to “good access/linkage to its’ surroundings”, the attitude to “prosperous edge of the square”, and the attitude to the different layouts which will affect the permeability of a square. The interviewees’ answers (see figure 6.23, 6.24) express that most of the interviewees (31 people, 88.6% of the total) think that visual permeability is important, and 100% of the interviewees think that the physical permeability is important. Although no questions are set to investigate the users’ attitude of the olfactory and audible permeability, the interviewees’ phrases prove that these two issues also affect the users’ usage and perceptions of a recreation square, such as the following.

‘I prefer the square with birds-song and fragrance of flowers, and they can attract me to go into the square when I passing by.’ (IC02, 53, Female)

‘I like the plants with fragrance, especially the ones which can be smelled from a distance, such as sweet-scented osmanthus.’ (IC34, 37, Female)

【08】 Visual Permeability [Q2.5 How do you evaluate the importance of the following factors for a recreation square based on your usage habits and needs? (Please tick one for each criterion)]

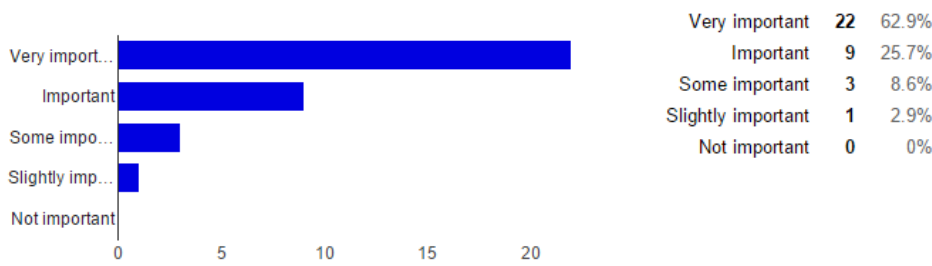


Figure 6.23 Answers to Q2.5 【08】

【09】 Good access/linkage to its’ surroundings [Q2.5 How do you evaluate the importance of the following factors for a recreation square based on your usage habits and needs? (Please tick one for each criterion)]

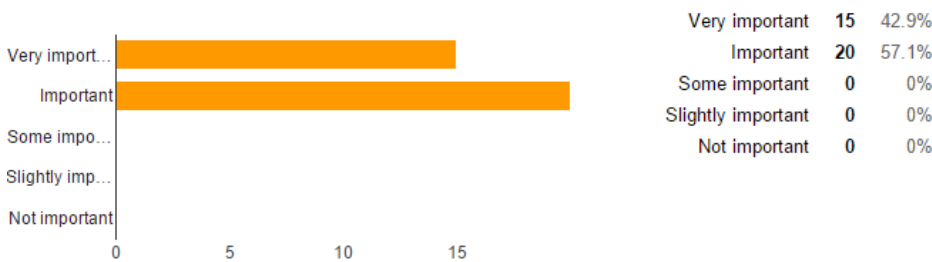


Figure 6.24 Answers to Q2.5 【09】

Meanwhile, there are 26 people (74.3% of the total) that declare that the prosperous edge of a square is an important factor which will affect their usage decision of this square (see figure 6.25). The answers to Q2.4 (see figure 6.26) further indicate the users’ preferred layout and disliked layout of the edge of a square. The popular layout is the “Corner Type” and the disliked layout is the “Passable Type”, because the layout of the “Corner Type “could offer the maximum physical permeability and visible permeability to a recreation square without breaking the linkage between it and its surroundings; while the layout of the “Passable Type” will break the integrity of a square both physically and mentally, and also potentially bring a few negative disturbances to it.

【10】 Prosperous edge of the square [Q2.5 How do you evaluate the importance of the following factors for a recreation square based on your usage habits and needs? (Please tick one for each criterion)]

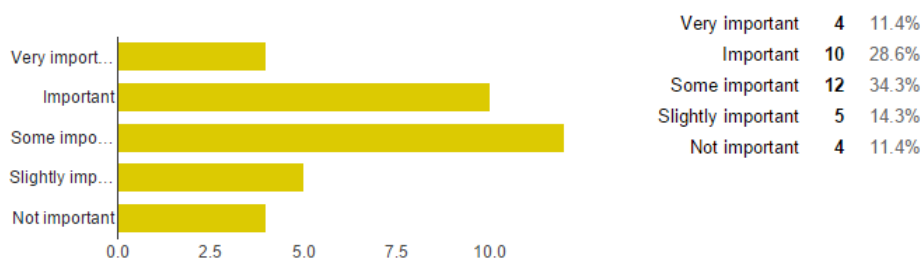


Figure 6.25 Answers to Q2.5 【10】

Q2.4 Can you please rank the following types of layout out of recreation urban squares according to your preference for use?

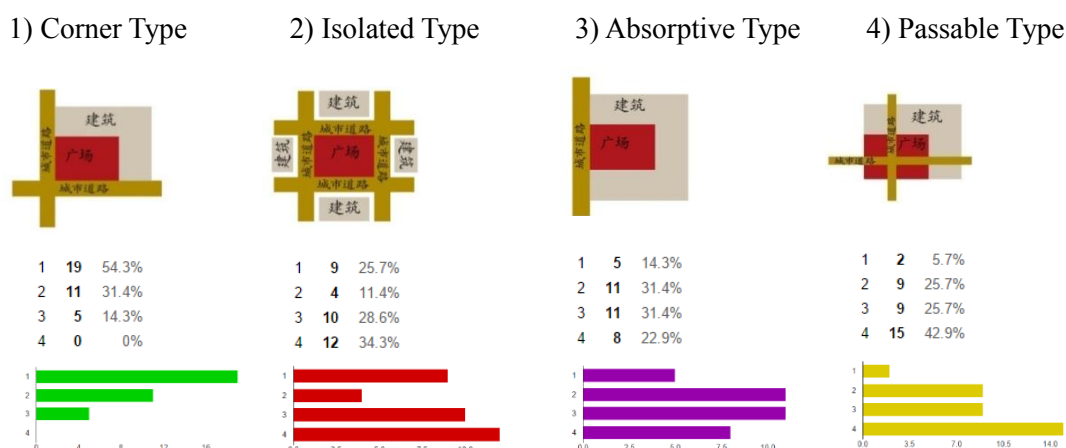


Figure 6.26 Answers to Q2.4

Safety and security

In Q2.5, two sub-questions are set to explore the users' ideas on this factor. These are the attitudes to the issues of "safety" and "security". The first analysis diagram of the answers below (see figure 6.27) indicates that all of the interviewees think "safety" is an important factor which will significantly affects their usage of a recreation square. Furthermore, a majority of them (34 people, 97.1% of the total) confirm that "safety" is a "very important" factor that will affect their usage.

【11】 Safety [Q2.5 How do you evaluate the importance of the following factors for a recreation square based on your using habit and needs? (Please tick one for each criterion)]

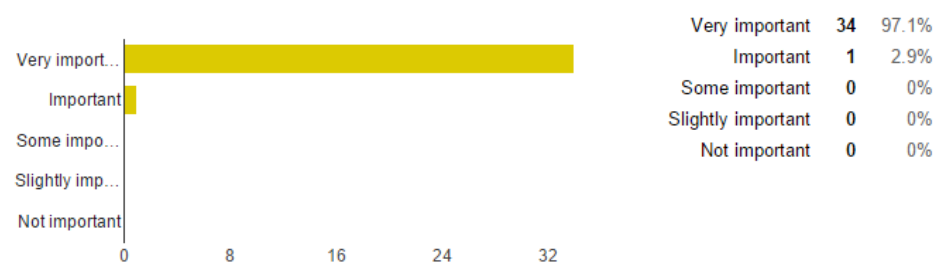


Figure 6.27 Answers to Q2.5 【11】

Meanwhile, in the users' further elaborations, a number of interviewees mentioned a number of unsafe items caused by the improper design, for example, the large sunken fountain, over light paving illumination, large slippery paving, a lack of illumination, and so on, with the phrasing such as below. This further implies that unsafe items could be reduced and controlled by delivering proper design.

"I wish the water fountain did not have a sunken space, or at least it could be shielded by a grid plates. Then people could passed-through safely, otherwise it is dangerous for the people.

especially for the children.” (IC33, 34, Female)

“The paving lighting in the square is a bit over bright which will damage the children’s eyes when they play on the ground.” (IC34, 37, Female)

“The paving around the fountain is too smooth, and is quite slippery after raining or the performance of the fountain, which is a bit dangerous for the old people and children.” (IC32, 30 male)

According to the attitude to square “security”, the second analysis diagram of the answers below (see figure 6.28) indicates that most of the interviewees (29, 82.9% of the total) think security is needed and is an important factor which will affect their usage.

【12】 Security (security guard) [Q2.5 How do you evaluate the importance of the following factors for a recreation square based on your using habit and needs? (Please tick one for each criterion)]

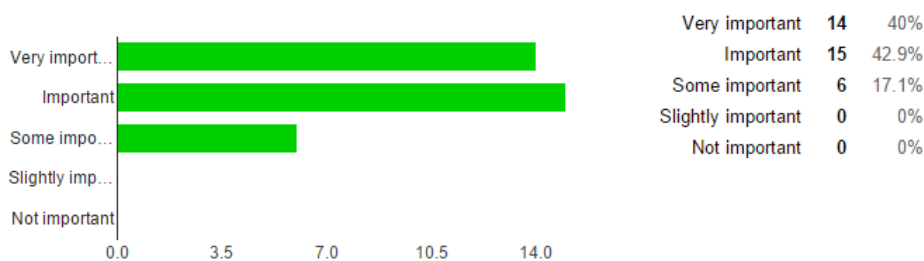


Figure 6.28 Answers to Q2.5 **【12】**

However, in the further elaborations, some interviewees present a view that over security should be avoided because it will make the users uncomfortable and reduce the friendly atmosphere of a square especially in a recreation square, with the phrasing such as:

“It will be good to see that there is square security, but I don’t like them wondering around too much in the square and too close to me, because in that case, I will feel I am being monitored.” (IC20, 35, Male)

“I like to know that the square is secured and is safe, but I don’t like to see a patrol wagon parking in the square with equipped police, because it makes me nervous and potentially forewarn that there are bad things happening or are going to happen. If I see that, I will not use the square.” (IC01, 19, Female)

Although criminal behaviour could be significantly controlled and reduced by the presence of security in the square, unconventional behaviour which will also affect the users’ usage could not be. The question Q3.6 investigates what kinds of behaviours are treated as unconventional behaviour in a recreation square in users’ mind in Guangzhou, and even the rest of China. From

the analysis of the answers, it is discovered that the users in Guangzhou are more tolerant to the others' behaviour, and the unconventional behaviours are identified as the behaviours which are not civilised and will potentially bring risk and damage to a square and its users. In general, in Guangzhou, the unconventional behaviours could be summarised into two categories. The first contains the behaviours which will potentially bring harm to the other people's physical health e.g. smoking, spitting, littering. The second contains the behaviours that will negatively affect the others' physiological health and comfort, e.g. overly intimate behaviour, dog walking, the presence of homeless people. Furthermore, the answers of the interviewees clearly pointed out that any commercial activities (besides the small scale service) and noisy behaviours are not welcomed in the recreation squares. These views are supported by the interviewees' phrases, such as:

"I don't like the uncivilised behaviours e.g. spitting, littering; while I also don't like to see the noisy activities in the recreation square." (IC07, 55, Female)

"I would like to see the elegant and civilised behaviours, I hate to see people smoking, couples' over familiarity in the square." (IC24, 36, Female)

"I don't like to see people passing-through by bicycle because it is dangerous for the other pedestrians and other users, while I also worry the young children's playing on toy bicycle will hurt the others because they are too young to control themselves." (IC22, 17, Male)

"I hate people walking the dogs in the square, especially some of them don't keep them on a lead. It is particularly dangerous for the children and the people who fear of dog." (IC35, 24, Female)

Scale

In Q2.5, one direct question is set to explore the users' ideas on this factor. The analysis diagram of the answers below (see figure 6.29) indicates that the factor of "scale" is at least important for most of the interviewees (30 people, 85.7% of the total), and "some important" for a minority of the interviewees (4 people, 11.4%), and "not important" for only one person. This fact proves that the issue of scale is also an important factor for most users in their usage of a recreation square, and therefore it should be on the criteria list of socially beneficial urban squares.

【13】 Human scale (Not too big or small) [Q2.5 How do you evaluate the importance of the following factors for a recreation square based on your usage habits and needs? (Please tick one for each criterion)]

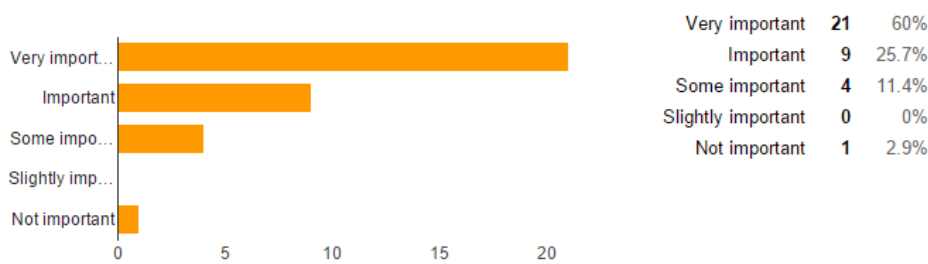


Figure 6.29 Answers to Q2.5 【13】

Although there are no users that recommend any specific square sizes in their further elaborations, their comments below offer the author an inspiration of how to control the scale issue in the design. It is found that the users normally evaluate the good or bad degree of scale of a recreation square based on their own usage behaviours. When the scale is suitable for their behaviours, they will be satisfied with it; otherwise they will not be satisfied. Therefore, considering the potential main behaviours, and offering the appropriate scale to meet the requirements of these behaviours, could be an effective way to make the majority of users feels comfortable with the scale of a square.

“I hope the square could provide a bigger flat space for our dancing, it is too crowded in the evening.” (IC10, 53, Female)

“I like the square having the large and flat space which the parks or other green spaces could not provide, then my grandson could successfully rollerblade here.” (IC14, 65, Male)

“Currently the distance between the benches and water fountain is a bit close. When I sit, I cannot see the whole water fountain and have to raise/turn my head, not comfortable.” (IC 32, 30) Male)

Legibility

In Q2.5, five questions are set to explore the users’ ideas on this factor. The first analysis diagram of the answers below (see figure 6.30) indicates that all of the interviewees agree that if a recreation square has specific and defined features, it could effectively offer the square legibility and then encourage more people to use it. While the second analysis diagram of the answers below (see figure 6.31) demonstrates that most people (33 people, 94.3% of the total) confirm that the factor of having good photographic features could significantly affect their usage of a recreation square. Furthermore, the interviewees’ further elaboration indicate that a recreation square which has good photographic opportunities could attract them to use the square and make them stay there longer. Meanwhile the third analysis diagram of the answers (see figure 6.32) reveals that there are 77.1% of the interviewees that confirm that offering appreciable and clear signs to a recreation square could significantly improve the sense of friendliness of it to them, and benefit towards improving the legibility of that recreation square in their mind. In addition, the interviewees present a fact that the shape of a recreation square is not that important to them (see

figure 6.33); however the attribute of “playfulness” is fairly important to them, which is discovered by the fact that there are 31 people (88.6% of the interviewees) who agree with this point (see figure 6.34).

To summarise, for the users in Guangzhou, with regard to the issue of legibility, the possibility for them to take good photographs and the quality of the signs are two main criteria for them to evaluate the legibility of a recreation square. Meanwhile, for the users in Guangzhou, the layout shape is not important but the attribute of “playfulness” is desired and needed by not only the children but also by the adults.

【14】 Has specific and defined features [Q2.5 How do you evaluate the importance of the following factors for a recreation square based on your usage habits and needs? (Please tick one for each criterion)]

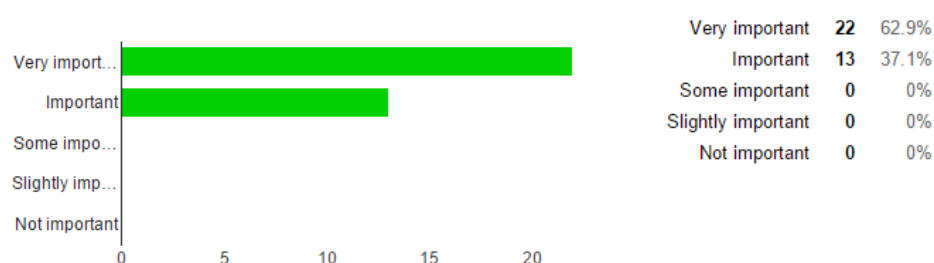


Figure 6.30 Answers to Q2.5 **【14】**

【15】 Has good photographic features [Q2.5 How do you evaluate the importance of the following factors for a recreation square based on your usage habits and needs?]

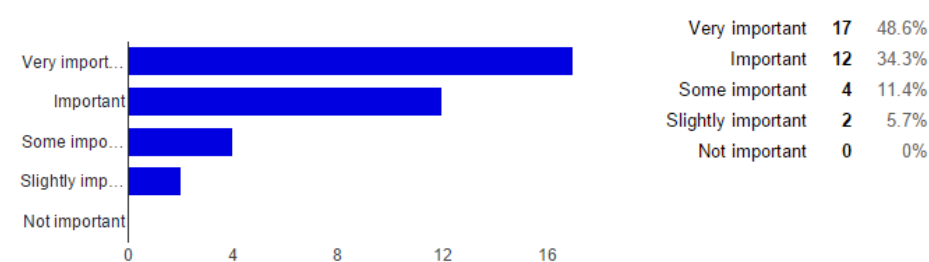


Figure 6.31 Answers to Q2.5 **【15】**

【16】 Appropriate and clear signs [Q2.5 How do you evaluate the importance of the following factors for a recreation square based on your usage habits and needs? (Please tick one for each criterion)]

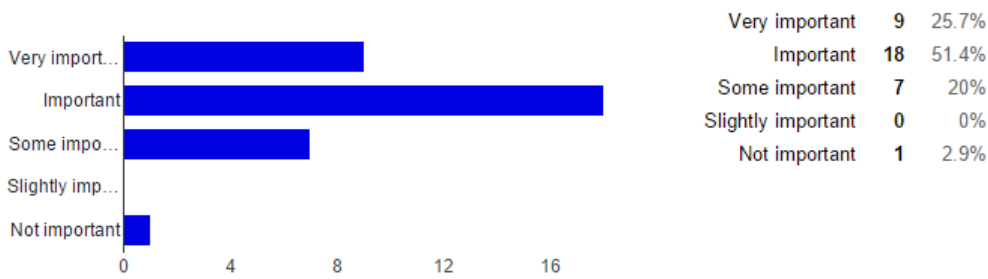


Figure 6.32 Answers to Q2.5 【16】

【17】 The shape of square [Q2.5 How do you evaluate the importance of the following factors for a recreation square based on your usage habits and needs? (Please tick one for each criterion)]

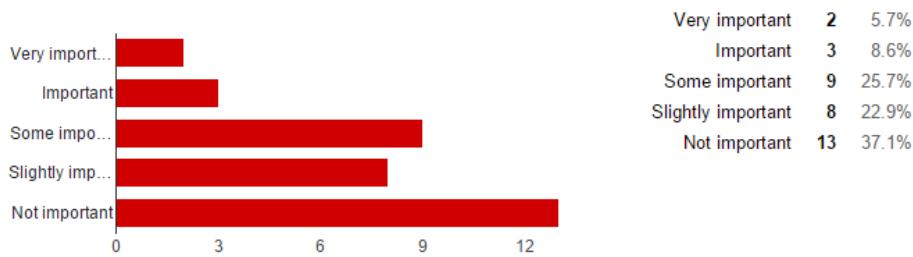


Figure 6.33 Answers to Q2.5 【17】

【18】 Playful [Q1.2.5 How do you evaluate the importance of the following factors for a recreation square based on your usage habits and needs? (Please tick one for each criterion)]

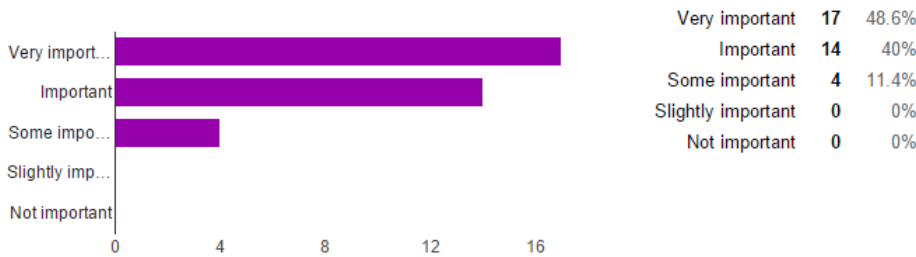


Figure 6.34 Answers to Q2.5 【18】

The sense of amenity and comfort (internal physical attractions)

Because the users’ perceptions of amenity and comfort of a recreation square significantly depend upon the users’ local cultures and their personal preferences, this factor is offered significant attention in the design of Q2.5 to investigate the real thoughts of the users of recreation squares in Guangzhou. Finally, 23 sub-questions are set to identify the exact physical attractions which will significantly affect the users’ perceptions of amenity and comfort.

The analysis of the answers to these 23 sub-questions with the users’ further elaborations and the answers to Q1.2.0, Q2.2, Q2.3 clearly support the author in identifying the physical attractions and their importance levels for the users in Guangzhou. In general, these attractions could be

classified into three categories. These are natural setting, recreation facilities and human contact which correspondingly echo the users' desires and needs of "contacting with natural setting", "contacting with recreation facilities", and "contacting with human". These are illustrated in detail below.

Natural Setting

From the interviewees' responses, it is found that, four internal physical attractions could be organised into the category of natural setting. While sorting these in a descending order according to their degree of influence on the users' usage decisions and perception in Guangzhou, the correct order are: the availability of plants, the availability of water features, the availability of graceful landforms and level changes, and finally the availability of stone features. This is because the analysis diagrams (see figure 6.35 – 6.38) presents that 100% of the interviewees admit that the availability of plants is important (and very important) for them; 65.7% of the interviewees think that the availability of water features is important (and very important) for them; 51.4% of the interviewees think that the availability of landforms and level changes is important (and very important) for them; while only 5.7% of the interviewees agree that the availability of stone features is important for them. This finding indicates that, in Guangzhou, offering greenery, water features, and landforms/level changes to a recreation square is desired by the users; meanwhile the quality of these will significantly affect the users' perceptions of the amenity and comfort of that recreation square.

【19】 Availability of plants

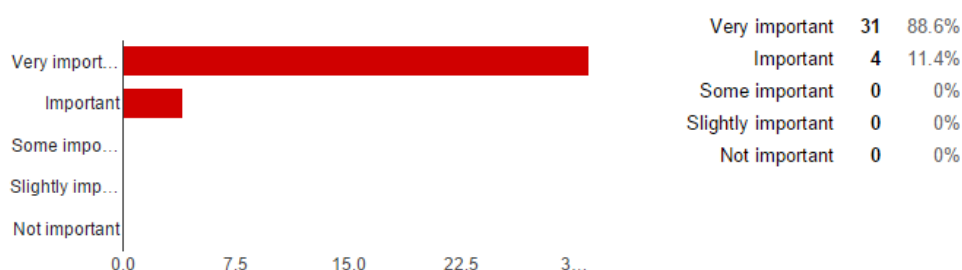


Figure 6.35 Answers to Q2.5 【19】

【20】 Availability of water features

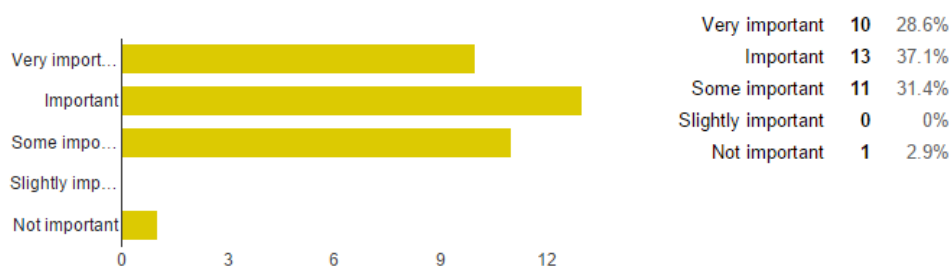


Figure 6.36 Answers to Q2.5 【20】

【21】 Availability of landforms and level changes

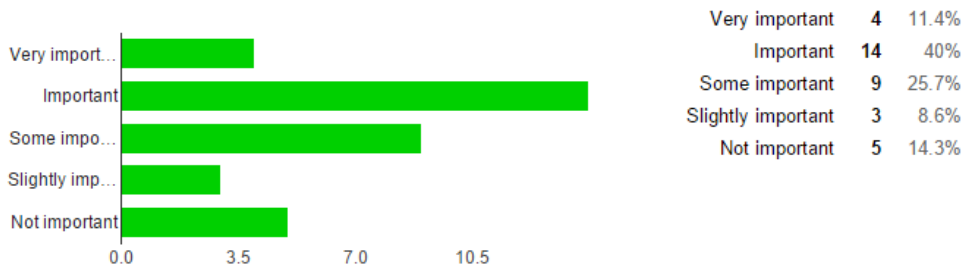


Figure 6.37 Answers to Q2.5 【21】

【22】 Availability of stone features

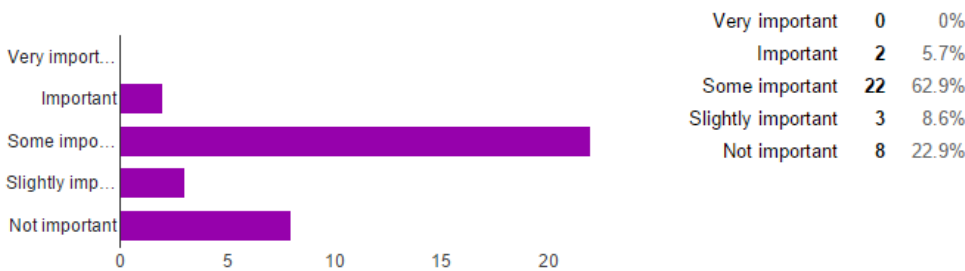


Figure 6.38 Answers to Q2.5 【22】

While in the interviewees’ further elaborations, they expressed their desires and suggestions on the above factors, which could be treated as the solid and valuable evidences to develop the criteria of socially beneficial urban squares. Therefore, the author collected them and summarised them in terms of the above corresponding factors as follows:

The desires in terms of plants:

- To be colourful, diverse, vivid and in an appropriate format to meet the visual demand.
- To be integrated with the other soft and hard materials e.g. paving, benches, illuminations, fountains, rather than to be presented alone, to contribute towards meeting the function demand.
- To be open to the public and to work as the element which can be enjoyed by the users, rather than only being a green boundary for a recreation square.

The desires in terms of water features:

- To be in an appropriate size to the overall scale of a recreation square to meet the demands of comfort for users and the demands of affordance for the diverse behaviours.
- To be presented in a safe manner to meet the demands of safety.
- To be able to be enjoyed at all times or at least most times of a day rather than at limited and

specific times.

The desires in terms of landforms and level changes:

- To play a positive role on shaping subspaces and semi-public spaces in a recreation square, rather than to only resolve the issue of height differences.
- To be able to protect a recreation square from the external traffic pollution and visual pollution.
- To improve the accessibility of a square for all, especially for the people with special needs, e.g. the disabled, people with baby strollers, and so on.

Recreation Facilities

From the interviewees’ responses, it is found that thirteen internal physical attractions could be organised into the category of recreation facilities. While sorting them into descending order according to their degree of the importance and influence on the users’ usage decisions in Guangzhou, the correct order will be: the availability of illumination, the availability of appropriate paving, the availability of outdoor retail kiosk(s), the availability of seating, the availability of sunshade(s) or similar structure(s), the availability of electronic facilities for searching information, the availability of stage(s) for group events/activities, the availability of fitness facilities, the availability of sculpture(s)/art, the availability of city volunteers’ stop(s), the availability of big screen(s) for broadcasting significant information, the availability of newspaper bulletin board(s), and finally, the availability of newspaper selling kiosk(s). This is discovered from the analysis diagrams below (see figure 6.39 - 6.51). Besides these, the interviewees’ further elaborations mentioned another physical attraction many times which should also be organised into this category. This is the parent-child corner. Therefore, in the recreation facilities category, there are 14 internal physical attractions in total, which will significantly affect the users’ usage decisions and perceptions of recreation squares in Guangzhou.

【23】 Availability of Illumination

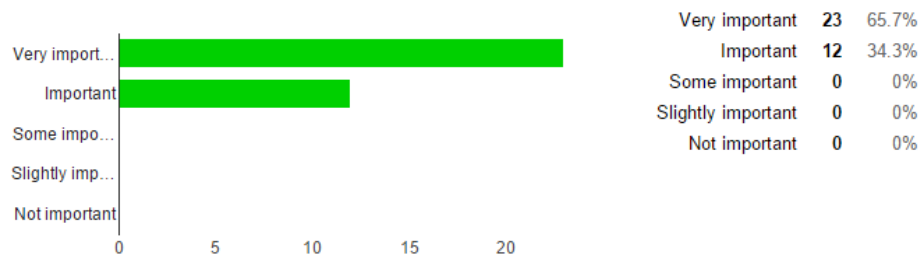


Figure 6.39 Answers to Q2.5 【23】

【24】 Availability of appropriate paving

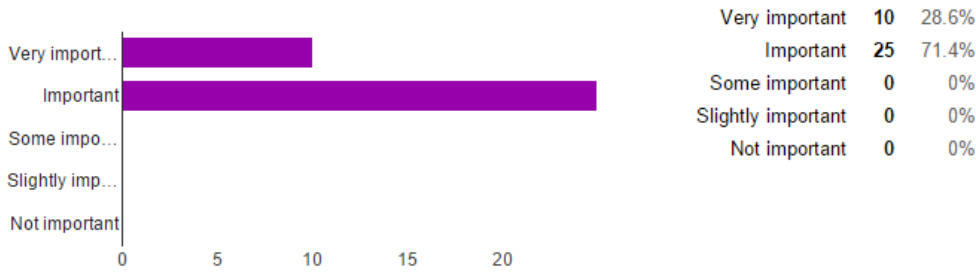


Figure 6.40 Answers to Q2.5 **【24】**

【25】 Availability of outdoor retail kiosk(s)

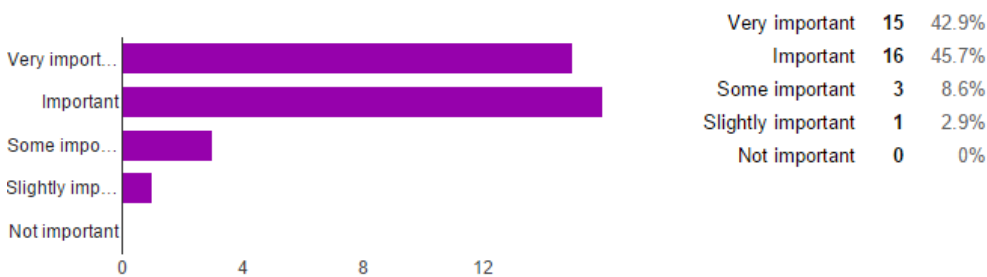


Figure 6.41 Answers to Q2.5 **【25】**

【26】 Availability of seating

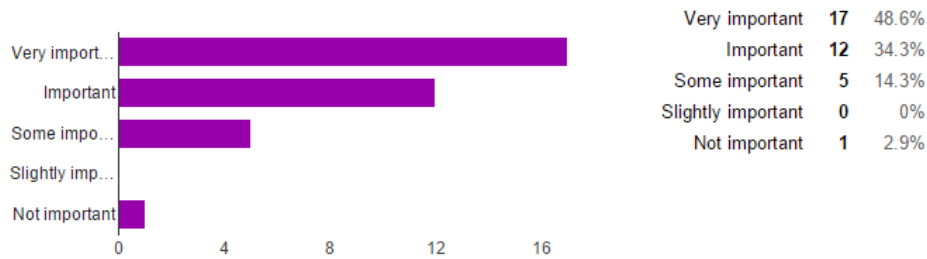


Figure 6.42 Answers to Q2.5 **【26】**

【27】 Availability of sunshade(s) or similar structure(s)

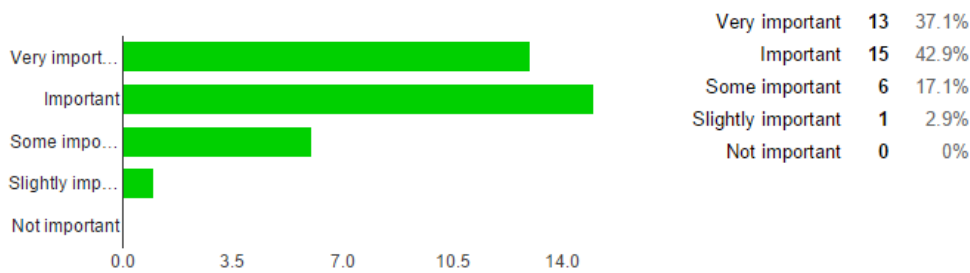


Figure 6.43 Answers to Q2.5 **【27】**

【28】 Availability of electronic facilities for searching information available (e.g. local map, social events and the other information of city)

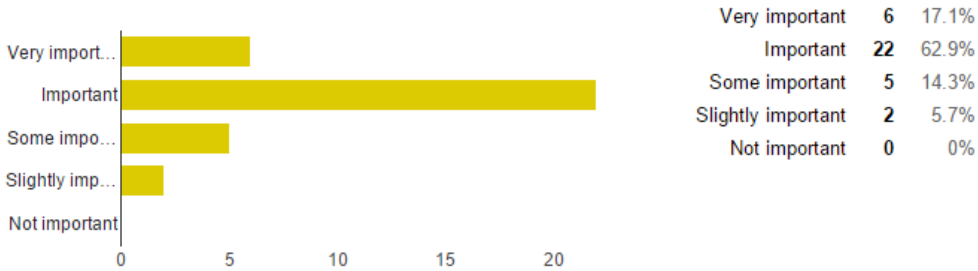


Figure 6.44 Answers to Q2.5 【28】

【29】 Availability of a stage(s) for group events/activities

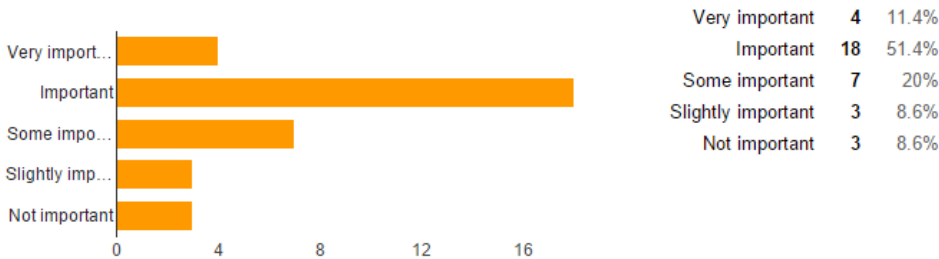


Figure 6.45 Answers to Q2.5 【29】

【30】 Availability of fitness facilities

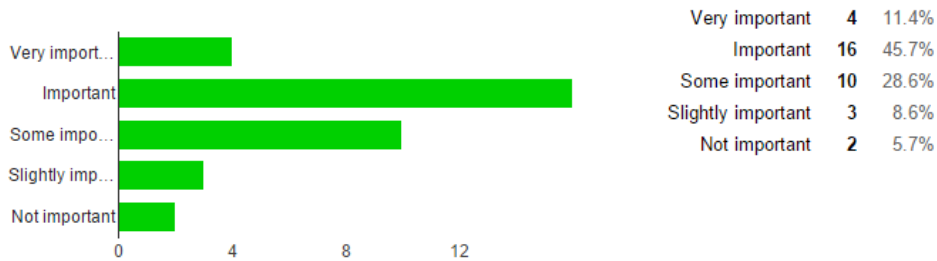


Figure 6.46 Answers to Q2.5 【30】

【31】 Availability of sculpture(s)/art

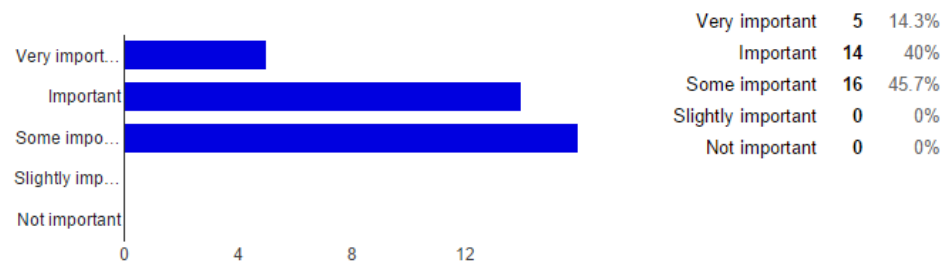


Figure 6.47 Answers to Q2.5 【31】

【32】 Availability of city volunteers' stop(s)

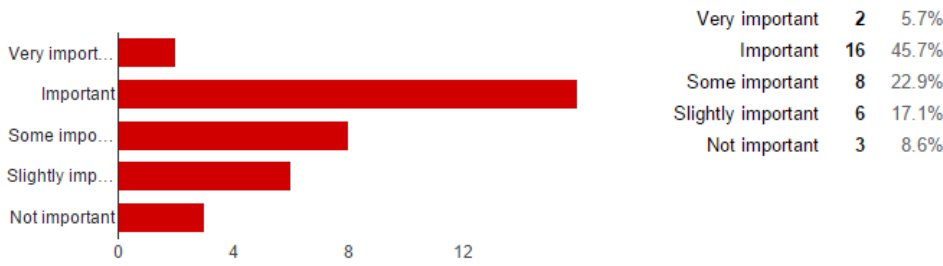


Figure 6.48 Answers to Q2.5 【32】

【33】 Availability of big screen(s) for broadcasting significant information

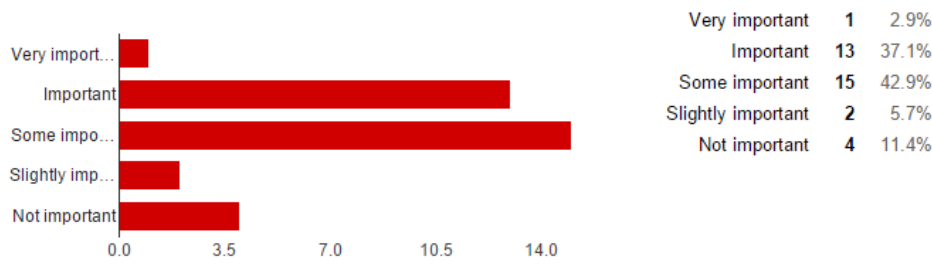


Figure 6.49 Answers to Q2.5 【33】

【34】 Availability of newspaper bulletin board(s)

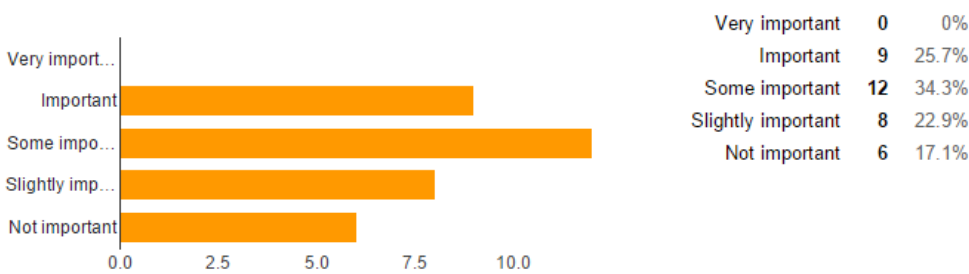


Figure 6.50 Answers to Q2.5 【34】

【35】 Availability of newspaper selling kiosk(s)

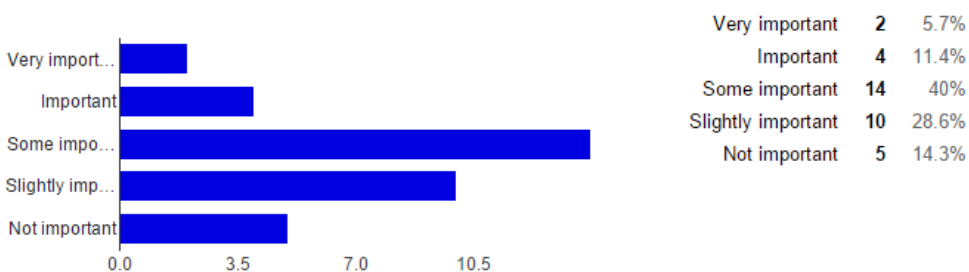


Figure 6.51 Answers to Q2.5 【35】

Furthermore, based on the interviewees' further elaborations, the desires and suggestions on each

physical attractions in this category are summarised. Due to the low degree of recognition for the importance of the attractions of “the availability of newspaper bulletin board(s)” and “the availability of newspaper selling kiosk(s)”, in this thesis, only the following twelve physical attractions are offered the further analysis.

The desires in terms of Illumination:

- To be offered appropriate lighting with diverse illumination methods.
- To be located in proper locations to avoid the existence of dark corners.
- To be offered in appropriate manners to avoid harm to the user’ physical and mental health.

The desires in terms of paving:

- To be offered in appropriate materials, colours, and fun patterns, to meet both the functional and visual demands.
- To appear to be harmoniously different between the different sub-areas of a recreation square to improve both the integrality of a recreation square as a whole and the distinguishable identities of its different sub-areas.
- To distinguish and signify the transitions between the sidewalks and a recreations square, whilst creating a welcoming atmosphere.

The desires in terms of outdoor retail kiosk(s):

- To be located in a visible and easily accessed position, to meet the demand of the usage convenience.
- To be close to seating or have some movable chairs, to meet the demand of comfort.
- To have appropriate outlook and size within a recreation square to meet the demands of vision and comfort.

The desires in terms of seating:

- To have diverse seat arrangements to meet the usage demands of four different users’ group (single users, couple users, friends’ users, and family users).
- To be placed in different areas with different orientations (sunny to shady) to meet the different usage demands of diverse users.
- To offer diverse display forms which include formal seating opportunities (benches) and informal seating opportunities (slopes, steps, retaining walls).

- To offer quality and comfortable seating opportunities with regards to the material, colour, and outlook (with or without back), to meet the demands of function and comfort.
- To offer enough formal seating opportunities to meet the demands at the usage peak times.

The desires in terms of sunshade(s) or similar structure(s):

- To be provided near seating opportunities to improve the users' sense of comfort in the usage.
- To have an appropriate size and number to support the usage of a certain number of people at the same time.
- To have an appropriate outlook and be capable of being retractable to meet the demands of both function and vision.

The desires in terms of electronic facilities for searching information:

- To be provided in reasonable numbers and locations which are not only convenient for the users' usage but also convenient for the management.
- To be user-friendly equipment to meet the demand of comfort.

The desires in terms of stage(s) for group events/activities:

- To be suitable for usage both at times when there are events or activities and when there are not.
- To be provided with different paving patterns to distinguish the stage area from the whole recreation square.
- To have a relatively appropriate size to the whole recreation square to offer equity to the users who participate in the events/activities in the stage area and the users who do not.

The desires in terms of the availability of fitness facilities:

- To be located in a corner with a diverse range of sports equipment for the different needs of diverse users.

The desires in terms of sculpture(s)/art:

- To match the local cultures and aesthetic standards to meet the demand of comfort.
- To have a specific significance which is either educational that could delivery knowledge to the users, or playful that could offer a sense of delight to the users.

- To be specific and be able to be interacted with by users to improve the legibility and the users' sense of participation of a recreation square.

The desires in terms of city volunteers' stop(s):

- To be located in a visible and easily accessible place to meet the demand of the usage convenience.
- To be open for the whole day or at least at the usage peak times to provide services (e.g. promoting city cultures, or offering help) to the public, which include both staying-in users and passing-through/by users.

The desires in terms of big screen(s) for broadcasting significant information:

- To be appropriately sized and to be placed at a location with a suitable distance and angle to the main seating areas to ensure the visual perceptions.

The desires in terms of a parent-child corner:

- To be located in a relative semi-enclosed safe corner away from the disturbances of city traffic and surrounding buildings, but with a certain visual permeability, to meet the safety and security demand.
- To have diverse interesting playground facilities and enough seating opportunities to meet the diverse usage needs of the families with different aged children.

Human Contact

From the interviewees' responses, it is found that, seven internal physical attractions could be organised into the category of human contact. While sorting them in a descending order according to their importance and degree of influence to the users' usage decision and perceptions in Guangzhou, the correct order will be; the availability of shows or performances (mainly for watching, rather than for participation), the availability of activities which can be participated in, and finally, the availability of commercial promotion events. This is discovered from the analysis diagrams below (see figure 6.52 – 6.54). This fact implies that contact with the other users is also one of main desires of the users in Guangzhou. This further proves that the users' attitude towards creating social interaction in recreation squares in Guangzhou is positive. Furthermore, it states that users of recreation square in Guangzhou prefer "passive human contact" rather than "active human contact". This implies that people can also be one kind of attractions for square's users in Guangzhou, which echoes the theory of "people attract people" in the West (Gehl, 1987; Whyte, 1980). Meanwhile, the users clearly present that commercial promotion events or similar activities

are not welcome in recreation squares.

【36】 Availability of shows or performances (mainly for watching, rather than for participation) available (e.g. dance show, singing show, skateboarding show)

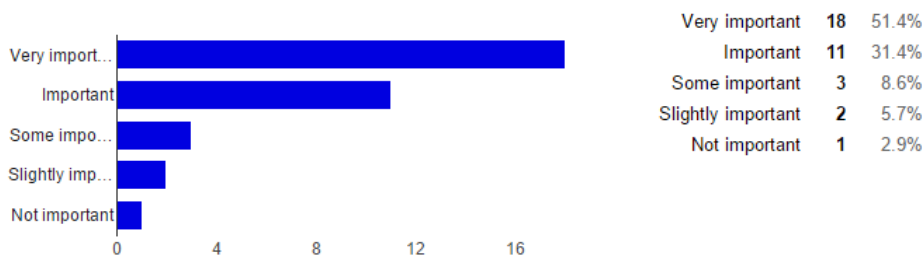


Figure 6.52 Answers to Q2.5 **【36】**

【37】 Availability of activities which can be participated in

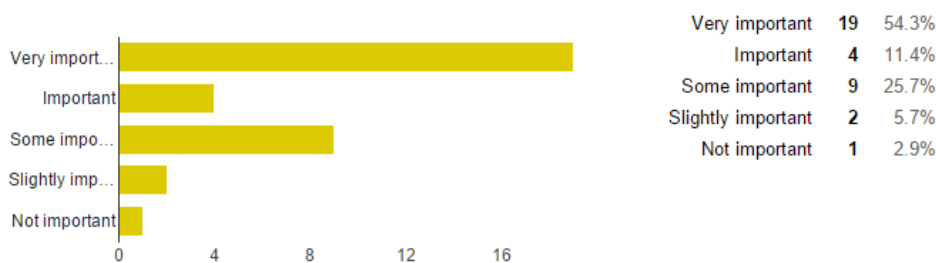


Figure 6.53 Answers to Q2.5 **【37】**

【38】 Availability of commercial promotion events

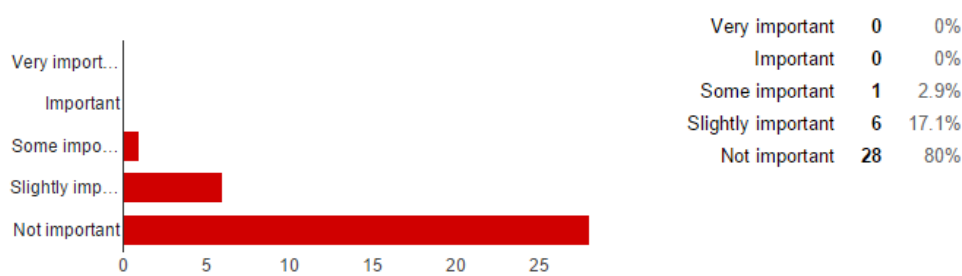


Figure 6.54 Answers to Q2.5 **【38】**

While in the interviewees’ further elaborations, they further proved that “watching others and their life” is one of the main joys when they use a recreation square and they like to see the sweet scenes and others’ smiles, with phrasing such as:

‘I hope this square could support more diverse users and their behaviours, because I like to see different people and interesting things occurring in the square.’ (IC04, 30, female)

'I like to see the others relaxing in the square, especially the sweet scenes of the family usage, because it could make me more relaxed and cosy.' (IC31, 23, female)

'I like to watch the performances, and prefer to come to Hero Square in the evening because there are a number of people dancing at that time.' (IC19, 24, male)

While with regards to the activities which are either for watching or for participating in, the users also raised their desires and suggestions, which could be summarised as follows:

- The shows or performances mainly for watching are expected to match the majority's preference to meet the demands for recreation of the maximum proportion of the users.
- The shows or performances mainly for watching are expected to be located in an appropriate place with suitable size and good management to minimize their impact on the users who are not interested in them, to meet the diverse recreation demands.
- The issues of safety and visual perceptions need to be considered in the construction of the temporary facilities for the shows or performances when they apply.
- The activities which can be participated in are expected to be offered in different "territories" to different activity groups, to minimize the mutual interferences amongst each other.
- The activities which can be participated in by all are expected to be held at regular times, to form a vibrant square culture.

Except for the above three sub-questions, a further four sub-questions are set to investigate the users' preferred atmosphere of a recreation square. Here, from the analysis diagrams (see figure 6.55 – 6.58), it is found that, 97.1% of the interviewees think that providing a good atmosphere for friends' usage is important (or very important) to them; 91.5% of the interviews think that providing a good atmosphere for family's usage is important (or very important); 80% of the interviewees think that providing a good atmosphere for single's usage is important (or very important), and only 20% of the interviewees think that providing a good atmosphere for couple's usage is important (or very important). This fact implies that one of the usage preferences of the users in Guangzhou is that they prefer to use the squares with their friends and family, rather than by themselves or with their boyfriend/girlfriend in Guangzhou.

【39】 Good atmosphere for friends' gathering and recreation

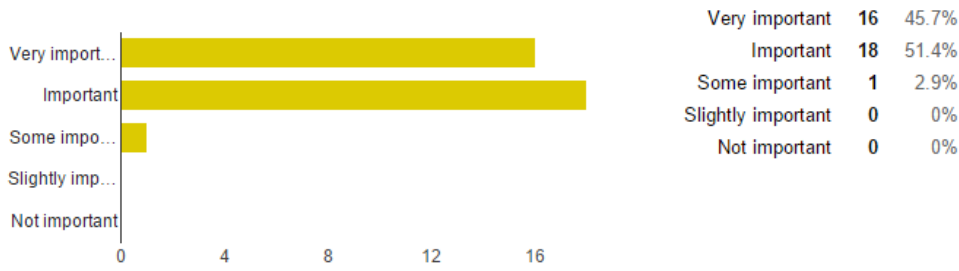


Figure 6.55 Answers to Q2.5 【39】

【40】 Good atmosphere for family users' recreation

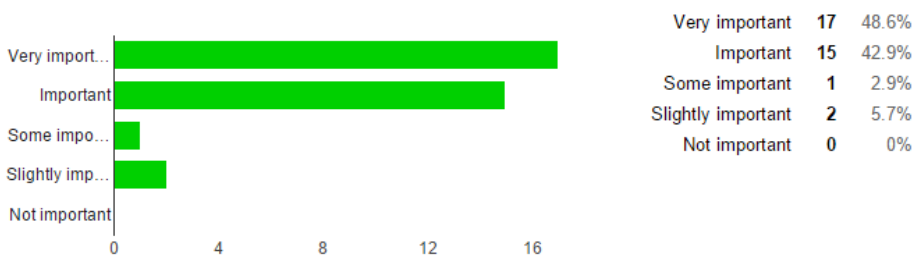


Figure 6.56 Answers to Q2.5 【40】

【41】 Good atmosphere for single users' recreation

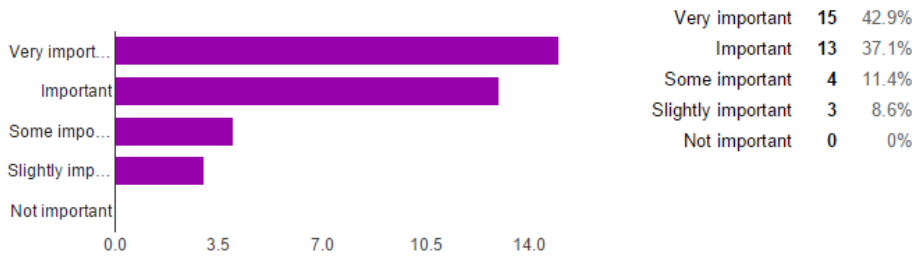


Figure 6.57 Answers to Q2.5 【41】

【42】 Good atmosphere for couple users' recreation

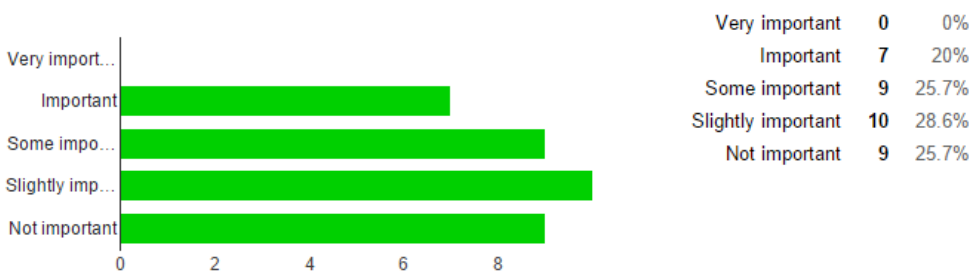


Figure 6.58 Answers to Q2.5 【42】

Territoriality and equity

In Q2.5, one sub-question is set to investigate the users' innermost thoughts with regards to the issue of territoriality and equity. From the responses of the interviewees which include both the answers to the sub-question (see figure 6.59) and the further elaborations (see below), two relevant matters are discovered. The first is the existence of "territorial conflicts" amongst different behaviours; and the second is the desire for equity in the usage of the recreation squares.

"Currently there are too many people, especially older people occupying the squares for group dancing, they occupied too large a space and play their music loudly which makes Hero Square too crowded and noisy. I hate that because it means I cannot find a proper spot for relaxing in the square that is why I seldom come to this square in the evening." (IC07, 53, male)

"I hope to have a quiet corner for practicing the flute and relaxing; I don't like a recreation square that only has a large paving area and a few people walking up and down in front of me." (IC03, 65, Male)

"I hope the square can provide a larger flat paving space, then different square dancing groups will not disturb each other, whether on atmosphere or on space." (IC10, 53, female)

"If I go skateboarding, I will come to this square after 22:00 because at the other times in the evening, the people who do square dancing will drive us to the other place. It is really annoying!" (IC23, 17, male)

"I really hate the children who wonder around by riding toy bicycles in the square, because it will disturb our rehearsing of street dance. If we brush up against them, their parents will argue with us. Meanwhile, we may be hurt by them." (IC22, 17, male)

【43】 Availability of equity

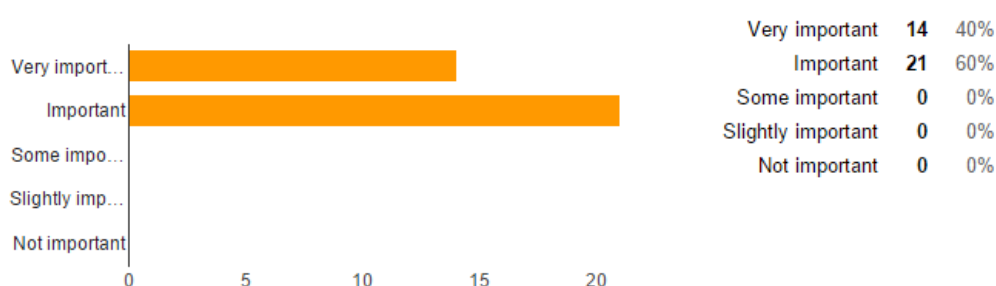


Figure 6.59 Answers to Q2.5 【43】

In conclusion, it can be summarised that the issue of territoriality and equity is also a significant factor in influencing the people's usage perceptions and usage decisions of recreation squares in Guangzhou. Therefore it should be included on the criteria list and should be offered a sufficient level of concern in the planning and design process. But one point which needs to be clarified here is that the equity in the territory allocation does not mean "equal territory", but means a

balance of usage opportunities across different ethnic backgrounds, ages, genders, abilities, and usage behaviours.

Robustness and management

In Q2.5, two sub-questions are set to explore the users’ ideas on this factor. The following two analysis diagrams (see figure 6.60 – 6.61) indicate that both robustness and management are important, but the issue of management is more important for the users’ usage perceptions and decisions. This proves that the issues of robustness and management should also be included on the criteria list of socially beneficial recreation squares.

For the issue of robustness, it is found that the users who have specific activities to attend in a recreation square prefer that the square stays the same. The users who prefer to watch others and have no particular usage aims prefer that the square has a high robustness and is changeable. For the issue of management, it is found that the users’ concerns relating to the management issue could be summarised into two categories. The first is the maintenance of a recreation square, e.g. cleanliness, up-keep of the facilities with no risk, and the maintenance of planting. The second is the control and management of the behaviours, events, and programs. These findings highlight the issues that the designers should consider in the design process when they plan to deliver a socially beneficial recreation square.

【44】 Availability of robustness

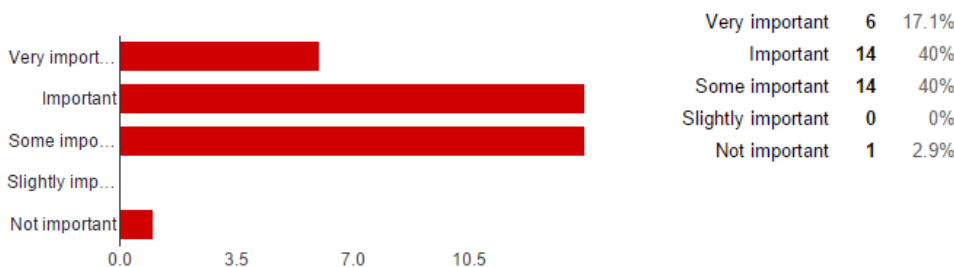


Figure 6.60 Answers to Q2.5 【44】

【45】 Availability of management

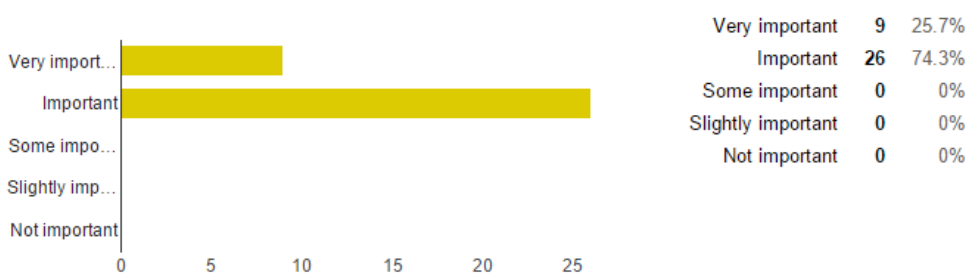


Figure 6.61 Answers to Q2.5 【45】

In conclusion, the above findings are discovered from the semi-structured interviews. Further discussions will be conducted in the next chapter, based on the combination of the analyses of the findings obtained from the observations and semi-structured interviews.

Part 3

Chapter 7 Research Discussion

This chapter is conducted to systematically discuss the analysis of the findings that emerged from the previous chapters, which focuses mainly on the discussion of the findings from the observations and semi-structured interviews in Chapter 6. Here, the results will be presented across the three study sites and are structured into two categories.

In the first category, the findings relating to the real usage patterns and users' desires of the recreation squares in Guangzhou which were obtained from the observations and the semi-structured interviews are discussed; while in the second category, the findings relating to the research methods which were applied in the on-site investigation are discussed.

In the first category, the discussion is conducted following three themes which emerged from the analysis of the observations and interviews as the most prominent and relevant issues. These are: firstly, the public's awareness and impression of urban squares in Guangzhou; secondly, the public's usage features and desires of urban recreation squares in Guangzhou; and finally, the development of the concept and criteria of socially beneficial urban squares based on the users' desires and aspirations. In the second category, the discussion proceeds following two themes. These are firstly, the suggestions for the application of observations in urban open spaces in Guangzhou, and even the rest of China; and secondly, the suggestions for the application of semi-

structured interview in urban open spaces in Guangzhou, and even the rest of China.

The outcomes of this chapter form a core part of the whole research and directly achieve objective 2 - To uncover the users' usage features, desires, and suggestions with regards to recreation squares in a Chinese context – today's Guangzhou, and to work towards achieving objective 3 - To discover the concept and criteria of socially beneficial recreation squares that are suited to a Chinese context - today's Guangzhou.

7.1 Discussion of the Research Outcomes Regarding the Usage of Squares in Guangzhou

Based on the findings obtained from the non-participant observations and semi-structured interviews illustrated in Chapter 6, this sub-chapter focuses on uncovering the significant issues and their impact with regards to the usage of recreation squares in Guangzhou as follows:

7.1.1 The Users' Awareness and Satisfaction of Urban Squares

As stated in 6.2.1, from 35 interviewees, there are 34 people that announce that they have used at least three types of urban squares. However, in contrast, 28 out of the 34 interviewees state that they don't know the differences between the different types of squares; and furthermore, there are 26 out of the 34 interviewees that announce that they did not understand or notice the diversity of squares in Guangzhou. This data reveals facts that different types of square are widely used in Guangzhou, however they do not offer a distinguishable identity to the users; and that the users have only a vague knowledge of the types of squares and their differences. These may affect the positive usage of squares.

In addition, as stated by the answers to question 1.1.8, there are 9 out of the 35 interviewees mentioned that they don't have any favourite square, which accounts for 25.7% of the total. Out of the 26 interviewees who admit having a favourite square, the majority (23 people, 88.5 %) think that the friendliness of the atmosphere of their favourite square is merely "OK". Further to this, in those 26 answers, only Flower City Square (mentioned 14 times), Hero Square (mentioned 8 times), Hai Xin Sha Square (mentioned twice), Chen Jia Ci Square (mentioned once), and Pan Yu Square (mentioned once) are mentioned as the users' favourite squares out of the 38 large or small existing squares in Guangzhou, which shows a strong contrast between the numbers of users' favourite squares and unpopular squares.

All of the above facts inform us that in today's Guangzhou, the users' impressions and satisfaction level towards squares are fairly poor, and their usage knowledge is also fairly limited. This

highlights the necessity and significance of improving the users' satisfaction towards urban squares and of nourishing the square's usage cultures through design, in today's Guangzhou.

While, as stated in Chapter 6.2.2, all of the 35 interviewees confirm that recreation is at least one of the main reasons that leads them to use the squares. Additionally, 34 out of these 35 interviewees confirm that recreation is their primary purpose for using squares. This implies that in Guangzhou users' minds, the recreation value of a square is the issue that they are most concerned about. With the support of the answers to Q1.1.3 which states that 100% of the interviewees have been to/used recreation squares, it is discovered that the type of "Recreation Square" is the type which has been most used by, and be of most concern to, the squares' users in Guangzhou. However, from the answers to Q2.1, it is found that only 1 person thinks that the friendliness of the atmosphere of the type of "Recreation Squares" is "good"; 13 people (37.1% of the total) think it is "bad"; and 21 people (60% of the total) think it is merely "OK". This clearly indicates that the degree of satisfaction towards the recreation squares is really low and that they do not meet the users' usage expectations in today's Guangzhou.

So far, based on the analysis above, it can be elicited that, with regards to improving Guangzhou users' impressions and the degree of satisfaction towards squares, improving their degree of satisfaction towards the type of "Recreation Square" is the key. This point firstly highlights the significance and urgency of carrying out a research into delivering squares with socially beneficial value; and secondly proves the wisdom of selecting the type of "Recreation Square" as the type to carry out that research in a limited timeframe.

7.1.2 The Public's Usage Features and Desires for Recreation Squares in Guangzhou

Here, the discussion of the public's usage features and desires for recreation squares in Guangzhou is conducted based on the findings which are discovered in Chapter 6, which includes two sub-themes as follows.

The public's usage features of recreation squares in Guangzhou

Based on the analysis of the real usage patterns across the three squares, it is found that certain universal usage features across the different recreation squares in Guangzhou exist, which relate to the main users, the main behaviours and the usage peak times. The understanding of these can inform us to the current usage habits and cultures within recreation squares in Guangzhou, which forms a solid foundation for us to reveal the existing usage problems and the reasons for their formation, and therefore to raise potential solutions.

Who are using the recreation squares in Guangzhou?

Through the longitudinal and crosswise comparisons of the findings in Chapter 6.1, four issues relating to the users are discovered as follows:

It is found that the recreation squares in Guangzhou are using by a wide range of people, which covers both genders and a diverse age range (from infant to 70+ years old), with different participation usages.

It is found that the usage by either male or female normally presents a similar trend and degree of usage throughout a day in each square, but with exceptions (e.g. the usage at around 21:00 in Hero square across 6 days, the usage at around 17:00 in Lighting Square on Jan 31, 2013).

It is found that the usage by different users' age groups presents different usage trends and levels of usage throughout a day in each square. However, the relative sort orders of these six different age groups in their levels of usage present similar patterns across the three different squares (see table 7.1). It is found that the users who are aged between 25 and 64 years old are the dominant users of all three squares; the users who are aged between 13 and 18 years old show the lowest usage of all three squares; the users who are aged between 4 and 12 years old and up to 3 years old are both in the top four usage groups across all three squares; and the users who are aged between 19 and 24 years old only present an active usage when there is a lack of the people who are aged 65+ years old, which implies that there are usage conflicts between 65+ year old users and 19 to 24 year old users.

The above reveals that the main users by age of recreation squares normally include the people who are aged from 25 to 64 years old, 4 to 12 years old, and 0 to 3 years old, and from 19 to 24 years old or 65+ years old. The recreation squares which presents a high usage by the users who are aged 65+ years old, normally present a low usage by the users who are aged between 19 and 24 years old, and vice versa.

| Hero Square | Water Fountain Square | Lighting Square |
|--------------------|------------------------------|------------------------|
| 25-64 years old | 25-64 years old | 25-64 years old |
| 0-3 years old | 4-12 years old | 4-12 years old |
| 65+ years old | 19-24 years old | 19-24 years old |
| 4-12 years old | 0-3 years old | 0-3 years old |
| 13-18 years old | 13-18 years old | 13-18 years old |
| 19-24 years old | 65+ years old | 65+ years old |

Table 7.1 Usage hierarchy by age across the three squares

It is found that the usage amongst different participating groups presents different usage trends throughout a day in each square. Meanwhile their relative sort orders in line with their respective degrees of usage in the three different recreation squares are also different (see table 7.2). However through careful analysis, it is found that, no matter which square, family users are always in the top two usage groups and couple users are always in the bottom two with respect to the degree of usage, which informs us of the dominant and infrequent users (classified by the users' participating way) of recreation squares in Guangzhou.

| Hero Square | Water Fountain Square | Lighting Square |
|--------------------|------------------------------|------------------------|
| Family users | Friends users | Family users |
| Single users | Family users | Friends users |
| Friends users | Couple users | Single users |
| Couple users | Single users | Couple users |

Table 7.2 Usage hierarchy by participation group across the three squares

In addition, the analysis of the response to Q2.5 in Chapter 6.2 reveals that the users prefer a recreation square primarily to have a good atmosphere for friends' gathering and recreation; secondly, to have a good atmosphere for family users' recreation, and finally, to have a good atmosphere for single users' and couple users' recreations.

From the discussion above, it can be elicited that family users currently dominate the usage of recreation squares, and this is expected to be continually sustained and supported in Guangzhou. Meanwhile, although the usage level of friend(s) users' is either first or third in the relative sort order, the actual users' numbers of this group in the three squares are fairly low in most instances, which is found from the illustrations in Chapter 6.1.1. This is opposite to the users' expectations, and informs us that there are desires to use the recreation squares with friends, but due to the poor affordance, these expectations are not met and should be met through the proper design.

As mentioned in 6.2.2, from the interviewees' responses, it is found that the users could be divided into two categories according to their usage motivation. The first category is "passive users" referring to the people who use a square mainly for accompanying others; and the second category is "active users" referring to the people who use a square mainly for themselves.

In recreation squares in Guangzhou, the parents and the grandparents are the typical users in the "passive users" category, which account for a large proportion of the family users. As they expressed, they come to the square mainly to accompany their children (4-12 years old) or babies (0-3 years old) to let them play and sun-bathe.

Therefore they focus on watching and keeping their children safe, rather than participating in any other activities. In summary, the people in this category prefer to participate in some “passive activities” and light “active activities” in the “social activities” category raised by Gehl (2010, pp. 20-25), e.g. watching others or temporary chatting, rather than to participate in heavy “active behaviours”. Furthermore, they care about the affordance of a recreation square for the people they accompany rather than for themselves.

While for the second category, in the recreation squares in Guangzhou, the single users are the typical users, who are more open-minded and are active to participate in the activities within the recreation squares. In summary, the people in this category could and would like to participate in all kinds of activities whether “passive” or “active”, as long as the activities are attractive. The users in this category care about the affordance of a recreation square for the diverse activities and diverse users.

In summary, the above discussions outline the main users and their significant usage features in the recreation squares in Guangzhou. The understanding of these could offer us a foundation for the later discussion with regards to their behaviours and desires.

When do the public use the recreation squares in Guangzhou?

Through the longitudinal and crosswise comparison of the findings in Chapter 6.1, three features with regards to the usage time of the three recreation squares are found and summarised as follows:

Usage times by both genders present similar usage trends and degrees of usage across the six different days in each square, which implies a relatively stable usage in each square with regards to time. However the usage trends and degree of usage of both genders across the three different urban squares are different and have no similarities. From the responses obtained in the semi-structured interviews, it can be seen that some factors could significantly affect the usage by both genders, which include the weather conditions, the comfort level of a recreation square, and the availability of performances either by people or of objects.

Usage times of different age groups present similar usage trends across six observation days in each recreation square, which implies that the usage by each age groups on time is relatively stable in each square. Meanwhile they present certain similarities and differences in their usage peak times across the three squares in normal situations, which are obtained from the crosswise comparisons of the findings in Chapter 6.1 and 6.2.

The similarities inform us that the different age groups have their own preferred usage times of

recreation squares in Guangzhou, as below.

- The users who are aged 65⁺ mainly use the recreation squares between 7:00 and 8:00 in the early morning for morning exercises, and use it between 10:00 and 12:00 and between 14:00 and 18:00 for accompanying their grandson/granddaughter to let them play or sunbathe.
- The users who are aged between 25 and 64 years old mainly use the recreation squares between 9:00 and 23:00 in a day with three usage peak times, which are at around 11:00, between 15:00 and 17:00, and between 20:00 and 21:00 for diverse behaviours.
- The users who are aged between 0 and 3 years old mainly use the square at around 11:00 and between 15:00 and 17:00 when the sunshine is good.
- The users who are aged between 4 and 12 years old mainly use the recreation squares at around 11:00, between 16:00 and 17:00, and between 20:00 and 21:00, for playing. They normally present similarities of usage times with the age groups of 65⁺ years old and 25 to 64 years old users.
- The users who are age between 13 and 18 years old present different usage trends and usage levels across the three recreation squares.

The differences inform us that the usage times of different age groups could be affected by some factors, which include the weather conditions, the comfort level of a recreation square, the availability of performances running either by people or of objects, and routine life patterns (weekdays and weekends).

Usage times of recreation squares by users in different participation groups present similar usage trends and degrees of usage throughout a day in each recreation square, which implies that the usage of each participation group is relatively stable in each square. Meanwhile they present certain similarities and differences on their usage peak times across the three squares in normal situations, which are obtained from crosswise comparisons of the findings in Chapter 6.1 and 6.2.

The similarities inform us that the different participation groups have their own preferred usage times of recreation squares in Guangzhou, as below.

- Family users mainly use the recreation squares at around 11:00 in the morning, between 15:00 and 17:00 in the afternoon, and between 20:00 and 21:00 in the evening.
- Friend(s) users mainly use the recreation squares at around 16:00 in the afternoon and at around 21:00 in the evening.

- Single users present a relatively stable level of usage throughout a day except for special situations.
- Couple users mainly use the recreation squares between roughly 15:00 and 21:00 in a day.

The differences inform us that the usage time of different participation groups could be affected by some factors, which include the weather conditions, the comfort level of a recreation square, the availability of performance either by people or of objects, and the routine life patterns (weekdays and weekends). These all imply that effective external stimuli could affect the users' usage times and durations of recreation squares, which could be used by the designer to mitigate the usage conflicts between the different users' groups.

Based on the discussions above, two conclusions could be obtained. The first is that in the recreation squares in Guangzhou, whatever the classification of the users, the levels of usage are all affected by a number of external factors, e.g. weather conditions, performances, which could be summarised as the possibility for carrying out/stimulating the users' proposed behaviours, and the comfort level to carry out these proposed behaviours. The square which provides the affordance to support the users' proposed behaviours with a sense of comfort normally presents a greater usage by public, while the opposite is also true, which is discovered in Chapter 6.1 and 6.2. This informs us that if we can discover the users' proposed behaviours and desires, and let the square provide the affordance to meet these, then this is the effective way to create socially beneficial urban squares in Guangzhou. The second conclusion is that the users' usage could be adjusted and changed by the affordance of a square. This feature could be used by the designer to balance the usage across different users and mitigate the usage conflicts amongst the different user groups.

What do the public usually do in recreation squares in Guangzhou?

From the findings in Chapter 6.1.2, two issues relating to the usage behaviours can be summarised as follows.

- Currently, there are 43 typical behaviours that occur in the recreation squares in Guangzhou, which cover all of the three types of activities (necessary activities, optional activities, and social activities) defined by Jan Gehl (1987).
- There are differences and similarities in the behaviour patterns (types and quantity) that occur in the three different squares.

The differences are the types and quantity of behaviours occur in the three different recreation

squares are different. Especially, in Hero Square and Lighting Square, where there are a greater number of optional behaviours and social behaviours that occur. From the responses given in the semi-structured interviews, it is found that this is because Water Fountain Square only provided limited possibilities for the potential users to conduct activities, such as a lack of lighting in the evening, no spare space for skateboarding or dancing, only one available attraction, and so on. This informs us that the affordance of a square is crucial in affecting the types and quantity of usage behaviours that occur in the recreation squares, which echoes the discussion above.

The similarities includes two main points. Firstly, a number of behaviours occur in all three squares, which informs us of the existence of typical main behaviours in the recreation squares in Guangzhou (see details in point 3). Secondly all the three squares show that “optional activities” are the predominant behaviour type that occurs in the three squares, with very limited “necessary activities” and limited “social activities”. This reveals a fact that recreation squares in Guangzhou are lacking in the behaviour type of “social activities”; and therefore, again, highlights the significance of conducting the research into socially beneficial urban squares.

As mentioned in point 2, it is found that each square is engaged by certain similar behaviours at the same time across the six different days, from the longitudinal and crosswise comparisons of the findings in Chapter 6.1.3. This implies that recreation squares are normally dominated by certain behaviours in today’s Guangzhou, which also infers the existence of dominant typical behaviours, and even the typical loyal users in the recreation squares in Guangzhou. To reveal these dominant typical behaviours and their corresponding users across these three recreation squares visually, the author has summarised the following list. This list may not uncover all of the dominant typical behaviours that are occurring in today’s recreation squares of Guangzhou, but it does at least offer an introduction to them, which can help other researchers and practitioners to have a basic idea of the usage of recreation squares in today’s Guangzhou.

In general, when there are performance either of objects or by people in the recreation square, sitting/standing and watching these normally dominates the usage of the recreation squares. This informs us that internal attractions can significantly affect the users’ behaviours. When there are performances, watching them either by sitting or standing is the main typical behaviour which occurs in the recreation squares.

Sitting/standing and watching performances (objects)



Figure 7.1 Photograph of behaviour occurring in the recreation squares

Sitting/standing and watching performances (people)



Figure 7.2 Photograph of behaviour occurring in the recreation squares

When there are no performances in the recreation square, the following 21 behaviours are the dominant typical behaviours which occur in the recreation squares. Here, one point needs to be clarified. It is that some behaviours are the dominant typical behaviours, not only for a single time period, but also for a number of periods. To avoid the constant repetition of the illustrations of the same behaviours, the illustration of each dominant typical behaviour is determined to be presented only when they first appear, as below.

According to the time schedule of Chinese routine life, a whole day is divided into five time periods. These are: early morning (from 7:00 to 10:00), morning (from 10:00 to 12:00), lunch time (from 12:00 to 14:00), afternoon (from 14:00 to 18:00) and evening (from 18:00 to 24:00). The corresponding dominant typical behaviours in each time period are illustrated as follows:

During the early morning (from 7:00 to 10:00), passing-through on foot or by bicycle, doing morning exercises (which includes playing badminton), and square cleaning by sanitation worker(s), are the dominant behaviours that occur in the three recreation squares during this period.

**Passing-through on foot
or by bicycle**



Figure 7.3 Photograph of behaviour occurring in the recreation squares

Doing morning exercises



Figure 7.4 Photograph of behaviour occurring in the recreation squares

Playing Badminton



Figure 7.5 Photograph of behaviour occurring in the recreation squares

**Square cleaning by
sanitation worker(s)**



Figure 7.6 Photograph of behaviour occurring in the recreation squares

The morning, as a whole, can be divided into two distinct periods, due to the main behaviours, which are from 8:00 to 10:00 and from 10:00 to 12:00 as below.

During the time between 8:00 and 10:00, passing-through behaviours dominate the usage of the three recreation squares in most cases, which are passing-through on foot or by bicycle. In the exceptional cases, some staying-in behaviours dominate the usage of the squares, which are as follows: doing maintenance of squares' facilities, square cleaning by sanitation worker(s), playing badminton, sitting and reading, sitting and chatting, doing morning exercises, standing and chatting, and taking personal photographs.

During the time between 10:00 and 12:00, staying-in behaviours normally dominate the usage of the recreation squares, except for the square with fairly low affordance, in most cases. In detail, the following staying-in behaviours are the dominant behaviours that occur during this time period in the three recreation squares: running and playing using open area, sitting with a pram, rehearsing collective activity, standing with a pram, standing and watching (sculptures, plants, or people), sitting and watching (sculptures, plants, or people), standing and chatting, strolling with a pram, doing maintenance of squares' facilities, health consulting (special event), playing around on bicycle, taking group photographs, sitting and chatting, and inspecting and studying (in tour).

In summary, during the whole morning, the dominant behaviours that normally occur in the three recreation squares are: passing-through on foot or by bicycle, doing maintenance of squares' facilities, square cleaning by sanitation worker(s), playing badminton, sitting and reading, sitting and chatting, doing morning exercises, standing and chatting, taking personal photographs, running and playing, using open area, sitting with a pram, standing and watching (sculptures, plants, or people), sitting and watching (sculptures, plants, or people), strolling with a pram, health consulting (special event), playing around on bicycle, taking group photographs, and inspecting and studying (in tour).

Sitting and reading, sitting and chatting, standing and chatting, taking personal photographs, running and playing using open area, sitting with a pram, standing and watching (sculptures, plants, or people), sitting and watching (sculptures, plants, or people), standing with a pram, strolling with a pram, health consulting (special event), playing around on bicycle, taking group photographs, inspecting and studying (in tour), rehearsing collective activity, and doing maintenance of squares' facilities, first appear, which are illustrated with image as follows.

Sitting and reading



Figure 7.7 Photograph of behaviour occurring in the recreation squares

Sitting and chatting



Figure 7.8 Photograph of behaviour occurring in the recreation squares

Standing and chatting



Figure 7.9 Photograph of behaviour occurring in the recreation squares

Taking personal photographs



Figure 7.10 Photograph of behaviour occurring in the recreation squares

**Running and playing
, using open area**



Figure 7.11 Photograph of behaviour occurring in the recreation squares

Sitting with a pram



Figure 7.12 Photograph of behaviour occurring in the recreation squares

**Standing and watching
(sculpture, plants, or people)**



Figure 7.13 Photograph of behaviour occurring in the recreation squares

**Sitting and watching
(sculptures, plants, or people)**



Figure 7.14 Photograph of behaviour occurring in the recreation squares

Standing with a pram



Figure 7.15 Photograph of behaviour occurring in the recreation squares

Strolling with a pram



Figure 7.16 Photograph of behaviour occurring in the recreation squares

**Health consulting
(special event)**



Figure 7.17 Photograph of behaviour occurring in the recreation squares

Playing around on bicycle



Figure 7.18 Photograph of behaviour occurring in the recreation squares

Taking group photographs



Figure 7.19 Photograph of behaviour occurring in the recreation squares

**Inspecting and studying
(in tour)**



Figure 7.20 Photograph of behaviour occurring in the recreation squares

Rehearsing collective activity



Figure 7.21 Photograph of behaviour occurring in the recreation squares

**Doing maintenance of square's
facilities**



Figure 7.22 Photograph of behaviour occurring in the recreation squares

At lunch time (between 12:00 and 14:00), staying-in behaviours dominate the usage of the recreation squares in most cases, except for Water Fountain Square which only provides low affordance. In detail, besides the behaviour of passing-through on foot, the following staying-in behaviours are the dominant behaviours that occur during this time period in the other two recreation squares: doing maintenance of square's facilities, standing with a pram, rehearsing collective activities, running and playing using open area, sitting and watching (sculptures, plants, or people), sitting and chatting, sitting with a pram, using /playing with phone or personal business, strolling with a pram, rollerblading, and sitting and eating.

Here, the behaviours of using /playing with phone or personal business, rollerblading, and sitting and eating, first appear, and are illustrated with images as follows:

**Using /playing with phone
or personal business**



Figure 7.23 Photograph of behaviour occurring in the recreation squares

Rollerblading



Figure 7.24 Photograph of behaviour occurring in the recreation squares

Sitting and eating



Figure 7.25 Photograph of behaviour occurring in the recreation squares

During the afternoon (from 14:00 to 18:00), staying-in behaviours normally dominate the usage of the recreation squares during most times of this period, except for Water Fountain Square which appears to be mainly engaged by the behaviour of passing-through on foot at most times. Based on the analysis, the dominant behaviours that occur in the three recreation squares during the afternoon are as follows: passing-through on foot, sitting and watching (people, plants, or sculptures), sitting with a pram, running and playing using open area, standing with a pram, rehearsing collective activity, playing around on bicycle, rollerblading, strolling with a pram, sitting with a pram, sitting and chatting, and standing and chatting. Here, all of the dominant behaviours that occur during this period have already been illustrated. This fact proves that the recreation squares in Guangzhou are indeed dominated by a certain number of behaviours, which repeatedly appear. Furthermore, it is found that there is an obvious similarity between the types of dominant behaviours that occur separately during the morning and during the afternoon.

The evening (between 18:00 and 24:00) can be divided into three distinct periods due to the characteristics of the occurring main typical behaviours. These are: early evening (between 18:00 and 20:00), evening (between 20:00 and 22:00) and late evening (between 22:00 and 24:00) as below.

During the early evening (between 18:00 and 20:00), the behaviours that belong to the category of staying-in behaviours normally dominate the usage of the recreation squares, for most of the time during this period, except for Water Fountain Square which appears to be mainly engaged by the behaviour of passing-through on foot. On the basis of the analysis, the dominant behaviours that occur in the three recreation squares during the early evening are as follows: passing-through on foot, running and playing using open area, skateboarding, sitting and chatting, strolling with a pram, rollerblading, strolling, and sitting and watching (people, plants, and sculptures).

During the evening (between 20:00 and 22:00), it is the staying-in behaviours that dominates the usage of the recreation squares for most of the time during this period, except for Water Fountain Square which is dominated by the passing-through behaviour. Based on the comparison and analysis, the dominant behaviours of the three recreation squares during this period are: passing-through on foot, square dancing, standing and watching (people), running and playing using open area, sitting and chatting, standing and chatting, sitting and watching (people), and taking personal photographs.

During the late evening (between 22:00 and 24:00), Hero Square and Lighting Square are mainly dominated by the staying-in behaviours for most of this period, while Water Fountain Square is mainly dominated by the passing-through behaviour for most of the time during this period. The dominant behaviours which occur in the three recreation squares are: passing-through on foot,

square dancing, street dancing, skateboarding, sitting and watching (people), sitting and chatting, playing BMX acrobatics, standing and chatting, rollerblading, square patrolling, running and playing using open area, and being intimate.

In summary, during the evening, there are diverse behaviours that dominate the usage of the three recreation squares. These are: passing-through on foot, taking personal photographs, running and playing using open area, skateboarding, sitting and chatting, strolling with a pram, strolling, sitting and watching (sculpture, plants, or people), square dancing, standing and watching (people), standing and chatting, playing BMX acrobatics, rollerblading, square patrolling, and being intimate. Here, the behaviours of skateboarding, square dancing, street dancing, standing and chatting, playing BMX acrobatics, strolling, being intimate, and square patrolling, first appear, and therefore are illustrated below:

Skateboarding

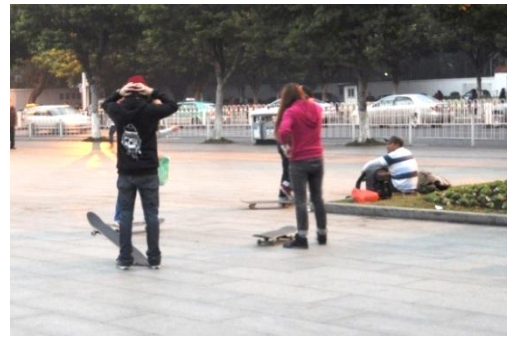


Figure 7.26 Photograph of behaviour occurring in the recreation squares

Strolling



Figure 7.27 Photograph of behaviour occurring in the recreation squares

Square dancing



Figure 7.28 Photograph of behaviour occurring in the recreation squares

Street dancing



Figure 7.29 Photograph of behaviour occurring in the recreation squares

Playing BMX acrobatics



Figure 7.30 Photograph of behaviour occurring in the recreation squares

Being intimate

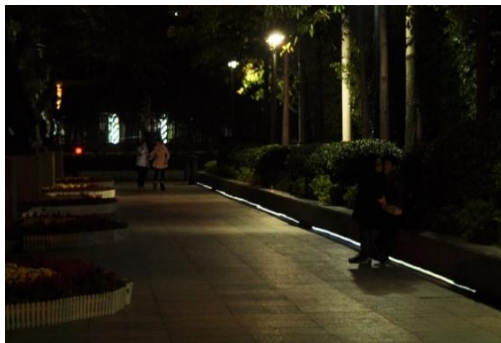


Figure 7.31 Photograph of behaviour occurring in the recreation squares

Square patrolling



Figure 7.32 Photograph of behaviour occurring in the recreation squares

In summary, the discussions above implies the fact that, whatever the classification of the users and the behaviours, the differences of the usage patterns amongst the three different recreation squares are all a result of the different affordances of these different recreation squares. Therefore, it can be deduced that, similar to the West, in the Chinese context - Guangzhou, the affordance of a recreation square will also significantly affect the usage by users of this square. This finding identifies that the key point of delivering socially beneficial urban squares in Guangzhou is to provide the appropriate affordance that can meet the users' usage preferences and desires for urban squares in Guangzhou. Therefore uncovering the appropriate affordance that the urban squares should possess in the Guangzhou context is the key to successfully accomplishing the ultimate task of this research. Therefore, the discussions with regards to the specific affordance that a square should processes as a socially beneficial urban squares are arranged in the next section.

7.1.3 The Suggestions for the Concept of Socially Beneficial Recreation Square and Its Criteria in Guangzhou

The definition of socially beneficial urban squares in the West, which is generated in Chapter 3.1.1, offers the author an inspiration for developing a concept for socially beneficial recreation squares that suits China. While the findings obtained from the non-participant observations and semi-structured interviews, which are revealed in Chapter 6.1 and 6.2, inform the author as to the users' thoughts, desires and suggestions on creating socially beneficial recreation squares in the Chinese context. The above two research achievements significantly contribute towards the generation of the concept and criteria of socially beneficial recreation squares in Guangzhou. The details are demonstrated below.

The suggestions for the concept of socially beneficial recreation square

The contributions offered by the users towards generating the concept of socially beneficial recreation squares in Guangzhou could be summarised into three points as below.

From the findings in Chapter 6.1 and 6.2, it is extracted that the recreation squares in Guangzhou are used by diverse people with different behaviours, and all of these users expect that their behaviours can be satisfactorily supported by the recreation squares. This informs us that, as in the West, recreation squares are expected to possess the capability to successfully support and sustain diverse users and their diverse usage behaviours.

The findings in Chapter 6.1 and 6.2 reveal that the usage conflicts which include "territorial conflicts" and "behaviour conflicts" currently exist in the recreation squares in Guangzhou. In Chapter 6.2.4, the users clearly state that this issue has negatively affected their usage, and therefore they expect to be offered equity in the usage of recreation squares. This informs us that,

recreation squares in Guangzhou are expected to have the capability to offer the perception of equity to all of the users, and have the capability to mitigate the usage conflicts amongst these users.

The findings in Chapter 6.2.4 prove that, as in the West, the recreation squares in Guangzhou are expected to possess a certain robustness for any usage change for the future because China is a fast developing dynamic society. Meanwhile, the findings in Chapter 6.2.4 also reveal three specific universal desires towards the recreation squares of users in Guangzhou. These are: possessing the capability to work as an information hub which can exchange and deliver information; possessing the capability to act as a city's cultural hub which can nourish and promote the local cultures; and finally, possessing the capability to act as a promotion centre where it can reflect and exhibit new techniques and knowledge.

So far, based on the discussion above, the concept of socially beneficial recreation squares in Guangzhou, and even the whole China could be expressed as follows.

The square space which has the capability to successfully sustain and support a diverse urban public life by offering equality and happiness to all of the potential users; to hold a certain robustness for the usage changes of a dynamic society in the future; and to work, not only as a place of sanctuary for people to liberate themselves from the stressful city life, but also as a city's (district's) hub to contribute towards the exchange of information, the promotion of local cultures, and the exhibition of new techniques and principles of modern times.

The suggestions for the criteria of socially beneficial recreation square

From the findings in Chapter 6.1 (particularly 6.1.2) and 6.2, the crucial factors that will affect the users' usage decisions and usage perceptions of recreation squares in Guangzhou are uncovered. These are: location, accessibility, permeability, safety and security, scale, legibility, amenity and comfort sense (natural setting, recreation facilities, and human contact), equity and territoriality, robustness, and management. Based on the desires of the users corresponding to each factor, which are revealed in Chapter 6.2.4, the criteria of socially beneficial urban squares which are applicable to Guangzhou and even the rest of China are tailored as follows.

Location

In the Chinese context (Guangzhou), the users prefer that a recreation square is located at a place near their home and be surrounded by commercial (retail) buildings and cultural buildings, because of the need for the "compound leisure" style in current Guangzhou. This implies that the more recreational recourses (facilities) it is surrounded by, the more popular the square could be.

Meanwhile, it is found that, in Guangzhou, a recreation square has a certain service radius for routine daily usage, which is normally a 15 minutes' walk or 30 minutes by public transport, independent of how popular it is. While, with regards to the issue of location, from the planning perspective, reviewing whether or not the distribution of the recreation squares achieves a balance on meeting the usage needs of all in Guangzhou and contribute towards achieving a reasonably even distribution of such squares throughout the city are also relatively important.

In summary, in terms of the factor of location, it is suggested that the planners and designers ask themselves the following questions before they finalise their design:

- Is the proposed recreation square to be situated at a location where it can contribute towards achieving a reasonably even distribution of such squares throughout the city?
- Is the proposed recreation square to be situated at a location where it can be tied into an existing or proposed pedestrian system within the city?
- Is the proposed recreation square to be situated at a location with commercial (retail) buildings and cultural buildings surrounding it, to support the need for the “compound leisure” lifestyle?

Accessibility

In the Chinese context (Guangzhou), the users present the fact that they prefer to get to a recreation square on foot or by public transport rather than by their own car. This feature informs us that for the factor of “accessibility”, a recreation square is expected to provide easy accessibility for all, to the city transport systems, which include both pedestrian systems and vehicular systems, Here, one point needs to be highlighted. This is that recreation squares are expected to provide easy and direct access to all, not only from the outside but also within.

In summary, in terms of the factor of accessibility, it is suggested that the planners and designers ask themselves the following questions before they finalise their design:

- Is the proposed recreation square easily accessible by all of the potential users, especially for the disabled, elderly, and children, on foot or by public transport?
- Are the pathways within the proposed recreation square able to take the users to the places where they actually want to go to, with ease?

Permeability

In the Chinese context (Guangzhou), the users present the fact that, as with the West, not only

physical permeability, but also visual, olfactory, and audible permeability (regardless of whether external or internal) are important for their usage decisions and perceptions. Furthermore, for the outside physical permeability, the users in Guangzhou demonstrate that they prefer a recreation square to be surrounded by building blocks on two of its sides, and is bounded by the city's circulatory routes on the other two sides, which is named "corner type" (see figure 7.33) by the author and illustrated as below.

Corner Type



Figure 7.33 Layout of "corner type"

Based on the comments raised in the interviews, the author suggests that the ground floors of surrounding buildings are designed to be fully open to a recreation square, by transforming the walls into verandas, bi-folding doors, windows and direct access-ways. It is also suggested that the transitional edge between a recreation square and surrounding city's circulatory routes is designed to be semi-open, which not only provides permeability, but also obstructs the noise and pollution of the traffic outside of the square to a certain degree.

In summary, in terms of the factor of "permeability", it is suggested that the planners and designers ask themselves the following questions before they finalise their design:

- Does the proposed recreation square have good physical connections with the adjacent environment?
- Does the proposed recreation square offer a strong psychological hint towards the connection between it and the adjacent spaces/buildings?
- Does the proposed recreation square provide the possibility for users to conveniently capture and occupy their preferred locations within it in response to activities they wish to pursue?

Safety and security

In the Chinese context (Guangzhou), the users proved that this is the factor of most concern for them. Their responses inform us of two issues. The first is that there are a few potential safety hazards existing in the recreation squares in Guangzhou, and they are caused by improper design, e.g. over bright paving lighting, large sunken fountain. This implies that a proper design can avoid or at least significantly reduce the number of potential safety hazards. The second is that square

security is needed; however, overly conspicuous security should be avoided. This informs us that moderate square security is desired in recreation squares in today's Guangzhou.

Meanwhile, the anti-social behaviours are expected to be avoided from occurring by the square's security; while the uncivilised behaviours are expected to be avoided from occurring by the square's design, such as signs. In Guangzhou, the uncivilised behaviours for square usage are identified as the behaviours that could potentially bring a sense of discomfort or a risk of danger to the other users in the square, e.g. smoking, over intimate behaviour, littering, dog walking. In the recreation squares, strong commercial activities are also treated as unwelcomed behaviours, such as handing out fliers, commercial promotional events, and so on.

In summary, in terms of the factor of "safety and security", based on the discussion above, the author suggests the designers consider the following five questions before they finalise their design:

- Does the recreation square provide the potential to maximise opportunities for casual monitoring, either inside or outside of the square, to avoid the square having dark hidden corners and vacant areas?
- Does the proposed recreation square provide a shelter/pavilion for the security guards at an inconspicuous location within the square?
- Does the recreation square have any physical objects, currently or potentially, which will affect the safety of the square, especially for users that research shows may have particular sensitivity to the use of public spaces (e.g. the elderly, disabled, ethnic minorities)?
- Does the proposed recreation square have good illumination which can contribute towards reducing the crime in the evening and after dark?
- Does the proposed recreation square offer the capability to indicate to the potential users the kinds of behaviours that are treated as unconventional or unwelcomed within this square? (see figure 7.34)?



Figure 7.34 Image of rules in "public space" (Carmona et al., 2010, p. 155).

Scale

In the Chinese context (Guangzhou), the Guangzhou users proved that the issue of scale is one of the factors which will affect their usage of a recreation square. As Marcus and Francis (1990) argued, it is difficult to recommend a precise size which can be applied universally to squares, because different squares will have different prospective locations, contexts and functions. However from the Guangzhou users' comments, the author discovered an effective way to resolve this issue. It involves understanding the typical behaviours, which would occur or would be encouraged to occur in the recreation squares, and the appropriate size of space for carrying out them. From this, it will possible to estimate the appropriate size for both the whole square, and for each sub-area.

While, Gehl's suggestions on scale in terms of people's perceptions also could offer some inspirations to us. He (2010, pp. 46-47) suggested that up to 45cm is an intimate distance, between 45 and 120cm is a personal distance, between 1.2 and 3.7m is the social distance, and anything over 3.7m is considered to be public distance. Also, between 70 and 80m (230-330 feet) is the maximum distance for being able to see events, and between 20 and 25m (65-80feet) is the maximum distance for facial recognition.

Finally, the views of Healthy Spaces and Places (2009) and Carmona et al. (2010) which relates to the issue of scale are worthy of mention here because their comments could offer the designers a sense of an appropriate overall scale of a square. It is that:

The ratio of a square's width (D) to its surrounded building's height (H) is suggested to be between 1 and 2 ($2 > D/H > 1$). This is because when $D/H < 1$, a square will lose its sense of being a node; and when $D/H > 2$, the square will lose its sense of enclosure. Here, one point needs to be clarified. It is that currently in China, the areas of land set aside for proposed squares are oversized in some cases, which could affect the feasibility and effectiveness of the application of the above ratio suggestion. Therefore, the author suggests that the planners and designers in China use the above ratio as an inspiration rather than as a guidance. The final decision should be affirmed by the full understanding and consideration of the actual size scale of the site.

The ratio of a square's width to its length is suggested to be around 2:3. This is because when the ratio is 1:3, the space forms the transition between being a street and being a square; when the ratio is greater than 1:5, it is normally recognised as just being a street rather than being a square (see figure 7.35).

Ratio: 1:3



Ratio: 1:5



Figure 7.35 Image of the ratio of width to length of a square (Carmona et al., 2010, p. 179)

So far, it can be summarised that: to suitably resolve the issue of scale for a square, it is suggested to follow the following five steps:

1. List the main behaviours which will occur, or are encouraged to occur, in the square.
2. Identify the appropriate area required by each person in each type of behaviours based on the investigation and the analysis of the local situation.
3. Estimate the number of participants of these behaviours.
4. Calculate the appropriate size for each behaviour.
5. Adjust integrally.

While the author suggests that the designers ask themselves the following three questions with regards to “scale” before they finalise their design:

- Does the proposed recreation square offer the optimal sizes for the main behaviours which will potentially occur or are encouraged to occur in the recreation square?
- Does the ratio of the width to length of the proposed recreation square amount to around 2:3?
- Does the ratio of the width of the proposed recreation square to its surrounded buildings’ height fall within an acceptable scale?

Legibility

In the Chinese context (Guangzhou), the users have suggested two methods which could be implemented to improve the “legibility” of a recreation square in Guangzhou. The first is to offer specific and defined features to each recreation square in accordance with its proposed main function and local cultures; while the second is to create picturesque scenes to encourage the opportunities for taking photographs.

Whatever form the features or scenes take, they could both be recognised as “signifiers”, developed by Lane (2000) in the West. Therefore it could summarised that, creating and improving the signifiers of a recreation square could significantly improve the legibility of it, not only in the West but also in China. This is because they can assist the users in forming a

recognised and positive memory.

Here, Chinese users confirmed that the shape of a recreation square is not that important for them, but the attribute of “playfulness” is fairly important for them. This implies that offering the sense of “playfulness” to the users, regardless of their age, could significantly distinguish the type of “Recreation Square” from the other types of squares for them, and improve the legibility of this type.

Finally, in terms of the factor of “legibility”, the author suggests that the designers ask themselves the following four questions before they finalise their design:

- Does the proposed recreation square include at least one representation of the local identity?
- Can the proposed recreation square be easily distinguished from other squares within the city?
- Does the proposed recreation square provide users opportunities for taking good photographs within it?
- Are the signs in the proposed recreation square clear and definitive?
- As a recreation square, does it have the capability to offer a playful value to all age groups?

The sense of amenity and comfort (internal physical attractions)

In the Chinese context (Guangzhou), the Guangzhou users identify a number of internal attractions which will significantly affect the comfort of their usage. According to the attribute of these attractions, they are classified into three categories which are natural setting, recreation facilities and human contact. This informs us that, in Guangzhou, recreation squares are expected to be an outdoor place of retreat, with appropriate greenery. Based on the users’ specific desires for each attraction, the author generates the following checklist for the practitioners, to assist them in finalising their socially beneficial recreation square design.

Natural Setting

In Guangzhou, the public’s need for a recreation square to be an oasis is probably because they are in a stressful life environment and in a high-density living environment with a limited number of green spaces. The checklist questions generated below could benefit the designers in delivering a recreation square with a sense of a comfortable natural setting.

Planting

- Does the design effectively combine soft materials and hard materials rather than segregating

them?

- Does the design leave the greenery open to the public?
- Does the design create a balance between the evergreen and flowering species to ensure that there are flowers across all four seasons?
- Does the design apply a variety of planting to enliven the users' sense of changing colours, smells and textures?

Fountain

- Is a fountain or other water feature offered within the proposed recreation square, either for a visual, aural or interactional attraction?
- If the proposed recreation square has been offered with a water fountain, is the fountain to an appropriate scale within the entire square, especially to the observation areas?
- Is the fountain designed with enough safety considerations to avoid the risks it could pose?
- Does the design consider the costs of operating the fountain, to avoid it becoming defunct or derelict?

Landform and level change

- Does the design offer appropriate landforms to the proposed recreation square, which not only act as screens against external noise and any visual pollution but also offers comfortable slopes for improving seating and viewing opportunities, e.g. sloping lawns?
- Have the landforms and level changes been considered as a way to create sub-areas within the design?
- When the level changes are applied, are there ramps provided for people who have special needs, such as the disabled, people with baby strollers, and so on?
- Have dramatic grade changes between the proposed recreation square and sidewalk been avoided, to prevent the recreation square from being underused?

Recreation Facilities

In Guangzhou, the public's need for a recreation square to be a retreat is probably because they are in a stressful life-style environment and in a high-density living environment with a limited number of outdoor spaces with recreational facilities. As specified in Chapter 6.2.4, 12 attractions are expected to be offered in a recreation square. These are: illumination, paving, outdoor retail

kiosk, seating, electronic facility for searching information, sunshade/rain shelter or similar structure, stage for group events/activities, fitness facility, sculpture/art, city volunteers' stop, large screen for broadcasting significant information and parent-child corner.

Based on the users' suggestions and desires, the checklist of questions with regards to the recreation facilities are generated below to benefit the designers in delivering a recreation square with comfortable sense of recreation facilities.

Illumination

- Is the proposed recreation square offered with appropriate and diverse illuminations within the design?
- Is the lighting appropriately located in the proposed recreation square to avoid the existence of dark areas?
- Has the designer evaluated whether or not any potential risks to the user's physical or mental health caused by improper illumination exist?

Paving

- Is the paving in the recreation square offered with appropriate materials, colours, and fun patterns, to meet both the functional and visual demands?
- Does the paving appear to provide the distinguishable but harmonious links between different sub-areas in the proposed recreation square?
- Does the paving in the proposed recreation square distinguish and signify the transition from the sidewalk to the square with a welcoming atmosphere?

Outdoor Retail Kiosk

- Is the kiosk located in a visible and easily accessible position, to meet the demands of the user's convenience?
- Is the kiosk close to seating, or have some movable chairs, and is it sufficiently close to public conveniences to meet the demand of comfort?
- Does the kiosk have an appropriate outlook and size that matches the overall style and size of the proposed recreation square?

Seating

- Does the proposed recreation square offer diverse seating arrangements to meet the different

usage demands of different users' groups (single users, couple users, friends' users, and family users)?

- Does the proposed recreation square offer sufficient seating opportunities for the users (calculating this based on the service radius and prospective users)?
- Are the seats provided with design quality, comfort, and playfulness for the users, and match the style of the square as a whole?
- Are the seats placed in different areas, with different orientations (sunny to shady) to meet the different the usage demands of diverse users?
- Are the seats offered in diverse display forms which include formal seating opportunities (benches) and informal seating opportunities (slopes, steps, retaining walls)?

Sunshade/Rain Shelter or Similar Structure

- Are they located near seating opportunities to maximise their potential usage?
- Are they offered in an appropriate size and quantity, to support the usage of a particular number of people at the same time?
- Are they offered in an appropriate outlook, and capable of being retractable, to meet the demands of both vision and function?

Electronic Facility for Searching Information

- Is it offered in reasonable quantities and location(s), which are not only convenient for the users' usage, but also convenient for the management?
- Is the equipment user-friendly to meet the demand of comfort?

Stage for Group Events/Activities

- Is it suitable for use, both at times when there are events or activities, and when there are none?
- Is it offered in a relative and appropriate size for the proposed recreation square to offer equity to the users who participate in the events/activities and to the users who do not?

Fitness Facility

- Is it provided and located in a corner within the proposed recreation square with a diverse range of sports equipment for different needs of diverse users?

Sculpture/Art

- Does the sculpture/art match with the local cultures and local aesthetic standards?
- Is the sculpture/art specific with an ability to be interacted with by users, to provide either an educational function (that could deliver knowledge to the users), or/and a playful function (that could enhance a sense of delight to the users), above any visual function, to improve the legibility and playfulness of the proposed recreation square?

City volunteers' Stop

- Is it situated in a visible and easily accessible location, to meet the demand of the usage convenience?
- Is it open for the whole day or at least at the peak usage times, to provide services to the public (e.g. promoting city cultures, offering help) whether they are staying-in users or passing-through users?

Big screen for broadcasting significant information

- Is it to an appropriate size and placed at a location with a suitable viewing distance and angle to the main seating areas, to ensure the comfortable visual perceptions of users?

Parent-child corner

- Is the parent-child corner located in a relatively semi-enclosed safe corner, away from the disturbances of city traffic and passing-through users, but with a certain visual permeability, within the proposed recreation square?
- Is there a diversity of interesting playground facilities for children, and enough seating opportunities for the accompanying parents/grandparents within the corner?

Human Contact

In Guangzhou, the public's needs for a recreation square to support social interactions is revealed by the findings in Chapter 5 which were discussed in Chapter 6.2.4. From the analysis of the outcomes of the observations and semi-structured interviews, the users' social behaviours in current Chinese recreation squares could be summarised into two varieties. These are "Overt" behaviours and "Covert" behaviours (Marcus and Francis, 1990, p. 73), which both should be supported and sustained in recreation squares.

The overt social behaviours include, coming to use the square with others for the purpose of relaxing together (e.g. chatting, playing); or coming to use the square alone, with the hope of meeting other "regulars" (e.g. square dancing, "babysitter" chatting). While covert social

behaviours mainly represents the social behaviours of people coming to use the square to watch and/or listen to others, without the intention of conversing or meeting with them, which is defined as “passive behaviour” by Jan Gehl (1987).

For the support and sustenance of the overt social behaviours, it is suggested that the design meets the following points:

1. Design a place with easily described and recognised characteristics, which could be conveniently used as a meeting point, e.g. the meeting point in Prague Square.
2. Provide diverse seating arrangements to support different sizes of groups to sit and socialise together.
3. Design the square to permit regular groups of users to lay claim to a certain area (their particular territory) for a time.
4. Provide a relatively open and visual permeability to allow people to easily find the people who are doing similar behaviours to themselves.
5. Provide storage lockers for the users who have need to save their personal belongings when they are participating in activities.

For the support and sustenance of the covert social behaviours, it is suggested that the design meets the following points:

- Place seating opportunities along the pathways to both allow the seated people watch the others, and also provide opportunity for strolling people to sit on.
- Provide seating opportunities for the users near the “stage” space to allow the people to watch and listen to others, and fully soak up the atmosphere.
- Provide programmed activities or the possibility for stimulating other people’s games to provide the interesting or sweet “scenes” for watching or listening to.

In conclusion, the author suggests that the planners and designers ask the following two questions before they finalise their design:

- Is the proposed recreation square friendly for all users of different participating groups, which include single users’ group, couple users’ group, friend(s) users’ group, and family users’ group?
- Does the proposed recreation square have the capability to support both overt social

behaviours and covert social behaviours?

Territoriality and equity

The discussions in Chapter 6.1 and 6.2 inform us of two issues that are relevant to territoriality and equity. Firstly the usage conflicts which include “territorial conflicts” and “behaviour conflicts” exist in the usage of recreation squares in today’s Guangzhou. This has resulted in a perception of non-equity for the users. Secondly, balanced territory allocation and equity are desired by the users in the recreation squares in today’s Guangzhou. This highlights the necessity and urgency in resolving this issue in today’s Guangzhou. Therefore, mitigating usage conflicts and offering the different users the perception of equity are the significant matters that a designer should consider.

Here, two suggestions are offered which could benefit towards resolving the issue of usage conflicts. The first is to divide the whole square into a number of sub-areas by using objects or creating different atmospheres, with the aim of offering a psychological hint of each “territory”. These spatial subdivisions should be clear but flexible. Here, one point need to be highlighted. It is that fixed boundaries or unchangeable spatial subdivisions should be avoided, because it will affect the squares’ sustainable uses. In the square space, creating a perception of “territory” psychologically rather than physically with implicit symbols is suggested, such as a change in colour/texture of paving. The second suggestion is to offer the appropriate sized areas to the dominant behaviours. For example, in the Chinese context (Guangzhou), from the observations, it is found that for normal square dancing, a space of 5m x 5m is normally an adequate space for a person; and for skateboarding, a space of 20m x 15m is a minimum size for a small group (less than 10 people).

The issue of territoriality and equity significantly affects the users’ diversity and the behaviours’ diversity, which will therefore significantly affect the socially beneficial attribute of a recreation square. Therefore, it needs to be offered sufficient attention. To this end, the author generates the following checklist questions which could contribute towards the practitioners’ delivery of socially beneficial recreation squares.

- Does the distribution of the proposed recreation square contribute towards achieving balance between the powerful groups (rich, ethnic majority) and vulnerable groups (poor, ethnic minority) in a city?
- Is the proposed recreation square friendly to accommodate civilised behaviours of all of the potential users regardless of their ethnic background, ages, genders, wealth and health?

- Does the square offer the opportunity for the users to form their preferred territories by themselves?

Robustness and management

In the Chinese context (Guangzhou), the users have proved that robustness and management are both important factors that will affect their usage of a recreation square.

During the fieldwork, the main issue relating to the management work, is the negative impact caused by the maintenance work of the square on the public's usage. In the observations, it is found that there is always maintenance work being carried out during the day in the recreation squares. From the responses of the users, it is found that this has negatively affected the users' normal usage due to the safety risk and messy appearance. Therefore the maintenance work is required to be appropriately managed in terms of time and working methods to provide a safe and cosy square environment for the public's usage.

Finally, based on the outcomes of the literature reviews and from the interviewees' extended answers, it is suggested that the following questions be asked by the designers to check if their designs meet the users' desires with regards to the issues of robustness and management.

- Does the design offer the proposed recreation square sufficient flexibility to ensure robustness over time, by providing it with the ability to be efficiently adapted to accommodate future circumstances and change?
- Does the design offer a management plan for the proposed recreation square which includes the first five years' maintenance schedule and management strategy, or at least a recommendation list for future management?
- Does the proposed recreation square contain the appropriate facilities to support the management of the activities and events within it, e.g. loudspeakers?
- Does the design suggest a method for the undertaking of maintenance work to avoid its significant impact on the public's usage?

The above discussions reveal the concept and the criteria of socially beneficial urban squares in Guangzhou, which forms a solid foundation to generate the conceptual framework of socially beneficial urban squares in Guangzhou which will be discussed in the next chapter.

7.2 The Discussion of the Research Methods Applied in the Fieldwork

Based on the research experiences from the on-site observations and semi-structured interviews carried out in Guangzhou, China, some concerns relating to the research methods applied in the Chinese context are raised and are summarised here. These are raised with the aim to offer some tips and inspirations to the researchers who will carry out the research in Chinese urban open spaces, especially in urban squares. These concerns are illustrated in two categories, which are on-site observation and semi-structured interview as follows.

On-site observation

In term of the on-site observation, two issues are worthy of discussion. The first is the observation time, and the second is the observation method.

Based on the research experiences gained from the three urban squares, it is found that the usage of different squares presented different usage pattern at different times. Therefore, for collecting the usage patterns precisely and effectively, carrying out the pilot study to exam the appropriate observation time is a first crucial issue. The key points that need to be identified in the pilot study are firstly, to discover the time points when the behaviours have a significant change (named “Time Change Point” by the author); and secondly, to determine an appropriate time interval for observations. Here two points needs to be highlighted. The first is that, in the pilot study, carrying out the observations at half-hourly intervals is an absolute minimum. The second is that both weekdays and weekends are needed to be covered in the observation in the Chinese context.

With regards to the observation methods, the urban squares and the other urban design spaces in today’s China are usually on a large scale, which results in research difficulties on collecting data in its entirety, efficiently, and effectively within a limited time. Here, the data collection method named “Behaviour Panorama” accompanied with “Behaviour Closeshot”, is the recommended data collection method in this situation, because it can significantly avoid the research limitation caused by the contrived bias in any manual recording process, and ensure the recording of behaviours that occur in the urban open space is instant, true, and precise. This can provide abundant and accurate rough data for the data analysis. Here, if a number of Behaviour Closeshots are determined to be used due to the complexity of the research site, an observation team is suggested to be organised with different members in charge of the different micro-sites to ensure the accuracy of data. Gehl’s (2013, p. 23) words: “...the automated registration will play a more prominent role in public life studies in future” have been proved to be applicable to the Chinese context, and so, automated registration is suggested to be used in the research of urban public space in the Chinese context.

Semi-structured interview

In term of the semi-structured interview, two issues are worthy of discussion. The first is the data collection method, and the second is the random selection of interviewees on site.

With regards to the data collection method of interview, “Google Form” is suggested to be used because it could significantly improve the efficiency not only in the data collection stage but also in the data analysis stage. Here, the automated registration (iPad and internet) are essential supporting items and need to be well prepared in advance of the interviews on site. Even if this research tool cannot be applied at the data collection stage due to the limitation of the site condition, it is still suggested to be used at the data input stage. This is because it can automatically organise the rough data and generate the answers of each close-ended questions effectively and efficiently, which could significantly save time and also improve the quality of the illustrations of the analysis results.

In terms of the random selection of the interviewees in Chinese urban open spaces, it is found that different aged and gender interviewees present different degrees of adaptability to the interview enquiry, and different degrees of adaptability to the depth of conservation. To lighten the road for the other researchers, the author summarised the following two points which outline the features of the public in China when they are invited to participate in an on-site interview:

- By gender, females are more defensive to a stranger’s interview enquiry and more sensitive to the gender of the interviewer(s), compared to the males. Meanwhile, both genders are sensitive to the degree of the interviewer’s friendliness, respect and interview skills, which implies that the interviewer’s interview skills are important to the success of an interview in the Chinese context.
- By age, the people who are age between 25 and 45 years old of either gender, normally presents a greater sense of social responsibility, and are able to state their thoughts and views more clearly, logically and deeply than the other age groups. This point is presented more obviously with people who have higher educational background.

Based on the discussion above, it can be found that, in Chinese urban open spaces, due to the cultural and social conditions, it is a challenge to invite the public to state their innermost thoughts and feelings frankly, as a stranger. However, it does not mean that this cannot be done. As long as the interviewer adopts appropriate interview skills, together with the appropriate attitudes, such as friendless, good faith, and respect, there are still members of the public who would like to participant in the on-site interviews. Therefore, the appropriate training, which includes interview skills and interview attitude, needs to be addressed before the formal on-site interviews.

Part 3

Chapter 8 The Conceptual Framework for Delivering Socially Beneficial Urban Squares in Guangzhou, China

“ It is equally possible through planning decisions, to influence patterns of activities, to create better or worse conditions for outdoor events, and to create lively or lifeless cities.”

Jan Gehl (2011, p. 31)

This research develops a conceptual framework for delivering socially beneficial urban squares. On its own, it cannot guarantee 100% successful socially beneficial square spaces, but it can provide a tool to assist the practitioners to deliver an urban square with socially beneficial value whether in new-build projects or regeneration projects.

This conceptual framework is finalised based on the outcomes of Chapter 4: a new definition and a new typology of urban squares for Contemporary China, the concept of socially beneficial urban squares and its corresponding criteria in the Western Context, and the findings from on-site non-participant observations and semi-structured interviews which are discussed in Chapters 6 and 7.

Finally, this framework has been determined, containing four components. These are: the developed definition of urban squares adapted to the Chinese context; the developed classification

of urban squares adapted to the Chinese context; the current usage problems and usage features of urban squares raised in today's Guangzhou; and finally, the definition of socially beneficial urban squares and its criteria, tailored to the context of Guangzhou. This chapter focuses on the integrated illustration of these components, and aims to present them clearly and concisely for the reader. Here, the illustration of these is conducted in two sub-chapters which are as follows.

8.1 The Developed Definition and Classification of Urban Squares for Contemporary China

The urban space discussed in this conceptual framework refers to "Urban Square" in China, which is defined below based on the research discussion in Chapter 3 and the research outcome produced in Chapter 4. Meanwhile, the developed classification of urban squares presented here is generated based on the research outcomes produced in Chapter 4.2, which classifies the urban squares in Guangzhou into five categories by their main function. These are: Landmark Square, Recreation Square, Civic Square, Commercial Square, and Community Square.

The developed definition of "Urban Square"

An urban public open space, mostly hard surfaced, which is mainly restricted to pedestrians and is inaccessible to vehicles except under special circumstances, with the main function of providing a place for the public's urban public life, for example, strolling, sitting, staying, watching, chatting, playing and other social interactions. Unlike a park, although there may be greenery in evidence, the predominant surfaces are hard surfacing, while unlike a street, although also with predominantly hard-standing, its length-to-width ratio should not exceed 3:1.

The developed classification of urban squares

Landmark Square - The Square that mainly serves as the "business card" of a city and contributes towards highlighting and identifying the city. It normally holds and supports the city's grand and important events and has high social cognition. It serves the whole of the public which includes both, local citizens, and tourists alike, and is normally surrounded by the landmark buildings of a city.

Recreation Square - The Square (see figure 5.2) that mainly serves as the recreation space to sustain and support the public's urban outdoor social life, which is expected not only to contribute towards a city's social life, but also to benefit towards improving the environmental quality of a city. It normally has three levels, which are city level, district level and sub-district level, according to its service radius and degree of social cognition to the public. Generally, this type mainly aims to serve the citizen of a city.

Civic Square - The Square that serves as the civic service space, which is associated with the municipal service buildings and facilities, e.g. council's service centre, city library, opera centre and city roads. It is mainly used for highlighting the entrance of the municipal buildings and facilities, and for coordinating the dispersal and gathering of traffic streams. It is open to the public, but normally has a low cognitive perception by the public in itself, because it is usually treated as the accessory space for the municipal buildings and facilities. This type includes two sub-types which are "Civic Building Square" and "Traffic Square". Generally, this type mainly aims to serve the citizens of a city.

Commercial Square - The Square that serves as a place to support the commercial activities, or in the buildings surrounded it. It is normally associated with one, or a group of, commercial buildings, but sometimes exists independently. This type serves the whole of the public, including both citizens and tourists alike.

Community square - The Square that mainly serves a particular, defined users' group for supporting their outdoor activities, which therefore, is only semi-public. This feature makes it obviously distinguishable from the other four types. It includes three sub-types, which are (Educational) Campus Square, (Private) Residential Quarter Square, and Industrial/Office Square which are respectively within the semi-closed campuses, residential quarters and official zones.

Strictly speaking, this type is not within the category of Urban Public Square due to its semi-public attribute. However, due to its vast prominence in China, it is necessary to identify and distinguish it here.

8.2 The Current Usage Features and Usage Problems of Urban Squares in Guangzhou and the Corresponding Suggestions for a Solution

Based on the on-site investigations, the actual usage patterns of recreation squares in Guangzhou are revealed (see Chapter 6). Meanwhile, the analysis of the actual usage patterns (see Chapter 7) informs us as to the current usage features and usage problems of recreation squares which exist in Guangzhou. In general, the main usage feature is that the recreation squares are being used by a wide range of users in Guangzhou, and the main problem is that the users' satisfaction of current recreation square is fairly low because the present state of the urban squares cannot support and meet the users' diverse usage desires. Therefore, the core aspiration of the users with regards to their usage of recreation squares in Guangzhou can be summarised as: the recreation squares which can contain the socially beneficial value are needed, and are expected to be created, in today's Guangzhou. Therefore, the author generated a conceptual framework, which could help

the planners and designers to successfully create socially beneficial urban squares in Guangzhou, as the suggested solution in response to the users' aspiration outlined above. Further details of this conceptual framework are illustrated below.

8.2.1 The Current Usage Features and Usage Problems of Urban Squares in Guangzhou

The urban squares are currently used by a wide range of people, which covers both genders and a diverse age range (from infant to 70+ years old), with different levels and ways of participating, and different usage behaviours. The main purpose of using urban squares by the public in Guangzhou is for their outdoor recreation life, which implies that recreation squares are the type of squares which is most used, and thus, most influential, in the public routine life in Guangzhou. However the usage impression of urban squares is vague, and the degrees of satisfaction with urban squares and recreation squares by the users is fairly low. This highlights the necessity and urgency in improving the usage satisfaction of urban squares in Guangzhou, and in particular, implies the significance of improving the users' satisfaction of recreation squares in Guangzhou.

The main reason that results in the low usage satisfaction with the recreation squares in Guangzhou could be summarised as: the present state of the urban squares cannot satisfactorily sustain and support the diverse users' different optional behaviours and social behaviours. This implies that there are needs and desires for recreation squares which can provide good affordance to support the users' diverse usage behaviours in today's Guangzhou, which is defined as "socially beneficial recreation squares" by the author. The tools that can contribute towards delivering these are suggested, and are illustrated below.

8.2.2 The Corresponding Suggestions for Creating Socially Beneficial Urban Squares in Guangzhou

Based on the discussion in 8.2.1, two general suggestions are raised for successfully delivering socially beneficial urban squares in Guangzhou. The first is that different types of urban squares should offer clearly different recognisable identities by design, according to their respective corresponding functional characteristics; and the second is that more attention should be offered to the type of "Recreation Square" by the planners and designers, due to it having the highest significant impact among all five types of square. The second suggestion should be achieved by two steps. The first step is that the type of "Recreation Square" should be offered a dominant proportion or at least a high proportion amongst the five different types in the planning consideration; while the second step is that recreation squares should be offered the socially beneficial value in the planning and design process.

So far, it can be summarised that, creating socially beneficial recreation squares is the key to

successfully deliver socially beneficial urban squares in Guangzhou. Therefore, the illustration of the concept and criteria of socially beneficial recreation squares is included in this conceptual framework, which is specified as follows.

The definition of socially beneficial recreation square in Guangzhou

Based on the research outcomes produced in Chapters 3, 5, 6 and 7, the definition of socially beneficial recreation square in contemporary Guangzhou is defined as below:

The square space which has the capability to successfully sustain and support a diverse urban public life by offering equality and happiness to all of the potential users; to hold a certain robustness for the usage changes of a dynamic society in the future; and to work, not only as a place of sanctuary for people to liberate themselves from the stressful city life, but also as a city's (district's) hub to contribute towards the exchange of information, the promotion of local cultures, and the exhibition of new techniques and principles of modern times.

The criteria for creating socially beneficial recreation squares in Guangzhou

Based on the research outcomes generated in Chapters 3, 6, and 7, ten factors are identified to form the framework for the criteria of socially beneficial recreation squares. The details are presented in the form of check questions that professionals would be prompted to ask, to help themselves in the delivery of recreation squares which possess a socially beneficial value, with respect to making key planning and design decisions. The first draft of these questions has been made available to local professionals (senior landscape architects in Guangdong Urban & Rural Planning and Design Institute) with a view to inviting their comments as to their suitability in their practical work. Their responses have been incorporated into this final version. It should be noted that these criteria are specific to the city scale of recreation squares and may not translate to the district level and sub-district level of recreation squares in their entirety.

Location

- Is the proposed recreation square to be situated at a location where it can contribute towards achieving a reasonably even distribution of such squares throughout the city?
- Is the proposed recreation square to be situated at a location where it can be tied into an existing or proposed pedestrian system within the city?
- Is the proposed recreation square to be situated at a location with commercial (retail) buildings and cultural buildings surrounding it, to support the need for the “compound leisure” lifestyle?

Accessibility

- Is the proposed recreation square easily accessible by all of the potential users, especially for the disabled, elderly, and children, on foot or by public transport?
- Are the pathways within the proposed recreation square able to take the users to the places where they actually want to go to, with ease?

Permeability

- Does the proposed recreation square have good physical connections with the adjacent environment?
- Does the proposed recreation square offer a strong psychological hint towards the connection between it and the adjacent spaces/buildings?
- Does the proposed recreation square provide the possibility for users to conveniently capture and occupy their preferred locations within it in response to activities they wish to pursue?

Safety and security

- Does the recreation square provide the potential to maximise opportunities for casual monitoring, either inside or outside of the square, to avoid the square having dark hidden corners and vacant areas?
- Does the proposed recreation square provide a shelter/pavilion for the security guards at an inconspicuous location within the square?
- Does the recreation square have any physical objects, currently or potentially, which will affect the safety of the square, especially for users that research shows may have particular sensitivity to the use of public spaces (e.g. the elderly, disabled and ethnic minorities)?
- Does the proposed recreation square have good illumination which can contribute towards reducing the crime in the evening and after dark?
- Does the proposed recreation square offer the capability to indicate to the potential users the kinds of behaviours that are treated as unconventional or unwelcomed within this square?

Scale

- Does the proposed recreation square offer the optimal sizes for the main behaviours which will potentially occur or are encouraged to occur in the recreation square?
- Does the ratio of the width to length of the proposed recreation square amount to around 2:3?

- Does the ratio of the width of the proposed recreation square to its surrounded buildings' height fall within an acceptable scale?

Legibility

- Does the proposed recreation square include at least one representation of the local identity?
- Can the proposed recreation square be easily distinguished from other squares within the city?
- Does the proposed recreation square provide users opportunities for taking good photographs within it?
- Are the signs in the proposed recreation square clear and definitive?
- As a recreation square, does it have the capability to offer a playful value to all age groups?

The sense of amenity and comfort (internal physical attractions)

In the Chinese context (Guangzhou), internal physical attractions which will affect the user's sense of amenity and comfort could be classified into three categories. These are natural setting, recreation facilities and human contact, as expanded upon below.

Natural Setting

Planting

- Does the design effectively combine soft materials and hard materials rather than segregating them?
- Does the design leave the greenery open to the public?
- Does the design create a balance between the evergreen and flowering species to ensure that there are flowers across all four seasons?
- Does the design apply a variety of planting to enliven the users' sense of changing colours, smells and textures?

Fountain

- Is a fountain or other water feature offered within the proposed recreation square, either for a visual, aural or interactional attraction?
- If the proposed recreation square has been offered with a water fountain, is the fountain to an appropriate scale within the entire square, especially to the observation areas?
- Is the fountain designed with enough safety considerations to avoid the risks it could pose?
- Does the design consider the costs of operating the fountain, to avoid it becoming defunct or derelict?

Landform and level change

- Does the design offer appropriate landforms to the proposed recreation square, which not only act as screens against external noise and any visual pollution but also offers comfortable slopes for improving seating and viewing opportunities, e.g. sloping lawns?
- Have the landforms and level changes been considered as a way to create sub-areas within the design?
- When the level changes are applied, are there ramps provided for people who have special needs, such as the disable, people with baby strollers, and so on?
- Have dramatic grade changes between the proposed recreation square and sidewalk been avoided, to prevent the recreation square from being underused?

Recreation Facilities

Illumination

- Is the proposed recreation square offered with appropriate and diverse illuminations within the design?
- Is the lighting appropriately located in the proposed recreation square to avoid the existence of dark areas?
- Has the designer evaluated whether or not any potential risks to the user's physical or mental health caused by improper illumination exist?

Paving

- Is the paving in the recreation square offered with appropriate materials, colours, and fun patterns, to meet both the functional and visual demands?
- Does the paving appear to provide the distinguishable but harmonious links between different sub-areas in the proposed recreation square?
- Does the paving in the proposed recreation square distinguish and signify the transition from the sidewalk to the square with a welcoming atmosphere?

Outdoor retail kiosk

- Is the kiosk located in a visible and easily accessible position, to meet the demands of the user's convenience?
- Is the kiosk close to seating, or have some movable chairs, and is it sufficiently close to public conveniences to meet the demand of comfort?
- Does the kiosk have an appropriate outlook and size that matches the overall style and size of the proposed recreation square?

Seating

- Does the proposed recreation square offer diverse seating arrangements to meet the different usage demands of different users' groups (single users, couple users, friends' groups)?

users, and family users)?

- Does the proposed recreation square offer sufficient seating opportunities for the users (calculating this based on the service radius and prospective users)?
- Are the seats provided with design quality, comfort, and playfulness for the users, and match the style of the square as a whole?
- Are the seats placed in different areas, with different orientations (sunny to shady) to meet the different the usage demands of diverse users?
- Are the seats offered in diverse display forms which include formal seating opportunities (benches) and informal seating opportunities (slopes, steps, retaining walls)?

Sunshade/rain shelter or similar structure

- Are they located near seating opportunities to maximise their potential usage?
- Are they offered in an appropriate size and quantity, to support the usage of a particular number of people at the same time?
- Are they offered in an appropriate outlook, and capable of being retractable, to meet the demands of both vision and function?

Electronic facility for searching information

- Is it offered in reasonable quantities and location(s), which are not only convenient for the users' usage, but also convenient for the management?
- Is the equipment user-friendly to meet the demand of comfort?

Stage for group events/activities

- Is it suitable for use, both at times when there are events or activities, and when there are none?
- Is it offered in a relative and appropriate size for the proposed recreation square to offer equity to the users who participate in the events/activities and to the users who do not?

Fitness facility

- Is it provided and located in a corner within the proposed recreation square with a diverse range of sports equipment for different needs of diverse users?

Sculpture/art

- Does the sculpture/art match with the local cultures and local aesthetic standards?
- Is the sculpture/art specific with an ability to be interacted with by users, to provide either an educational function (that could deliver knowledge to the users), or/and a playful function (that could enhance a sense of delight to the users), above any visual function, to improve the legibility and playfulness of the proposed recreation square?

City volunteers' stop

- Is it situated in a visible and easily accessible location, to meet the demand of the usage convenience?
- Is it open for the whole day or at least at the peak usage times, to provide services to the public (e.g. promoting city cultures, offering help) whether they are staying-in users or passing-through users?

Big screen for broadcasting significant information

- Is it to an appropriate size and placed at a location with a suitable viewing distance and angle to the main seating areas, to ensure the comfortable visual perceptions of users?

Parent-child corner

- Is the parent-child corner located in a relatively semi-enclosed safe corner, away from the disturbances of city traffic and passing-through users, but with a certain visual permeability, within the proposed recreation square?
- Is there a diversity of interesting playground facilities for children and enough seating opportunities for the accompanying parents/grandparents within the corner?

Human Contact

- Is the proposed recreation square friendly for all users of different participating groups, which include single users' group, couple users' group, friend(s) users' group, and family users' group?
- Does the proposed recreation square have the capability to support both overt social behaviours and covert social behaviours?

Equity and territoriality

- Does the distribution of the proposed recreation square contribute towards achieving balance between the powerful groups (rich, ethnic majority) and vulnerable groups (poor, ethnic minority) in a city?
- Is the proposed recreation square friendly to accommodate civilised behaviours of all of the potential users regardless of their ethnic background, ages, genders, wealth and health?
- Does the square offer the opportunity for the users to form their preferred territories by themselves?

Robustness

- Does the design offer the proposed recreation square sufficient flexibility to ensure robustness over time, by providing it with the ability to be efficiently adapted to accommodate future circumstances and change?

Management

- Does the design offer a management plan for the proposed recreation square which includes the first five years' maintenance schedule and management strategy, or at least a recommendation list for future management?
- Does the proposed recreation square contain the appropriate facilities to support the management of the activities and events within it, e.g. loudspeakers?
- Does the design suggest a method for the undertaking of maintenance work to avoid its significant impact on the public's usage?

In summary, creating socially beneficial recreation squares is the key to improving the users' usage satisfaction towards the urban squares in Guangzhou. The definition and criteria presented above could offer the planners and designers effective tools in creating them, although the success is not 100% guaranteed. Here, one point needs to be clarified and highlighted; that considering and offering socially beneficial value to the recreation squares in the planning and design process should not be a bonus or extra treat, but is a necessity in Guangzhou, and even other cities across China.

Part 3

Chapter 9 Conclusion

This Chapter functions as the summary for the whole research and its potential extension, which is carried out in two steps. The first step is to offer an overview of the current research, which mainly includes the summary of this research, the summary of the main research methods and the main research outcomes, and the research limitations; while the second step is to identify the scope for the future work.

9.1 An Overview of the Current Research

This sub-chapter focuses on outlining an overview of the current research, to the reader, with three parts as follows:

9.1.1 The Summary of This Research

The purpose of this research was to deliver a conceptual framework for creating socially beneficial urban squares in contemporary Guangzhou. To date, four core components of this conceptual framework have been explored and discovered. These are: the developed definition of urban squares for China; the new classification of urban squares for China; the current usage problems and usage features of urban squares in Guangzhou; and finally, the definition of socially

beneficial urban squares and its criteria, tailored to the context of Guangzhou. This framework will not only fill these gaps in the existing framework of Chinese urban design policies and guidance with regards to urban squares, but also will play a significant role in guiding the practitioner towards producing socially beneficial urban squares in actual life.

To achieve the main purpose specified above, four research objectives were set as below:

- To investigate the lessons and experiences that can be learnt from the Western context with regards to delivering socially beneficial urban squares for China.
- To uncover the users' usage features, desires, and suggestions with regards to recreation squares in a Chinese context - today's Guangzhou.
- To discover the concept and criteria of socially beneficial recreation squares that are suited to a Chinese context - today's Guangzhou.
- To synthesise the outcomes of the previous three stages into a conceptual framework that can assist practitioners to deliver urban squares with greater capability to stimulate and nourish the public's social life in a Chinese context - today's Guangzhou.

To achieve the research objectives illustrated above, this research adopted a three-stage research mode as below:

Firstly, the author refers to the West's fruitful outcomes relating to the squares, especially on the aspect of the social dimension, to gain inspirations on how to create socially beneficial urban squares in the Chinese context. Here, four research outcomes are generated as the research foundations for the next two steps. These are the developed definition of urban squares and the new classification of urban squares suited to today's China, and the concept of "socially beneficial urban square" and its criteria applied in the West.

Secondly, the author carried out on-site non-participant observations and semi-structured interviews at the selected sites to discover the users' real usage patterns and usage desires with regards to urban squares in Guangzhou. Here, two research outcomes were uncovered. These are firstly, the usage features and usage problems of urban squares in today's Guangzhou; and secondly, the Guangzhou users' thoughts and suggestions on the concept of socially beneficial recreation squares and its criteria.

Thirdly, the author combines the research outcomes obtained at stage one and two, and generates a conceptual framework, which includes five components, that could benefit the practitioners in

successfully creating socially beneficial urban squares in Guangzhou, and even other cities in China.

9.1.2 The Summary of the Main Research Methods and Research Outcomes

Main research methods

In this research, for achieving the research objectives specified above, a number of research tools were explored and applied which were mainly qualitative research methods. Among these research methods, three of them played a crucial role in achieving the research objectives in this study. They are literature review, non-participant observation and semi-structured interview. The details are outlined as below:

The literature review has been used, firstly for revealing the lessons and experiences that can be learnt from the Western context, with regards to delivering socially beneficial urban squares, and secondly, for informing the author of the appropriate research methods for conducting this research. The two main findings obtained from this research method are as follows:

- The lessons and experiences that can be learnt from the West by China are identified, which include the requirements and methods for updating the definition and classification of urban squares in China, and the conceptual model of socially beneficial urban squares in the West.
- The potential applicable research methods and their limitations, which need to be developed for adapting to the needs of this research.

Based on the findings illustrated above, the author produces three research outcomes. These are: the concept of socially beneficial urban square and its criteria applied in the western context; the developed definition of urban squares and the new typology of urban squares suited to today's China; and the developed non-participant observation and semi-structured interview research methods suited to this research. These could be treated as the main research outcomes at Stage One, which forms the solid foundation for conducting the following two stages of this research.

The developed non-participant observations and semi-structured interviews have been used for discovering the real usage pattern and usage desires. There are three main findings that are obtained from this, as below:

- A low degree of usage satisfaction of the urban squares and urban recreation squares exists in today's Guangzhou.
- Creating socially beneficial recreation squares is the key to improving the users' usage

satisfaction of the urban squares in Guangzhou.

- The users' thoughts and suggestions for creating socially beneficial recreation squares in Guangzhou are revealed.

Based on the three findings demonstrated above, the author generated two main research outcomes. These are the components of the concept of socially beneficial urban squares and a set of criteria of it which are framed in the form of questions. These two outcomes can be treated as the main research outcomes at Stage Two, which directly contribute to finalising the work at Stage Three.

Key research outcomes and their potential application

In this research, the ultimate research outcome is to generate a conceptual framework for delivering socially beneficial urban squares in Guangzhou, which is composed of three key achievements. These are the developed definition of urban squares for China, the new classification of urban squares for China, and finally, the definition of socially beneficial urban squares and its criteria, tailored to the context of Guangzhou.

As discussed in the previous chapters, currently in Guangzhou and even the rest of China, there is no national, regional or local level design guidance or policy documents in existence to provide the practitioners with detailed industrial standards to follow, to produce users-friendly urban squares in a Chinese context. Therefore, the ultimate outcome of this research will be to contribute towards generating planning and design guidance for creating socially beneficial urban squares for today's Guangzhou.

Even if the planning and design guidance for urban squares in Guangzhou could not be produced in the near future, due to the lengthy procedure, the three key achievements of this research could still be applied separately in the relevant policies and guidance for urban planning and urban design in China. In detail, the first and second research achievements (the new definition and classification of urban squares) will contribute towards updating the national level policy documents, e.g. "Code for Classification of Urban Land Use and Planning Standards of Development Land 2011" (2011); while the third research achievement (the concept and criteria of socially beneficial urban squares) can be applied to regional and local level planning policy, regulations, and other official documents, such as the "Opinions of Guangzhou municipal government on accelerating the three dimension landscaping in urban space" (Guangzhou Urban Planning Bureau, 2015), "Regulations of Guangzhou municipality on greening work" (Standing Committee of the People's Congress of Guangzhou, 2012), and so on, to enrich the content, and to strengthen the details for guidance.

Even if, when these research achievements cannot be transferred into the relevant planning and design policy documents, with all probability, they can still be used as technical documents which offer the practitioners and researchers a handy tool in enabling them to create socially beneficial urban squares in Guangzhou. Here especially, the set of criteria for their delivery, framed in the form of prompt questions, could offer the practitioners flexibility to determine their planning and design, based on the specific conditions of projects.

Finally, the research outcome is consistent with Moughtin and Mertens's (2003) finding, which highlight the risk in transferring design concepts across different times and different cultural areas. Although, there are a number of similarities with regards to the users' usage habitats and desires between the West and China in the contemporary era, some differences also obviously exist and significantly affect the users' usage decisions. Based on the findings in this research, two significant differences could be drawn. Firstly, the users in China do not seem to have any significant desire for recreation squares to be near workplaces, instead preferring them to be close to home; while the situation in the West is frequently to the contrary. Secondly, the users in China present a desire for these recreation squares to support a "compound leisure" style; while there is no obvious evidence to indicate a similar interest in the West. Therefore, it can be deduced that, learning the lessons and experiences from each other between China and the West is feasible. However, it is crucial to take into account the cultural differences and local desires to ensure that the results of the leaning are positive.

9.1.3 Limitations of Research

In general, this research encounters three types of limitations: the limitations of research time and the adequacy of data, the limitations of the research instruments, and the limitations of the application of the research outcomes.

The limitations of research time and the adequacy of data

Due to the limitation of research time, the on-site investigations were only carried out in three squares with a limited number of days to explore the concept and criteria of the socially beneficial urban squares. This might have limited the numbers of people involved in this research, and therefore limited the adequacy of the data obtained from the non-participant observations and semi-structured interviews. However, in the research, due to the development of the non-observation method, abundant information was obtained from the observations, which mitigated this concern. Meanwhile from the analysis of the findings, it can be noted that the behaviour patterns across the different squares presented a universal trend, which implied that the limited number of study sites did not have a significant effect on the findings as a whole. For the semi-structured interviews, although the numbers of interviewees are limited, due to the explicit

purposeful interview questions and the clear criteria for determining the target interviewees, the users' insights, thoughts and desires, which were expected to have been obtained by the author, have been clearly revealed. Furthermore, from the findings, it can be seen that a few desires and needs are universal and would not be influenced by the numbers of interviewees.

The limitations of the research instruments

As specified in Chapters 6 and 7, the research methods adopted for the use in this research also faced the issue of limitations, such as observer bias, interviewee's bias, data validity, and data veracity. However, based on a full understanding of these, the author applied two methods to reduce the limitations caused by the research instruments. These were the optimisation of the traditional research methods and the application of diverse research methods.

With regards to the optimisation of the traditional research methods, for non-participant observation, the author optimised data collection by creating Behaviour Panoramas and Behaviour Close-shots as a new observational and recording method, which was tested and refined through a pilot study. This new observation method, which experienced specific modifications, according to the specific situation of urban squares in China, enabled the researcher to capture a very large amount of observational information in the squares, significantly improved the research efficiency, and avoided the observers' bias in the data collection stage. While, for semi-structured interview, the author combined the questionnaire and interview methods to finalise a unique style of semi-structured interview question list which was also developed and tested in the pilot study. This development of the research method of semi-structured interview enabled the researcher to successfully capture the users' real inner-most thoughts, desires, and suggestions on Chinese recreation squares, in a limited time, and minimised the negative impact of the interviewee's bias caused by their different educational backgrounds and comprehension abilities.

With regards to the application of the diverse research methods, the author adopted four different research methods to form the methodology framework of this research. These were: literature review, document analysis, non-participant observation, and semi-structured interview. In this methodology framework, the data obtained from the different research methods is mutually verified, which acts to effectively reduce the research limitations that could be caused by the data's level of validity or veracity.

The limitation of the application of the research outcomes

As specified above, this research only selected one type of square (recreation square) and one city (Guangzhou) to explore the concept and criteria of socially beneficial urban squares. This could

affect the extensive application of the conceptual framework of socially beneficial urban squares, which is generated based on the data collected from them. However, this limitation has been reduced by the conservative and rational selection of the type, and the city, for this study.

In reality, the squares, which are expected to reflect the socially beneficial values, are mostly within the category of “Recreation Square”, therefore, the study of this type could significantly improve the overall ability of the urban squares to support the public’s urban social life. Meanwhile, the responses of the interviewees proved that creating socially beneficial recreation squares is the crucial key for improving the user’s satisfactions of urban squares as a whole. Therefore, it could be summarised that, in the research into the social dimension of urban squares, the type of “Recreation Square” is the most typical, influential, and suitable type. Therefore selecting this type, as the research type, in this study, can minimise the limitations that could be caused by selecting only one type of squares.

With regards to the city selection, Guangzhou is an ideal candidate for this research, because, firstly it is suffering from the typical issue of “users-unfriendly squares” which is raised by the rapid urbanisation process, and secondly, it is one of the three most influential cities in China, which implies that any advance in its experience towards creating socially beneficial urban squares could be referenced by other Chinese cities, especially when they are experiencing similar Chinese urbanisation processes. Therefore, only selecting one city for the research into socially beneficial urban squares will not affect its wider application across China. However, one point needs to be highlighted, when this conceptual framework is proposed to be applied in an area with significant cultural differences to Guangzhou, some of the criteria needs to be adjusted in accordance with the local context.

9.2 Scope for Future Work

This research has produced a conceptual framework for creating socially beneficial urban squares in Guangzhou. From this, a number of potential avenues of future research have appeared which can be summarised into four possibilities, as follows:

In this research, the on-site observations were only carried out over a six day period. At a later date, this could be carried out over a longer timeframe, which will have the benefit of increasing the data’s veracity and therefore improving the clarity of the usage trends and usage features of the users, by their gender, age group, and forms of participation.

In this research, the study and determination of the concept and criteria of socially beneficial recreation squares was only carried out in one city. At a later date, it could be carried out in a

wider range of cities in China, which will firstly verify the veracity of the concept and criteria, and secondly identify the adjustment measures for the application of the framework in other cultural areas. This future research will significantly improve the applicability of the conceptual framework of socially beneficial urban squares within the Chinese context.

In this research, the criteria questions are developed based on the users' responses and finalised with the feedback from the practitioners. Later, the opportunities could be taken to apply these criteria questions in the evaluation of existing squares. This could firstly help to further test the validity of the criteria questions and potentially refine and develop them; and secondly, assist the author in collecting a series of case studies that can work as examples to indicate how to apply these criteria questions appropriately in practice.

In this research, the conceptual framework was generated based on the feedback provided by the users. This could be extended by investigating and collecting the thoughts and suggestions from the professionals involved in the design process. This future research could directly refine the existing conceptual framework, and further enhance it, to become an implement of guidance/guidelines for the practitioners in the particular areas.

In this research, only one type of urban square has been researched. At a later date, the research range could be extended to cover all of the other four types of urban squares. This future work could help to overcome any dysfunction and improve the comprehensiveness of the existing conceptual framework.

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APPENDIX A
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**EVOLVING PATTERN
OF USERS' NUMBER
BY GENDER**

HERO SQUARE

The evolving pattern of staying-in users' number by gender (male)

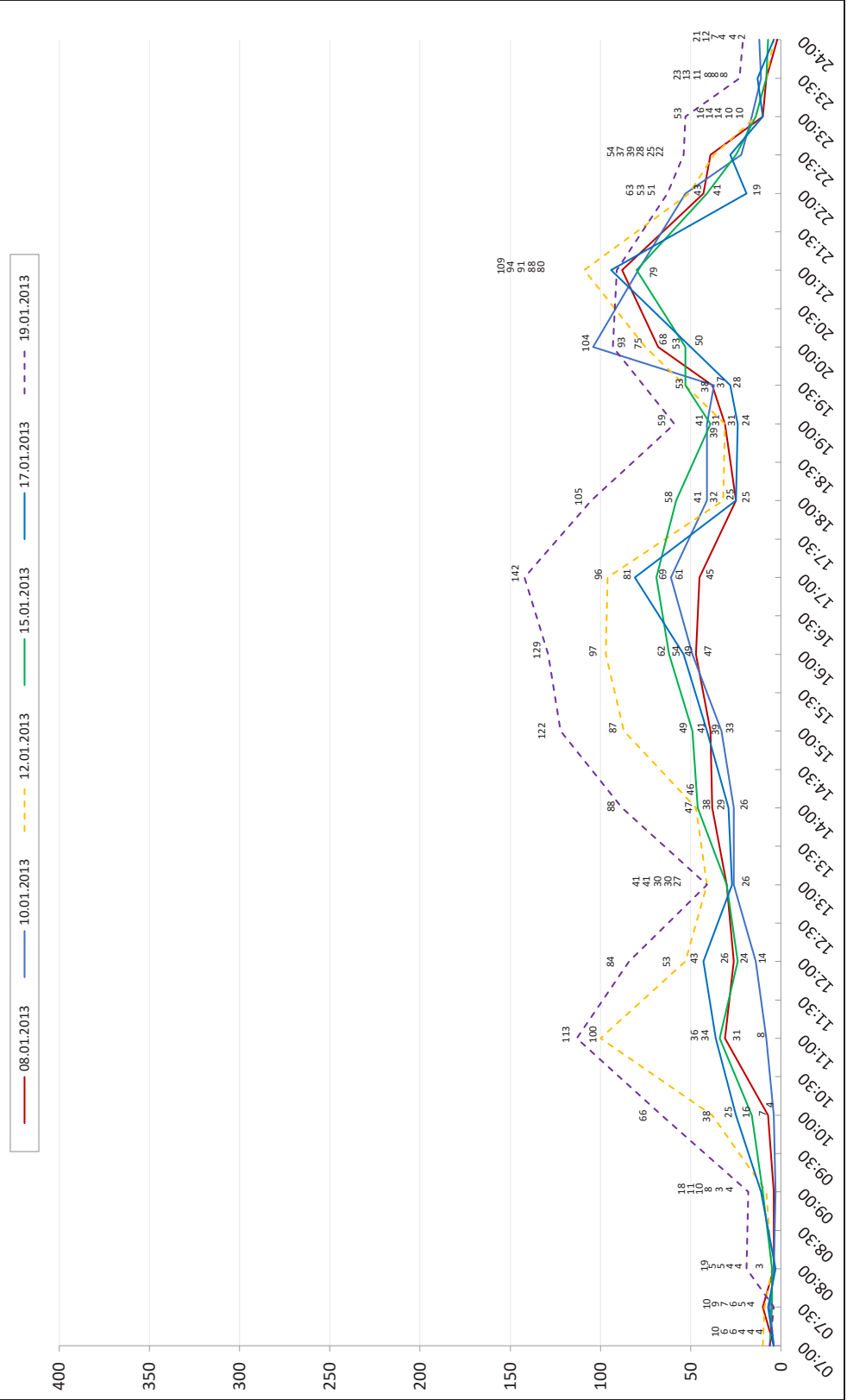


Figure 1.1 The evolving pattern of users' number by gender in staying-in category - male (6 days in Hero Square)

HERO SQUARE

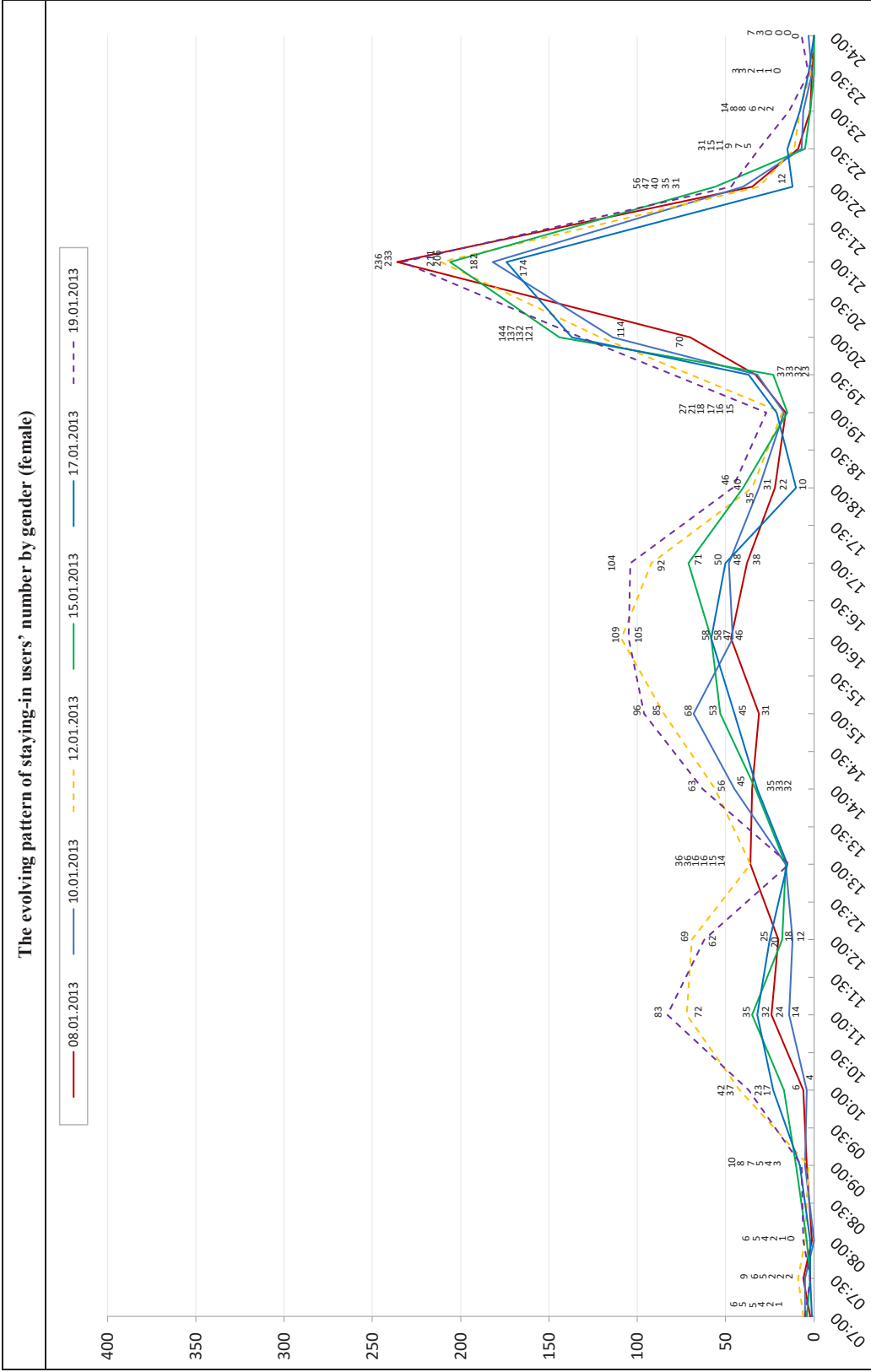


Figure 1.1 The evolving pattern of users' number by gender in staying-in category - female (6 days in Hero Square)

WATER FOUNTAIN SQUARE

The evolving pattern of staying-in users' number by gender (male)

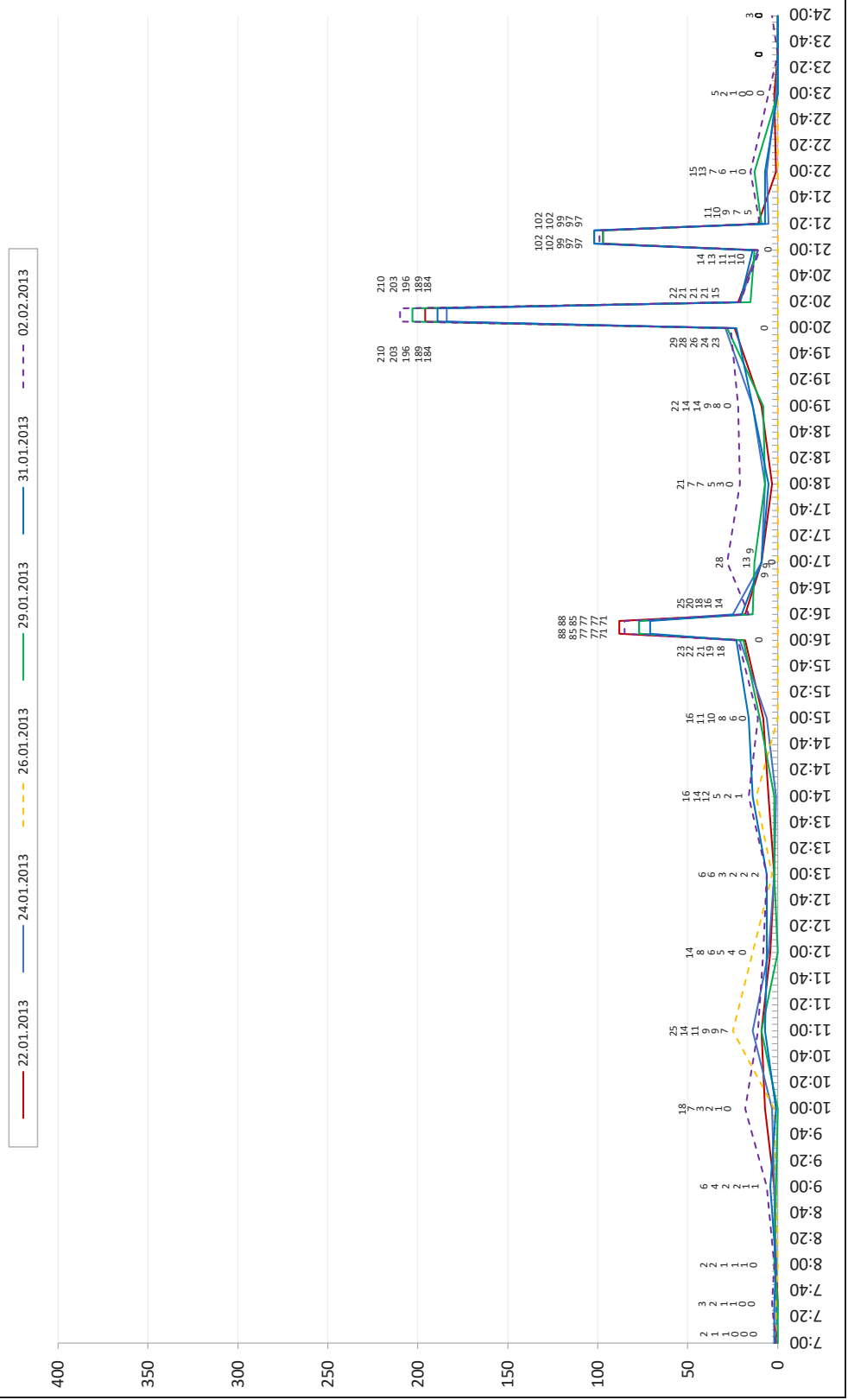


Figure 1.3 The evolving pattern of users' number by gender in staying-in category - male (6 days in Water Fountain Square)

WATER FOUNTAIN SQUARE

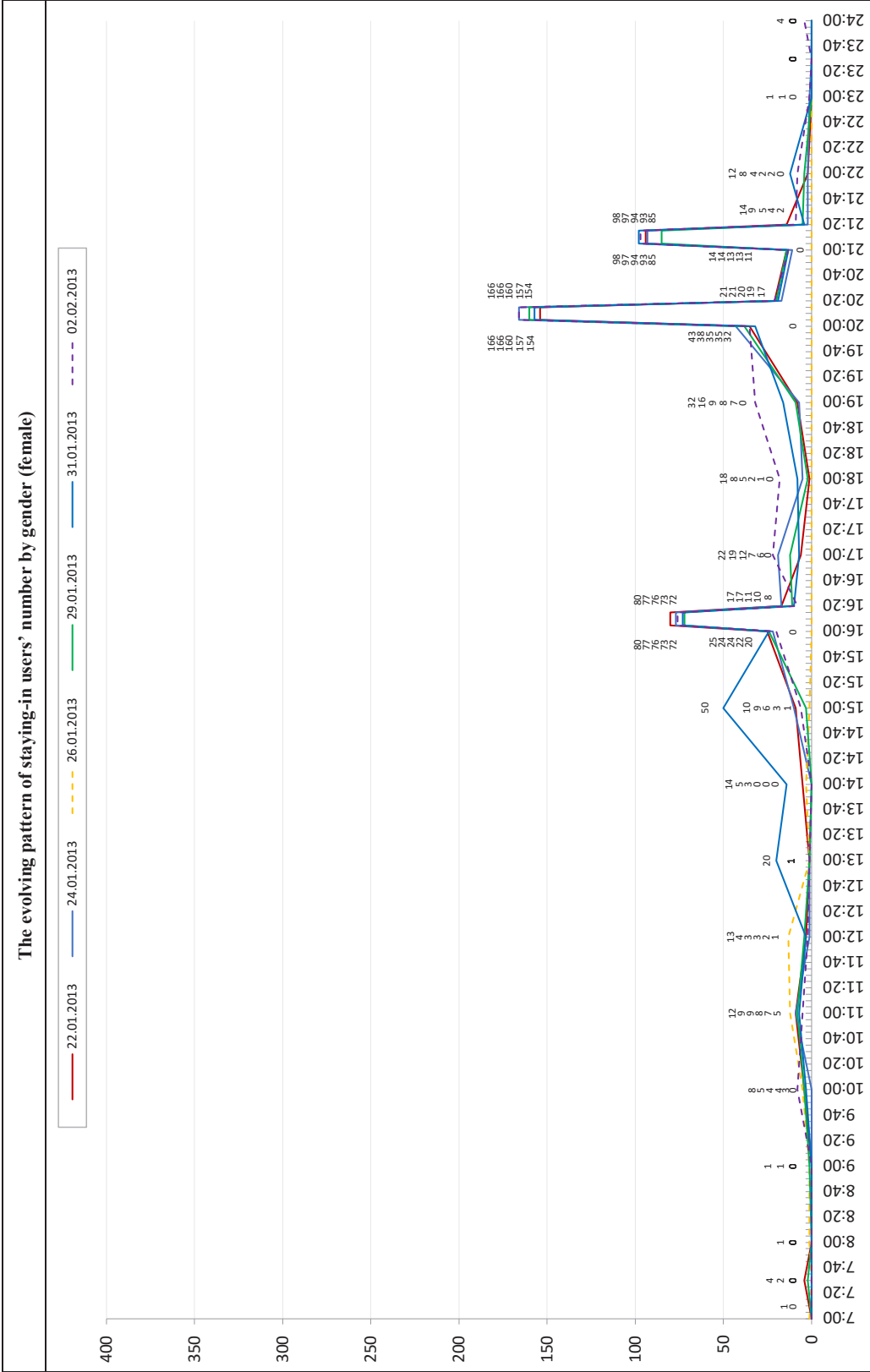


Figure 1.4 The evolving pattern of users' number by gender in staying-in category - female (6 days in Water Fountain Square)

LIGHTING SQUARE

The evolving pattern of staying-in users' number by gender (male)

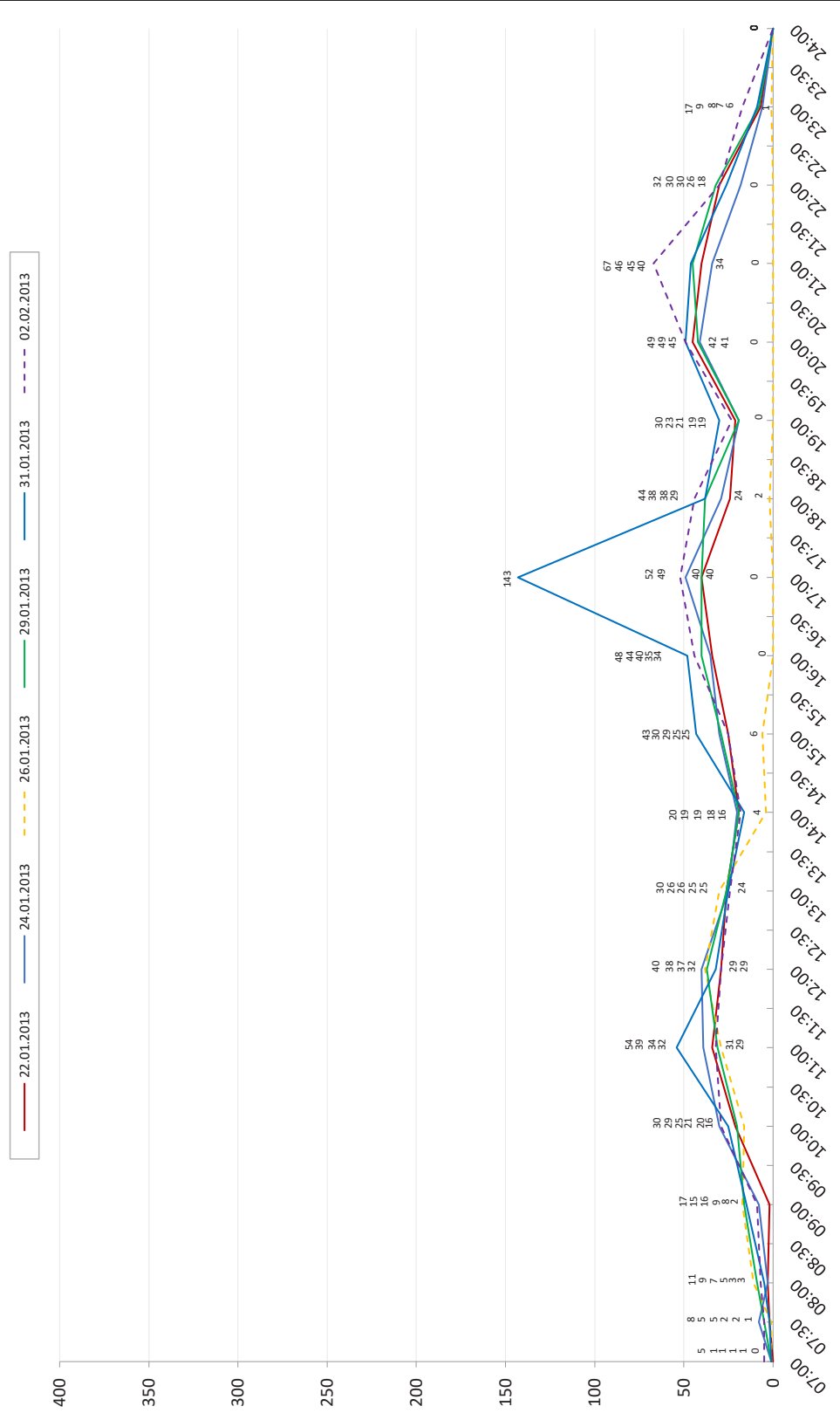


Figure 1.5 The evolving pattern of users' number by gender in staying-in category - male (6 days in Lighting Square)

LIGHTING SQUARE

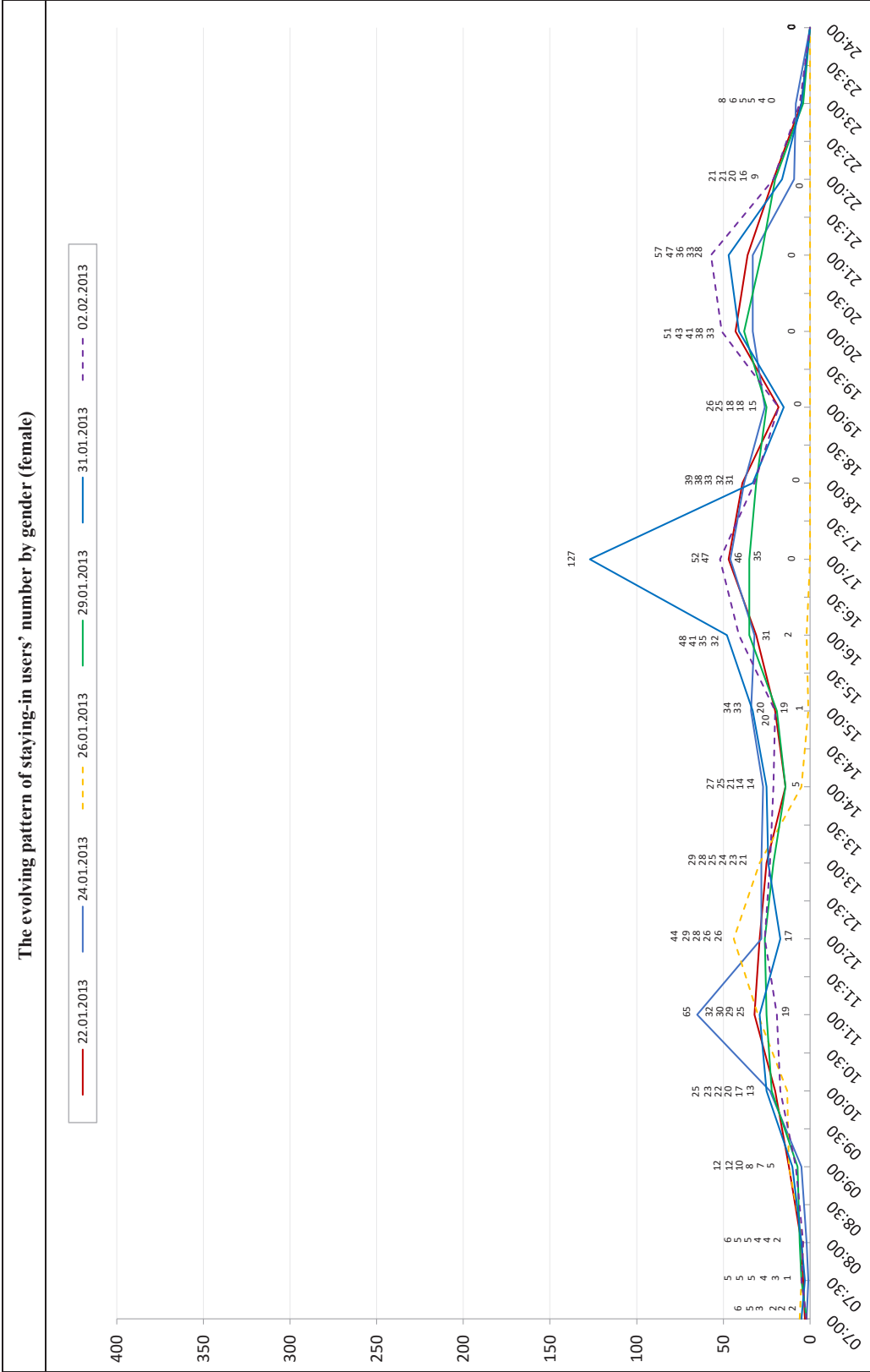


Figure 1.6 The evolving pattern of users' number by gender in staying-in category - female (6 days in Lighting Square)

**EVOLVING PATTERN
OF USERS' NUMBER
BY AGE**

HERO SQUARE

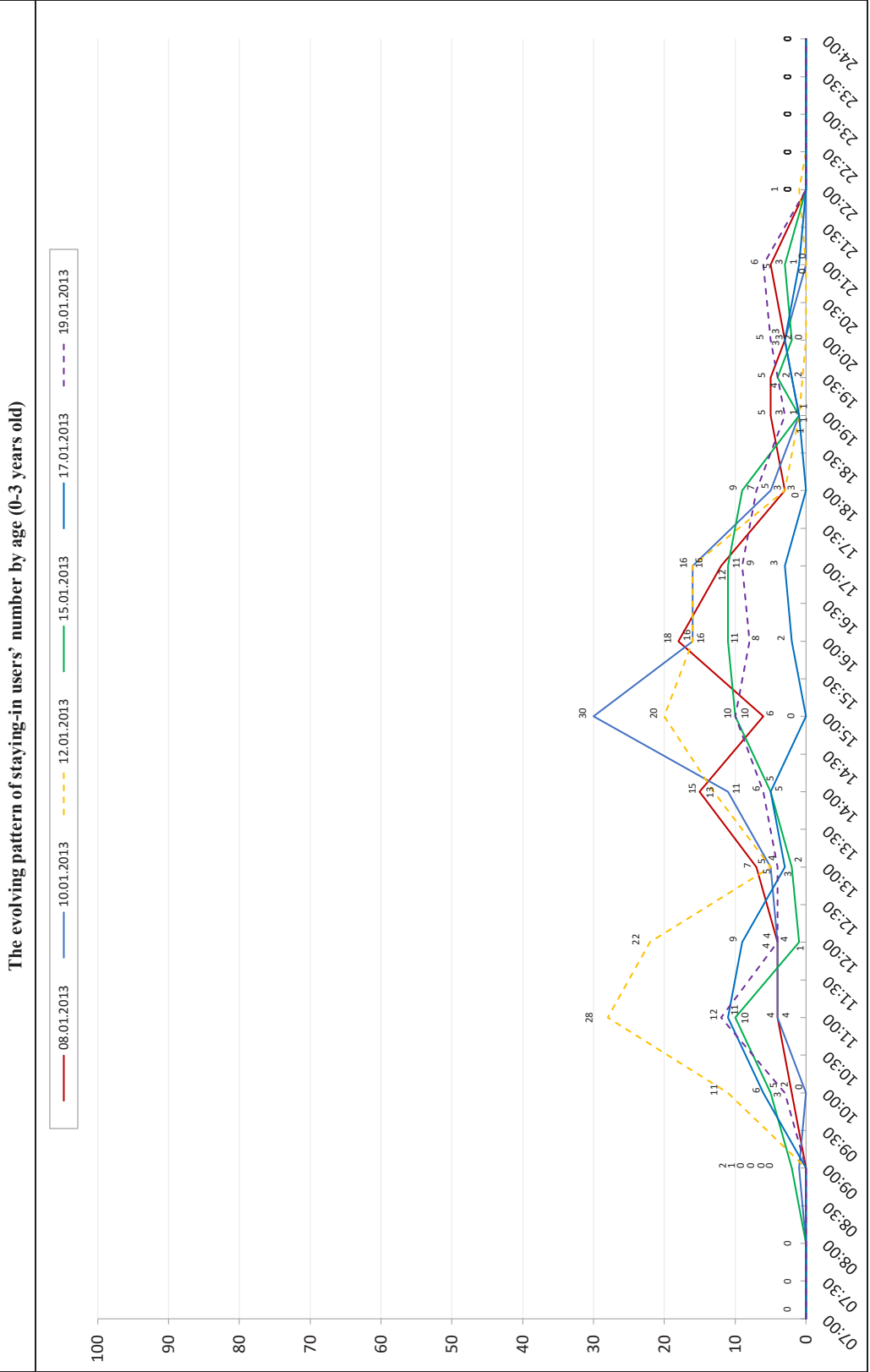


Figure 1.7 The evolving pattern of users' number by age in staying-in category - 0-3 years old (6 days in Hero Square)

HERO SQUARE

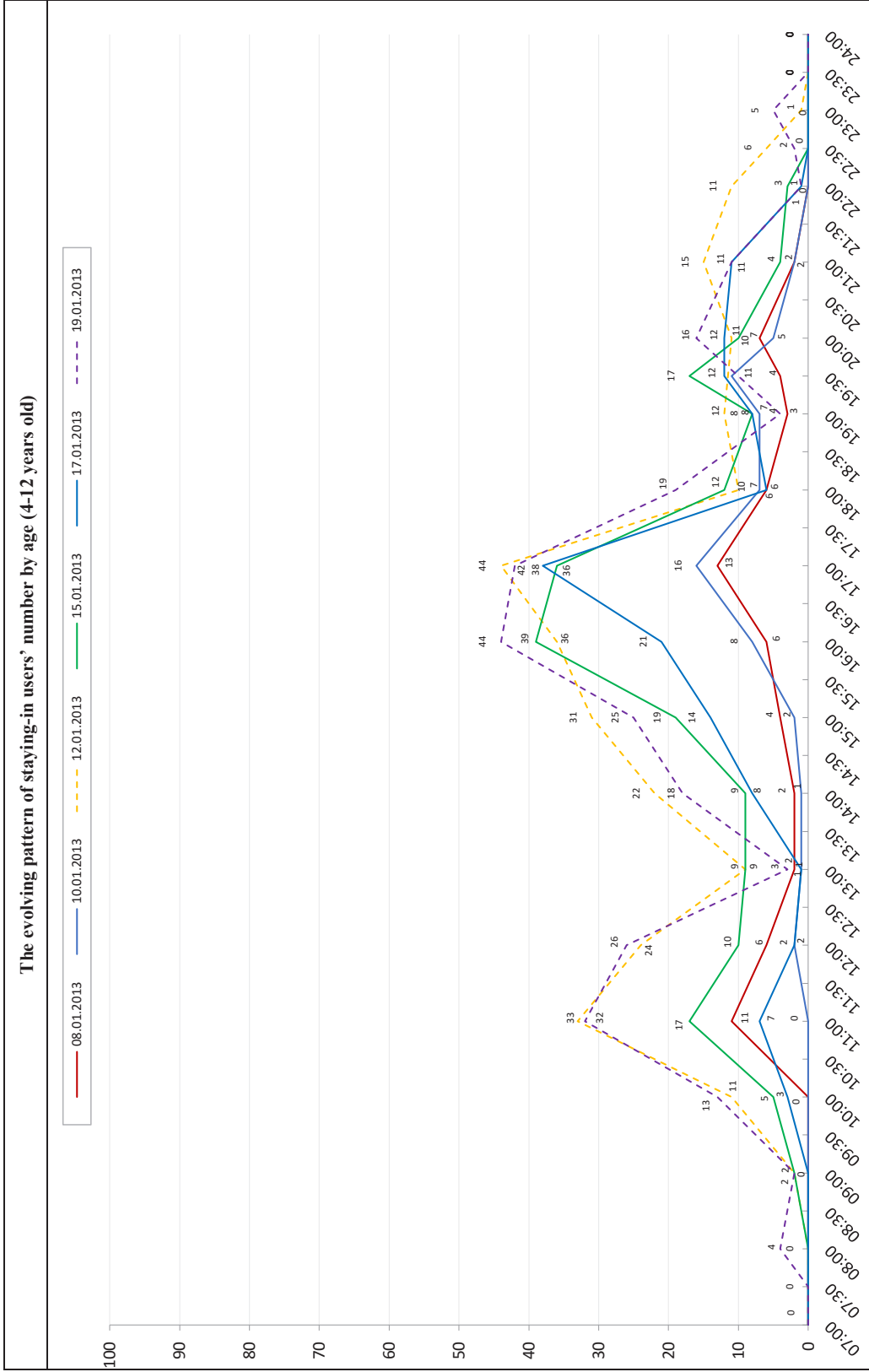


Figure 1.8 The evolving pattern of users' number by age in staying-in category - 4-12 years old (6 days in Hero Square)

HERO SQUARE

The evolving pattern of staying-in users' number by age (13-18 years old)

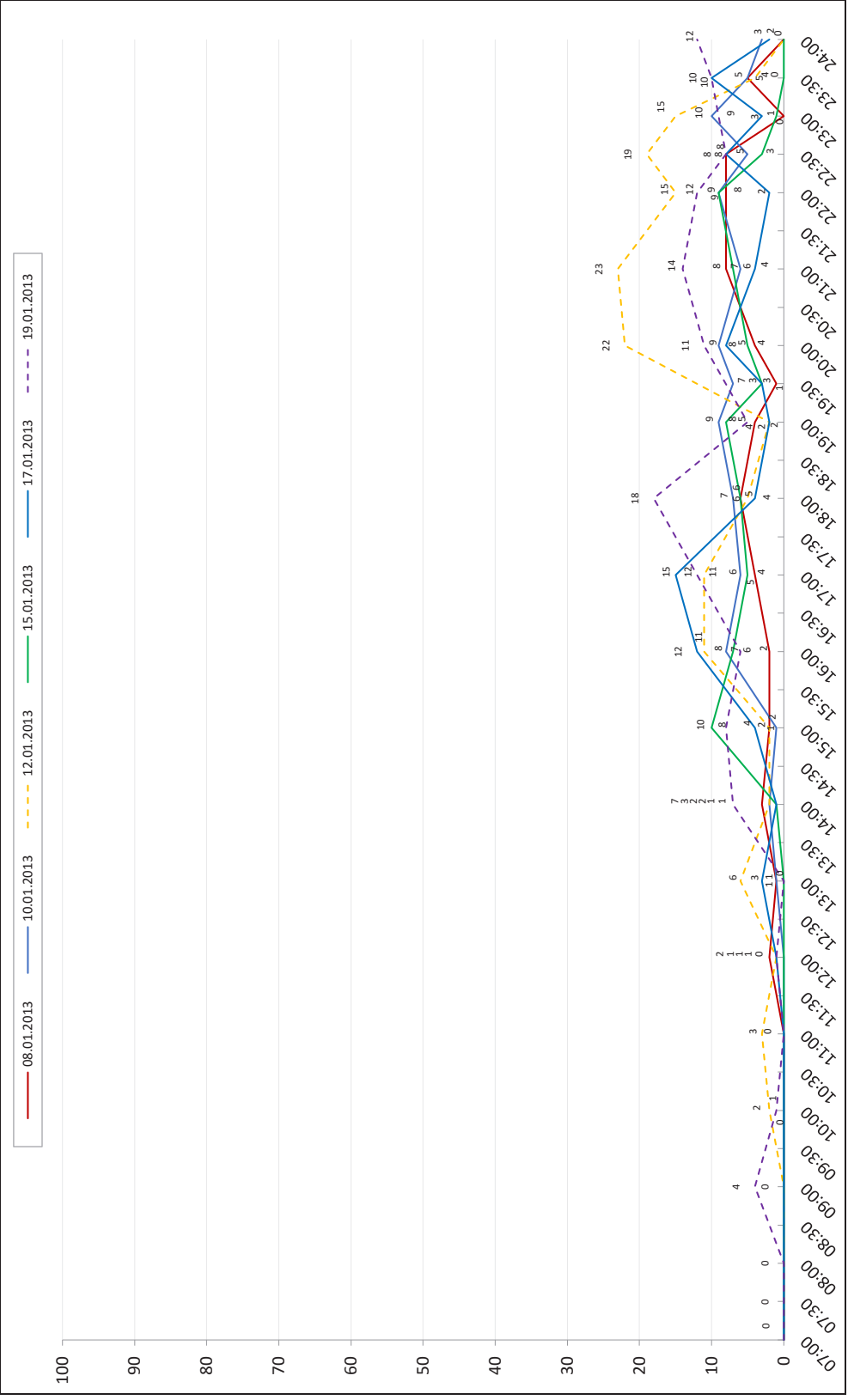


Figure 1.9 The evolving pattern of users' number by age in staying-in category - 13-18 years old (6 days in Hero Square)

HERO SQUARE

The evolving pattern of staying-in users' number by age (19-24 years old)

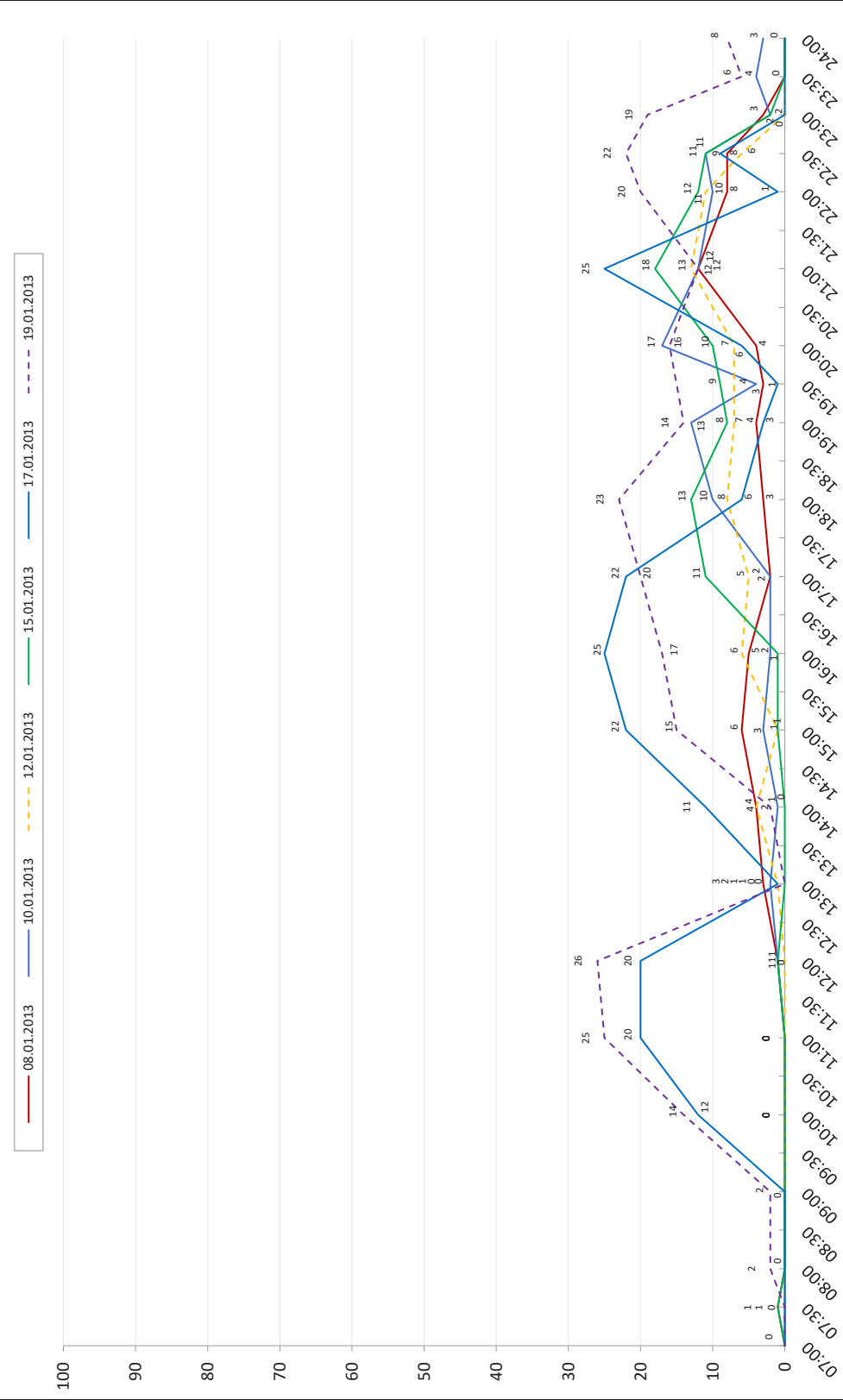


Figure 1.10 The evolving pattern of users' number by age in staying-in category - 19-24 years old (6 days in Hero Square)

HERO SQUARE

The evolving pattern of staying-in users' number by age (25-64 years old)

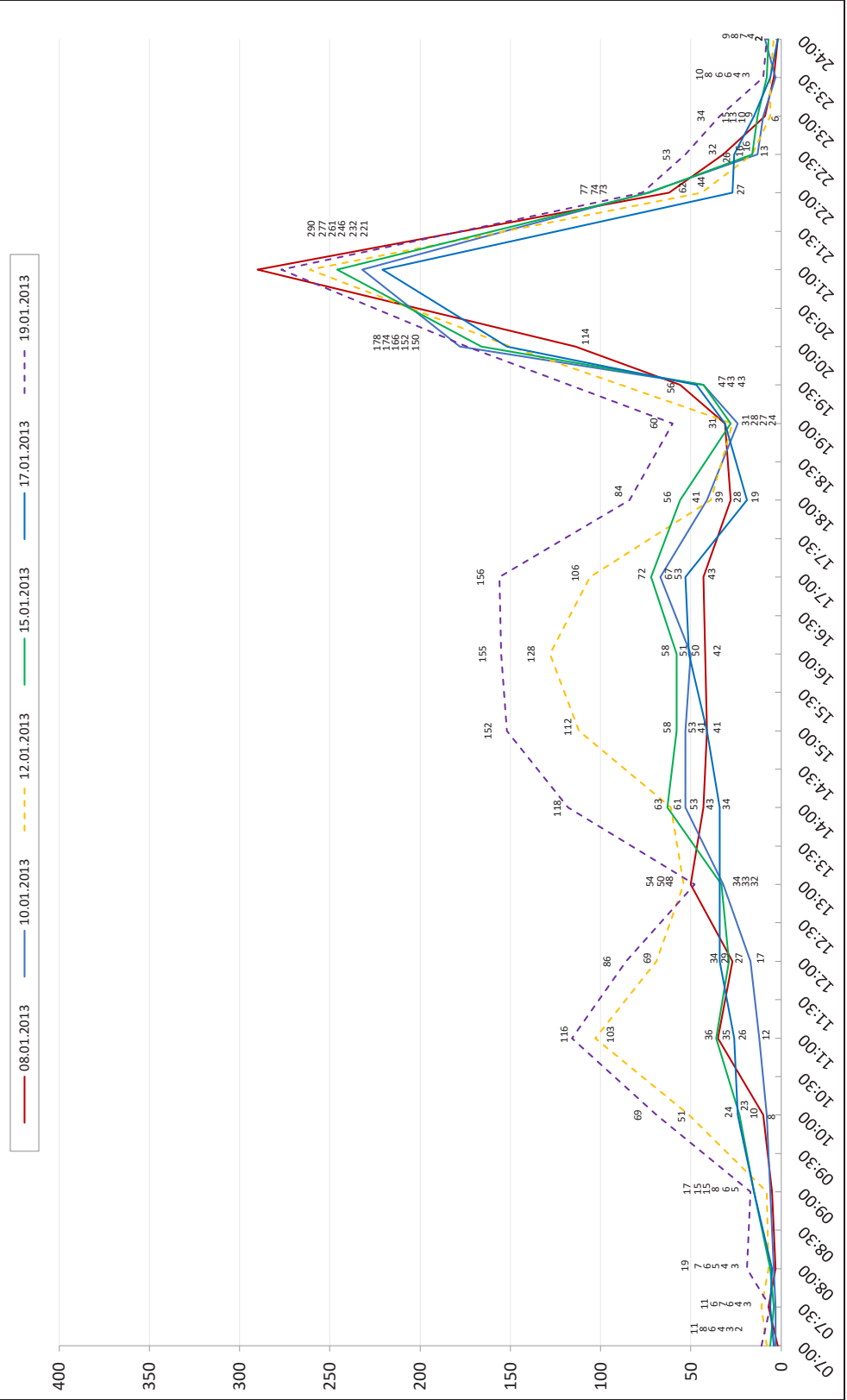


Figure 1.11 The evolving pattern of users' number by age in staying-in category - 25-64 years old (6 days in Hero Square)

HERO SQUARE

The evolving pattern of staying-in users' number by age (65+ years old)

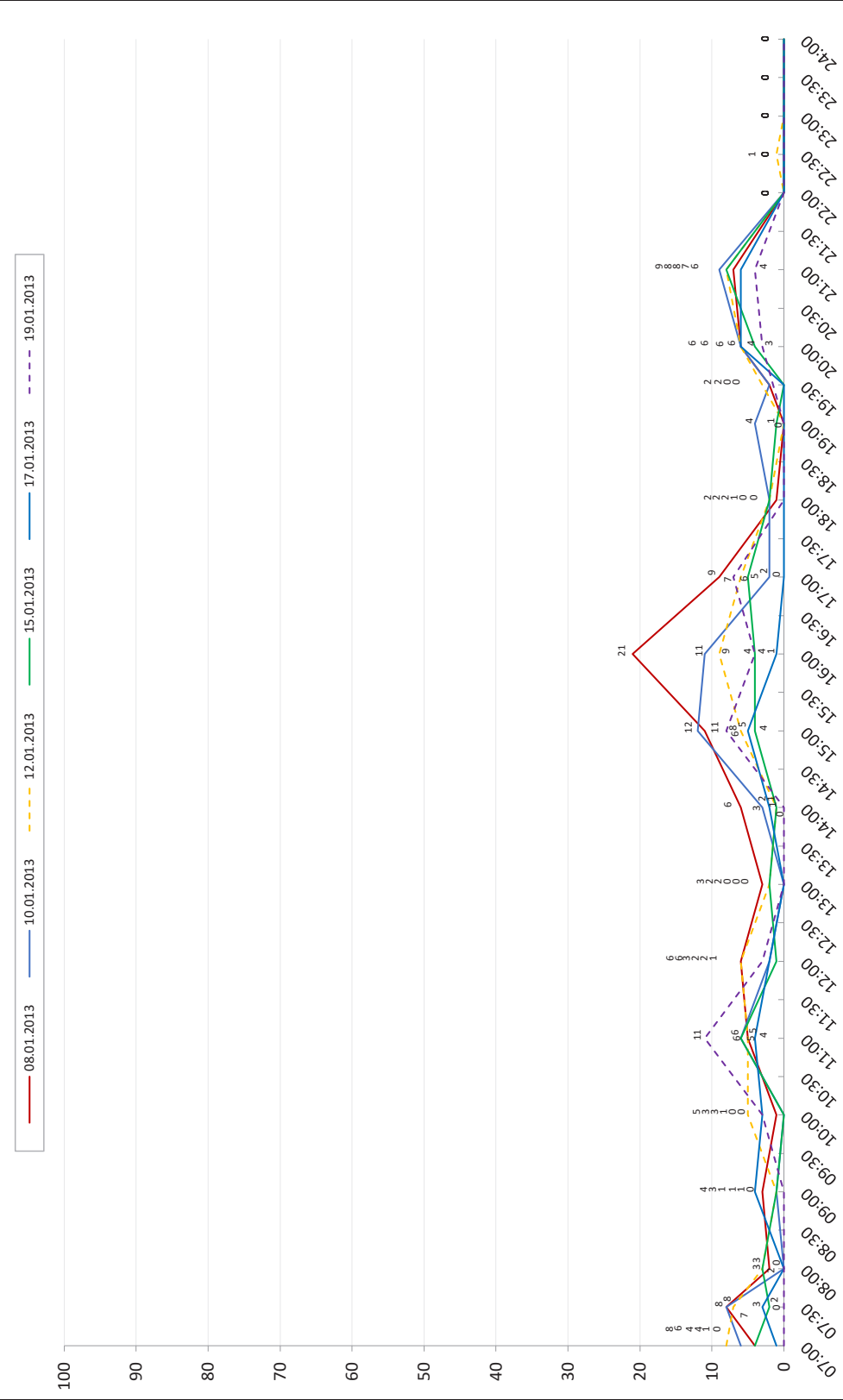


Figure 1.12 The evolving pattern of users' number by age in staying-in category - 65+ years old (6 days in Hero Square)

WATER FOUNTAIN SQUARE

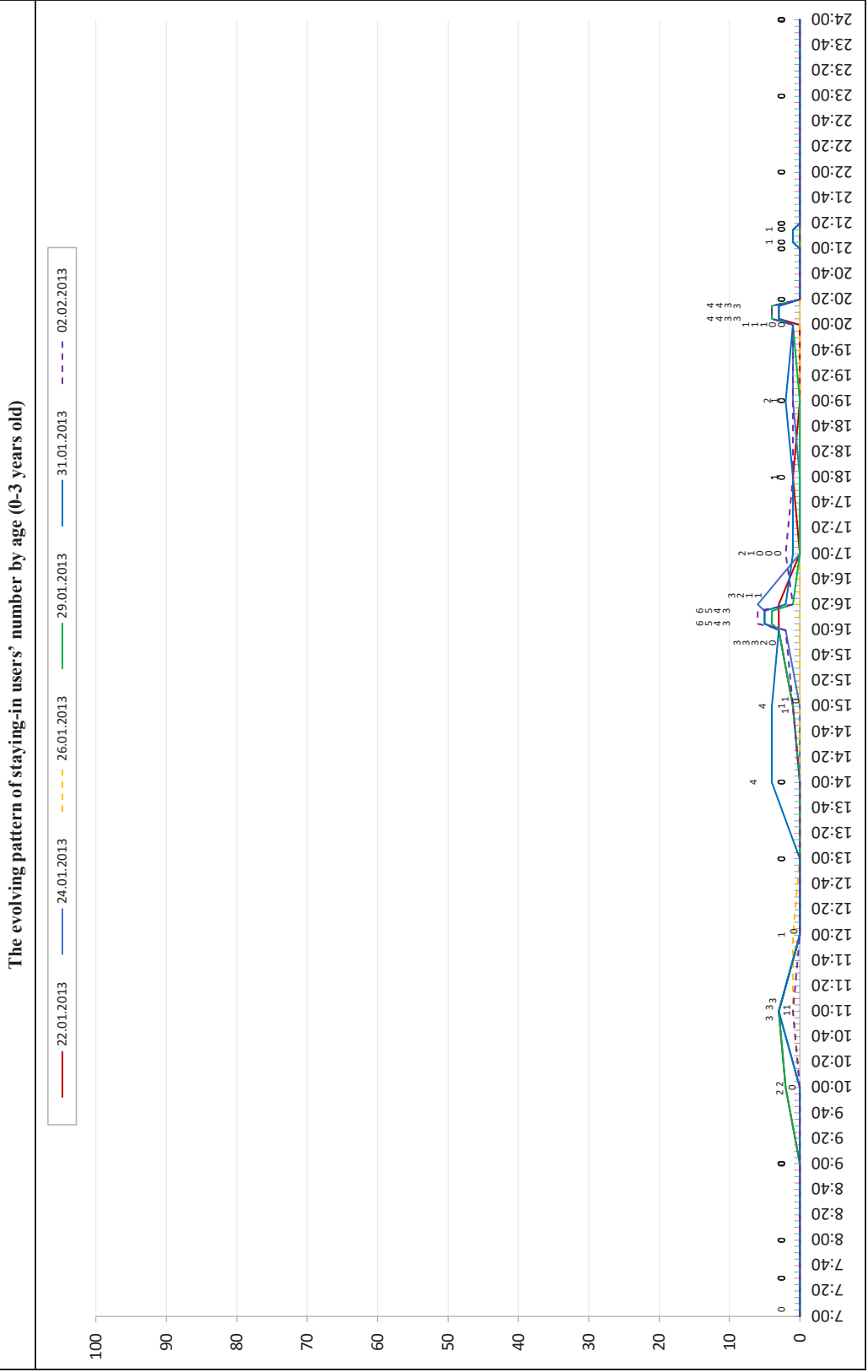


Figure 1.13 The evolving pattern of users' number by age in staying-in category - 0-3 years old (6 days in Water Fountain Square)

WATER FOUNTAIN SQUARE

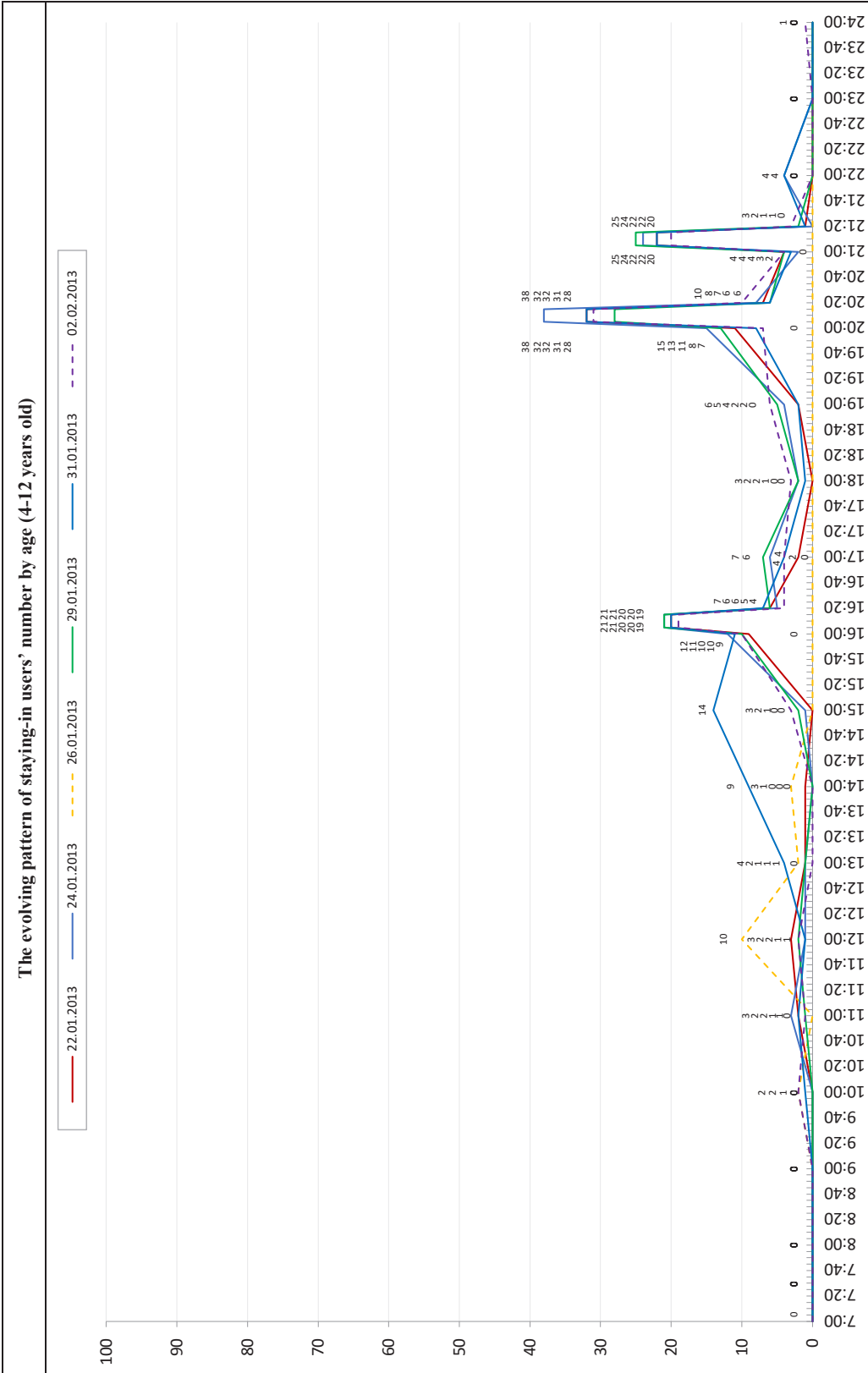


Figure 1.14 The evolving pattern of users' number by age in staying-in category - 4-12 years old (6 days in Water Fountain Square)

WATER FOUNTAIN SQUARE

The evolving pattern of staying-in users' number by age (13-18 years old)

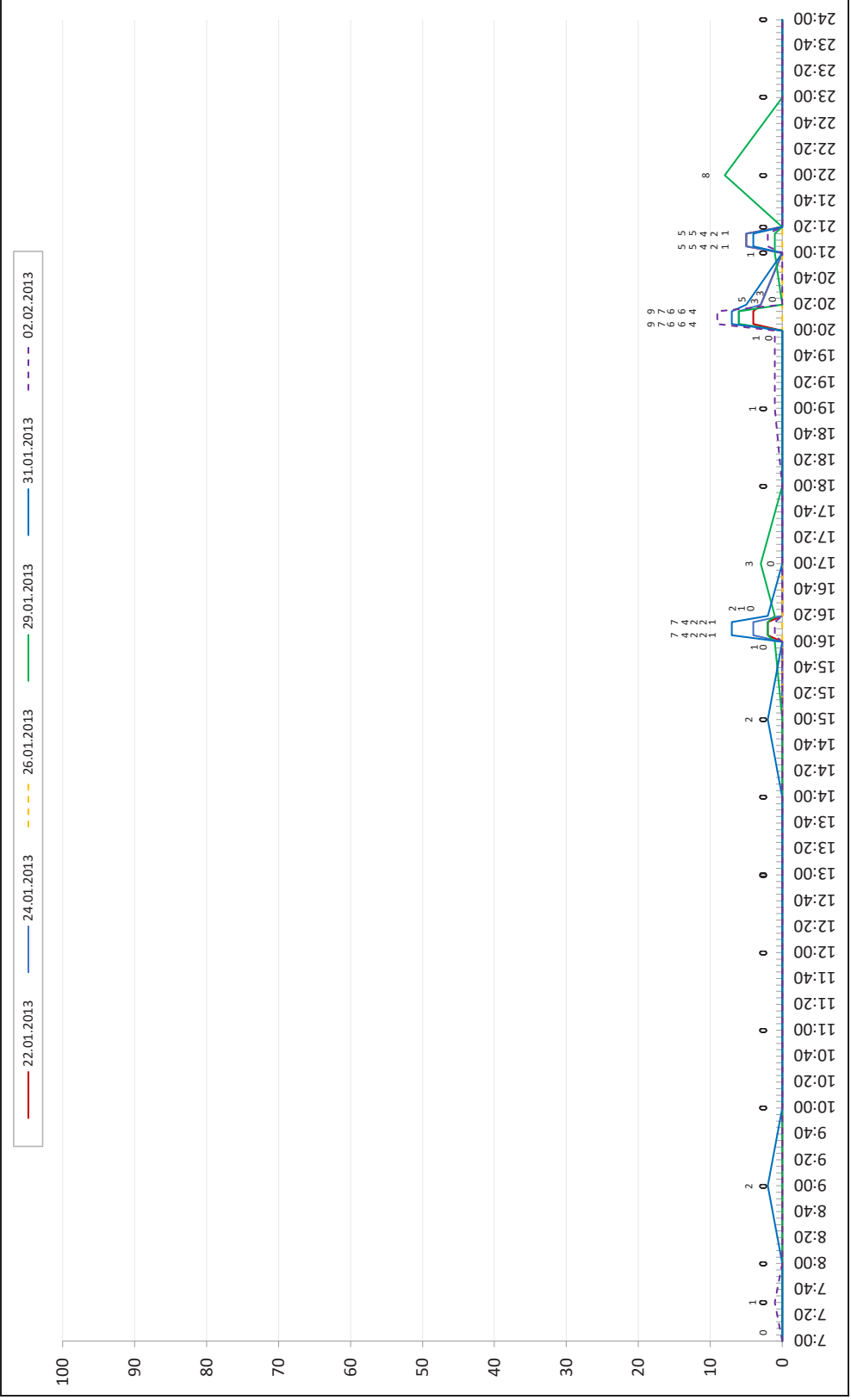


Figure 1.15 The evolving pattern of users' number by age in staying-in category - 13-18 years old (6 days in Water Fountain Square)

WATER FOUNTAIN SQUARE

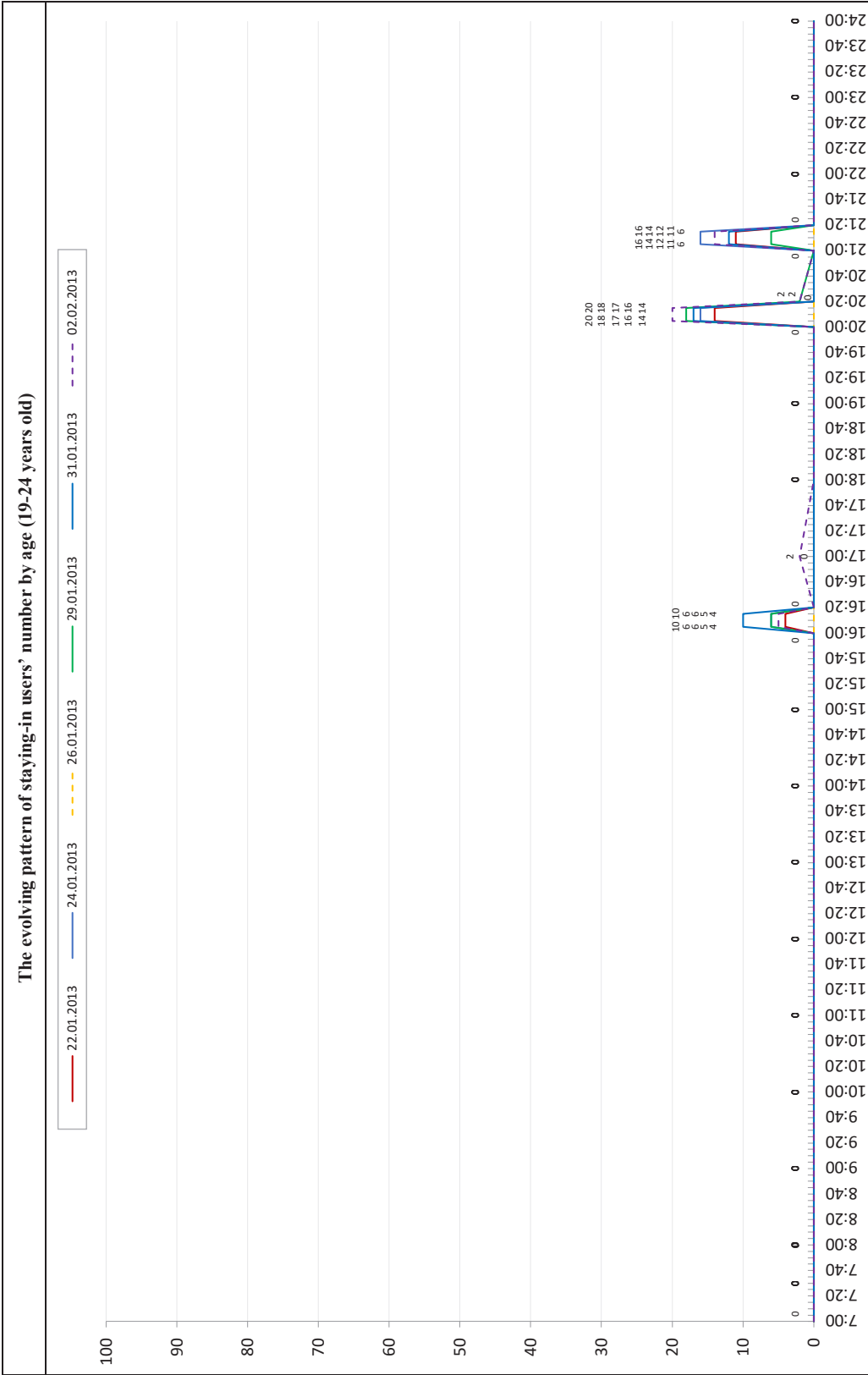


Figure 1.16 The evolving pattern of users' number by age in staying-in category - 19-24 years old (6 days in Water Fountain Square)

WATER FOUNTAIN SQUARE

The evolving pattern of staying-in users' number by age (25-64 years old)

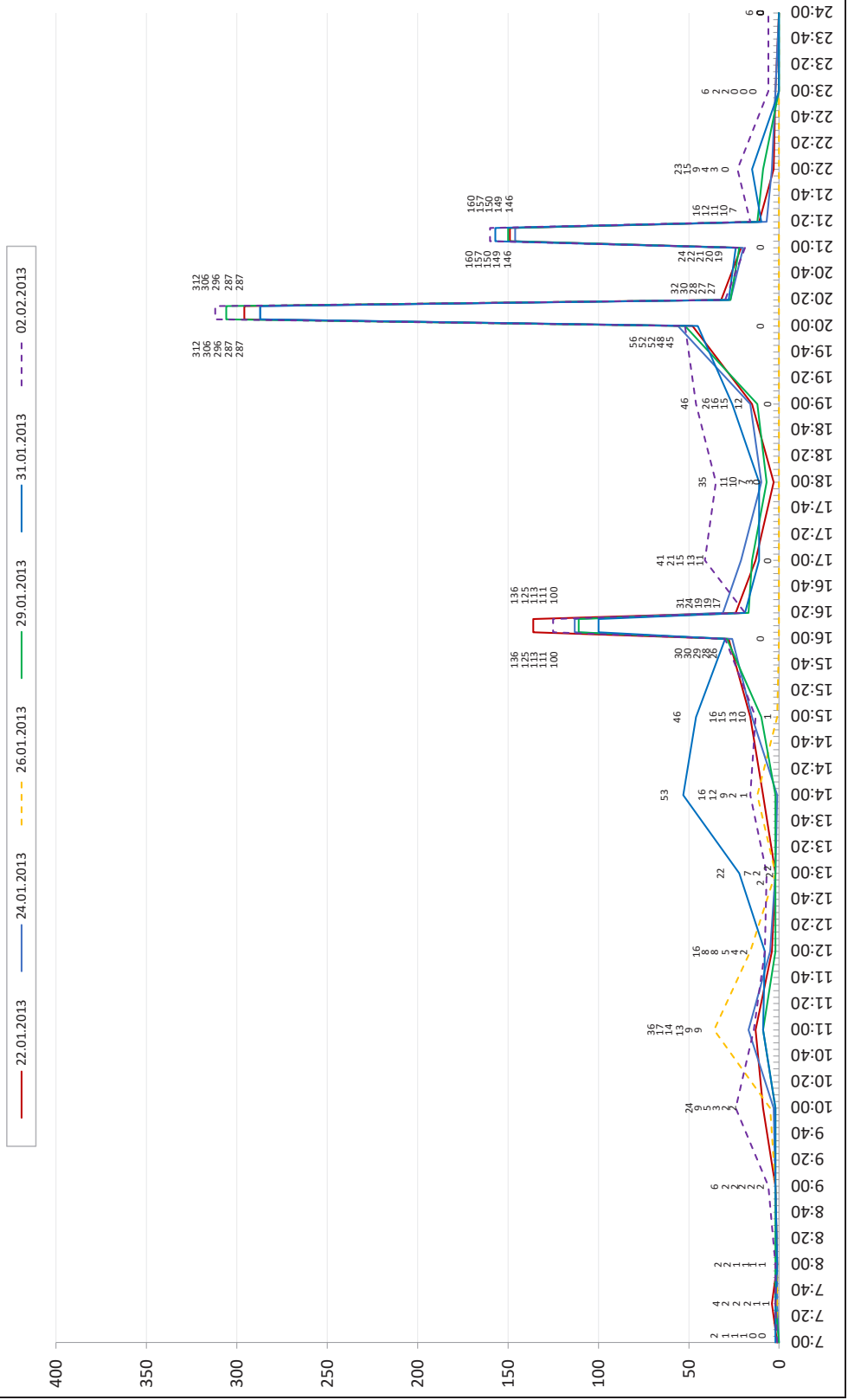


Figure 1.17 The evolving pattern of users' number by age in staying-in category - 25-64 years old (6 days in Water Fountain Square)

WATER FOUNTAIN SQUARE

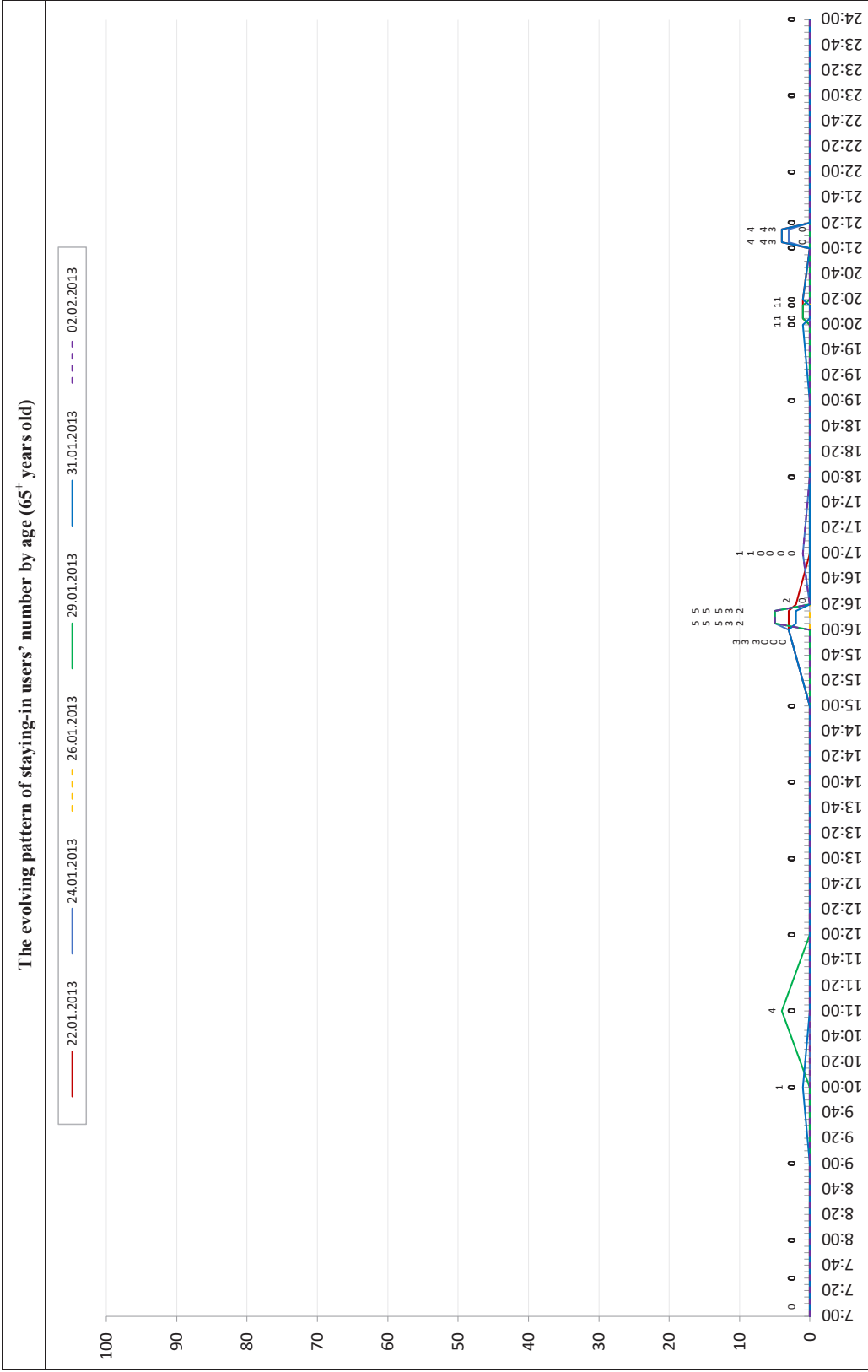


Figure 1.18 The evolving pattern of users' number by age in staying-in category - 65+ years old (6 days in Water Fountain Square)

LIGHTING SQUARE

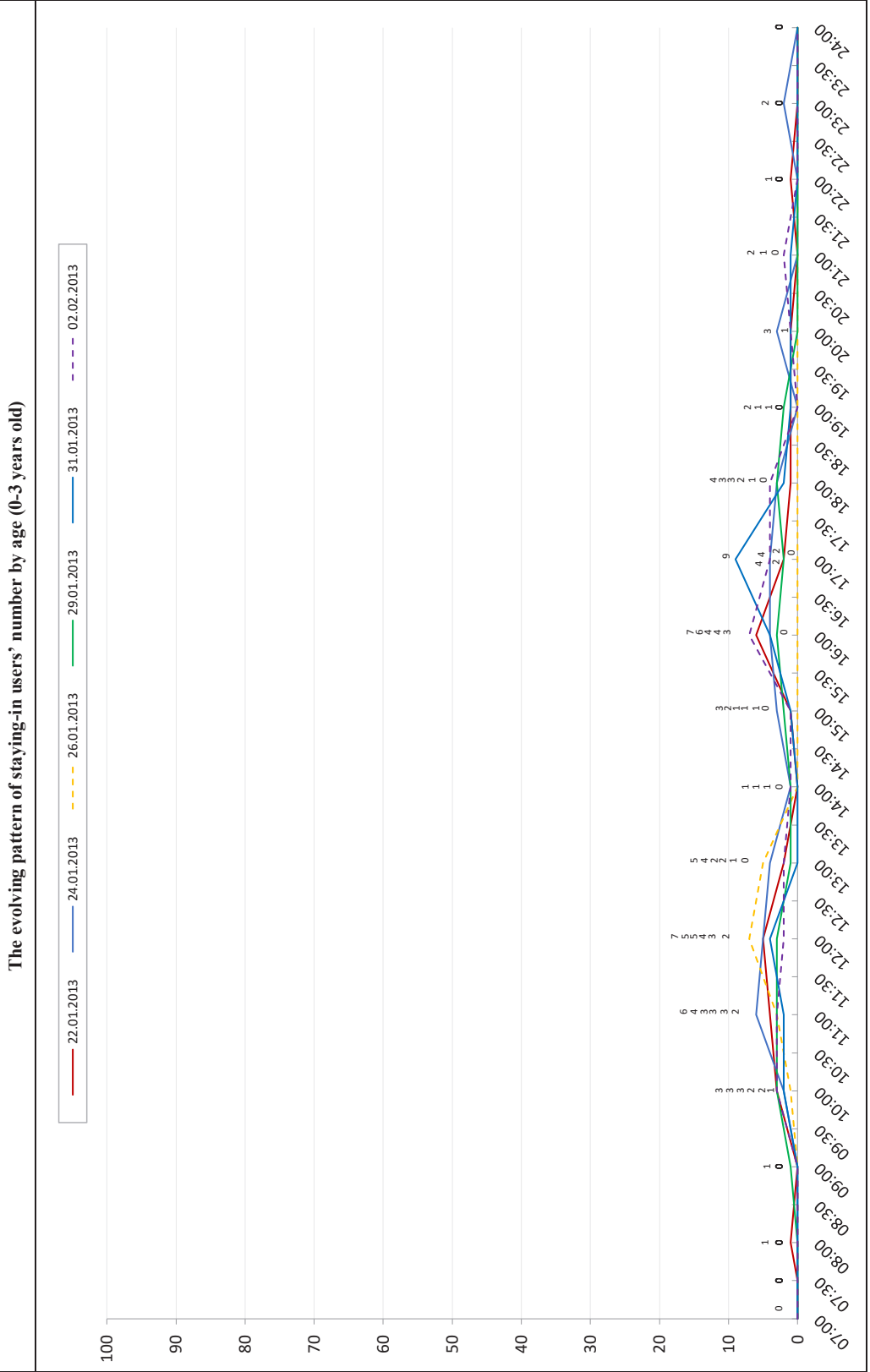


Figure 1.19 The evolving pattern of users' number by age in staying-in category - 0-3 years old (6 days in Lighting Square)

LIGHTING SQUARE

The evolving pattern of staying-in users' number by age (4-12 years old)

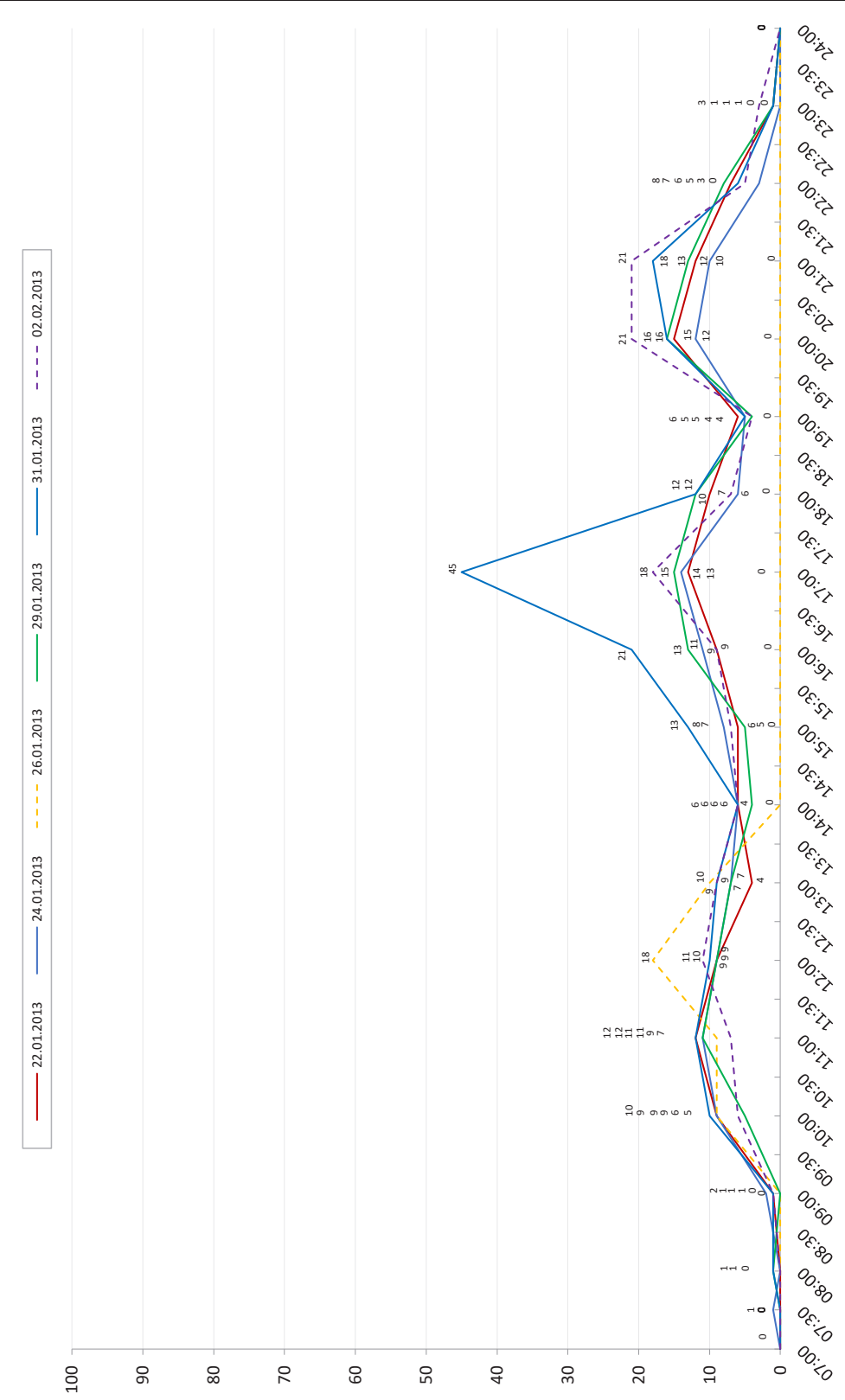


Figure 1.20 The evolving pattern of users' number by age in staying-in category - 4-12 years old (6 days in Lighting Square)

LIGHTING SQUARE

The evolving pattern of staying-in users' number by age (13-18 years old)

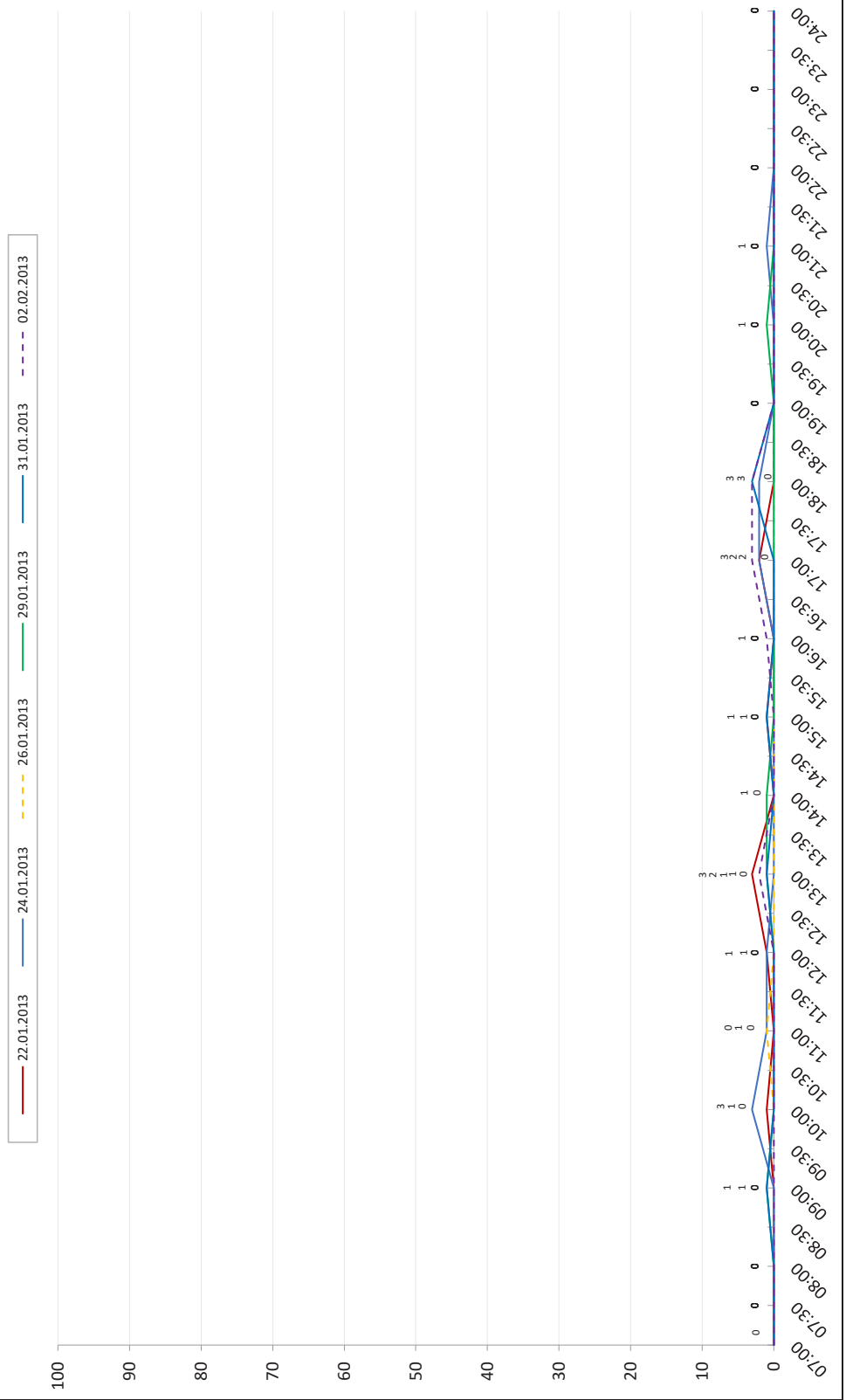


Figure 1.21 The evolving pattern of users' number by age in staying-in category - 13-18 years old (6 days in Lighting Square)

LIGHTING SQUARE

The evolving pattern of staying-in users' number by age (19-24 years old)

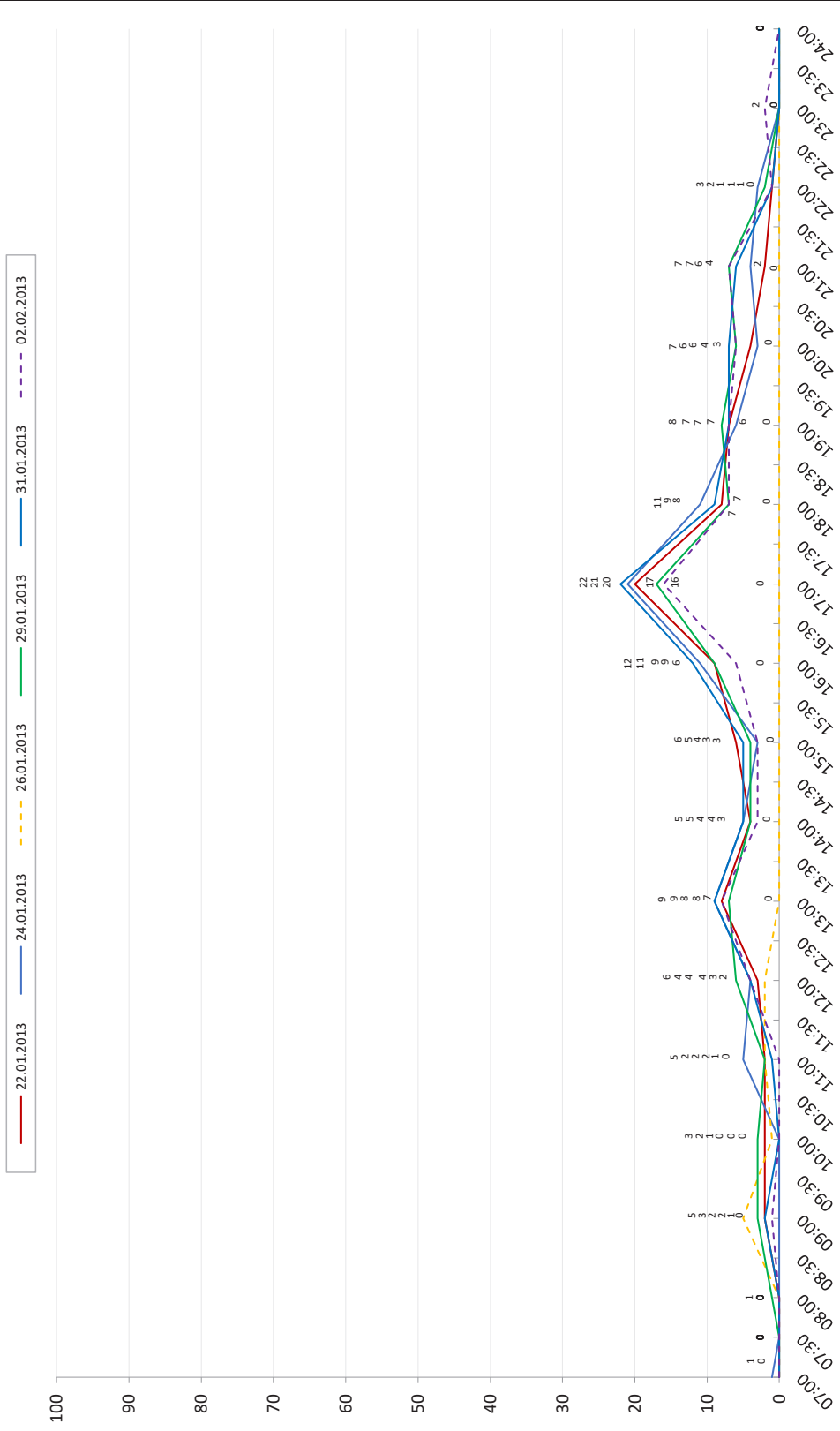


Figure 1.22 The evolving pattern of users' number by age in staying-in category - 19-24 years old (6 days in Lighting Square)

LIGHTING SQUARE

The evolving pattern of staying-in users' number by age (25-64 years old)

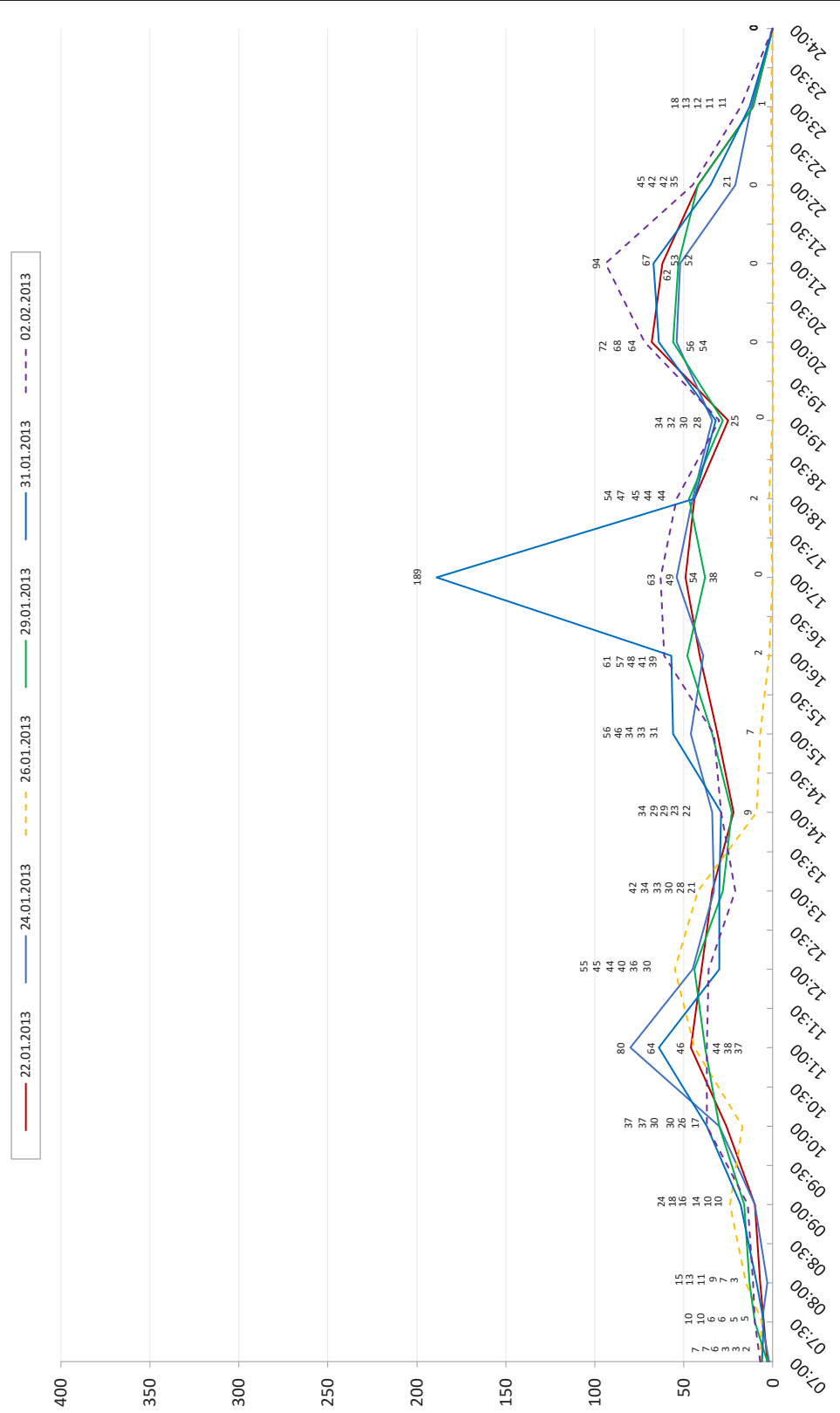


Figure 1.23 The evolving pattern of users' number by age in staying-in category - 25-64 years old (6 days in Lighting Square)

LIGHTING SQUARE

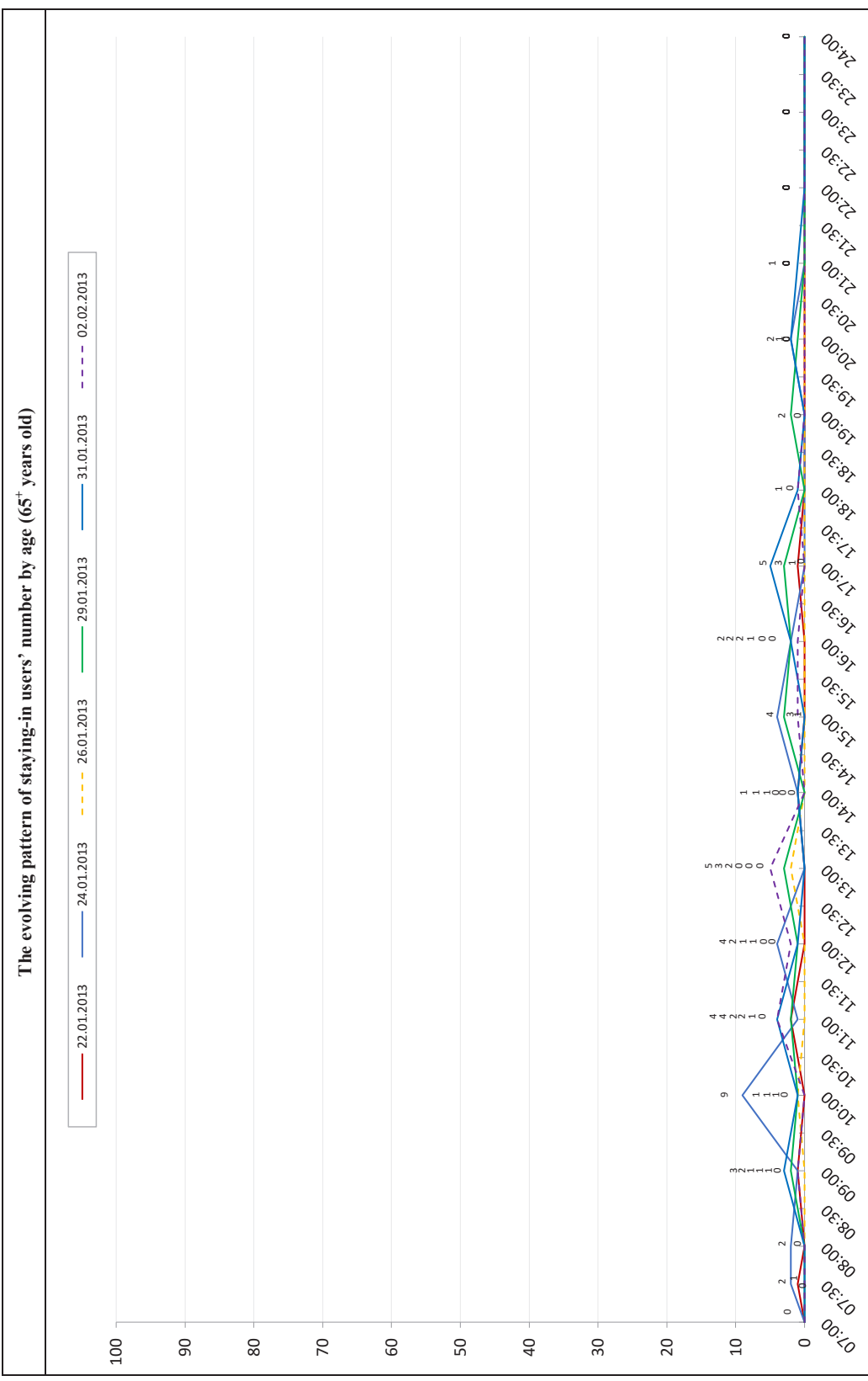


Figure 1.24 The evolving pattern of users' number by age in staying-in category - 65+ years old (6 days in Lighting Square)

**EVOLVING PATTERN
OF USERS' NUMBER
BY GROUP TYPE**

HERO SQUARE

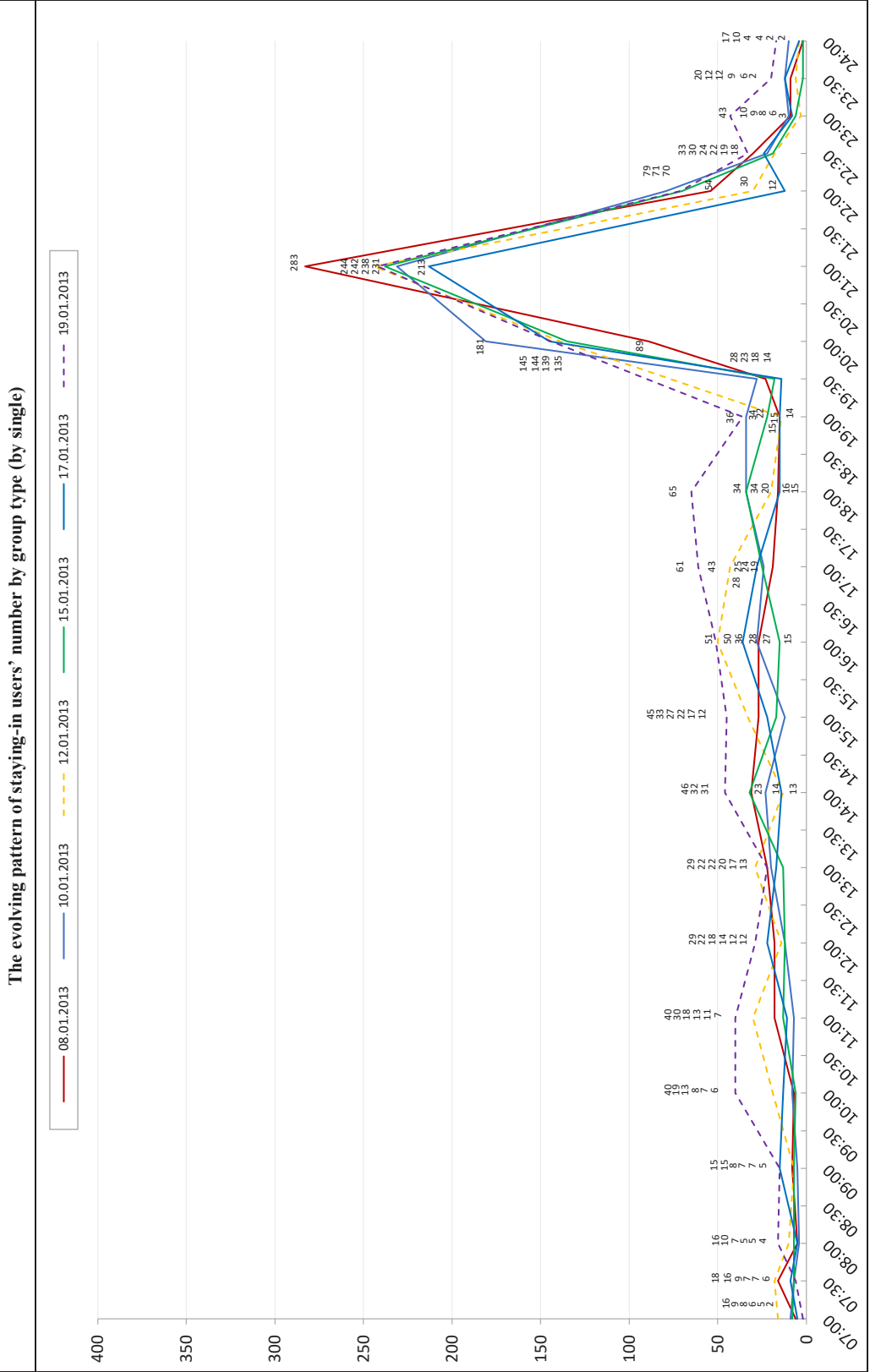


Figure 1.25 The evolving pattern of users' number by group type in staying-in category - by single (6 days in Hero Square)

HERO SQUARE

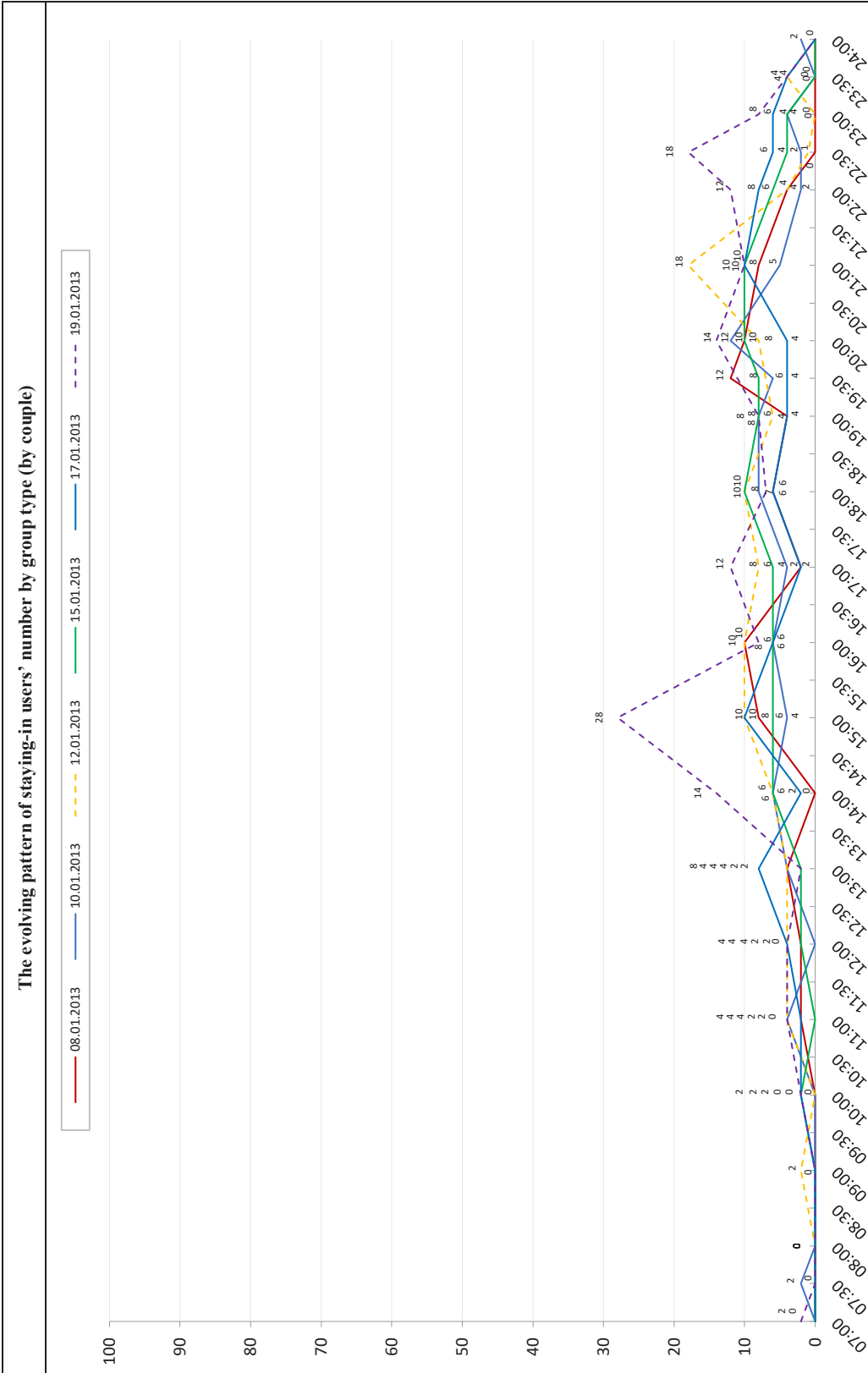


Figure 1.26 The evolving pattern of users' number by group type in staying-in category - by couple (6 days in Hero Square)

HERO SQUARE

The evolving pattern of staying-in users' number by group type (with friend(s))

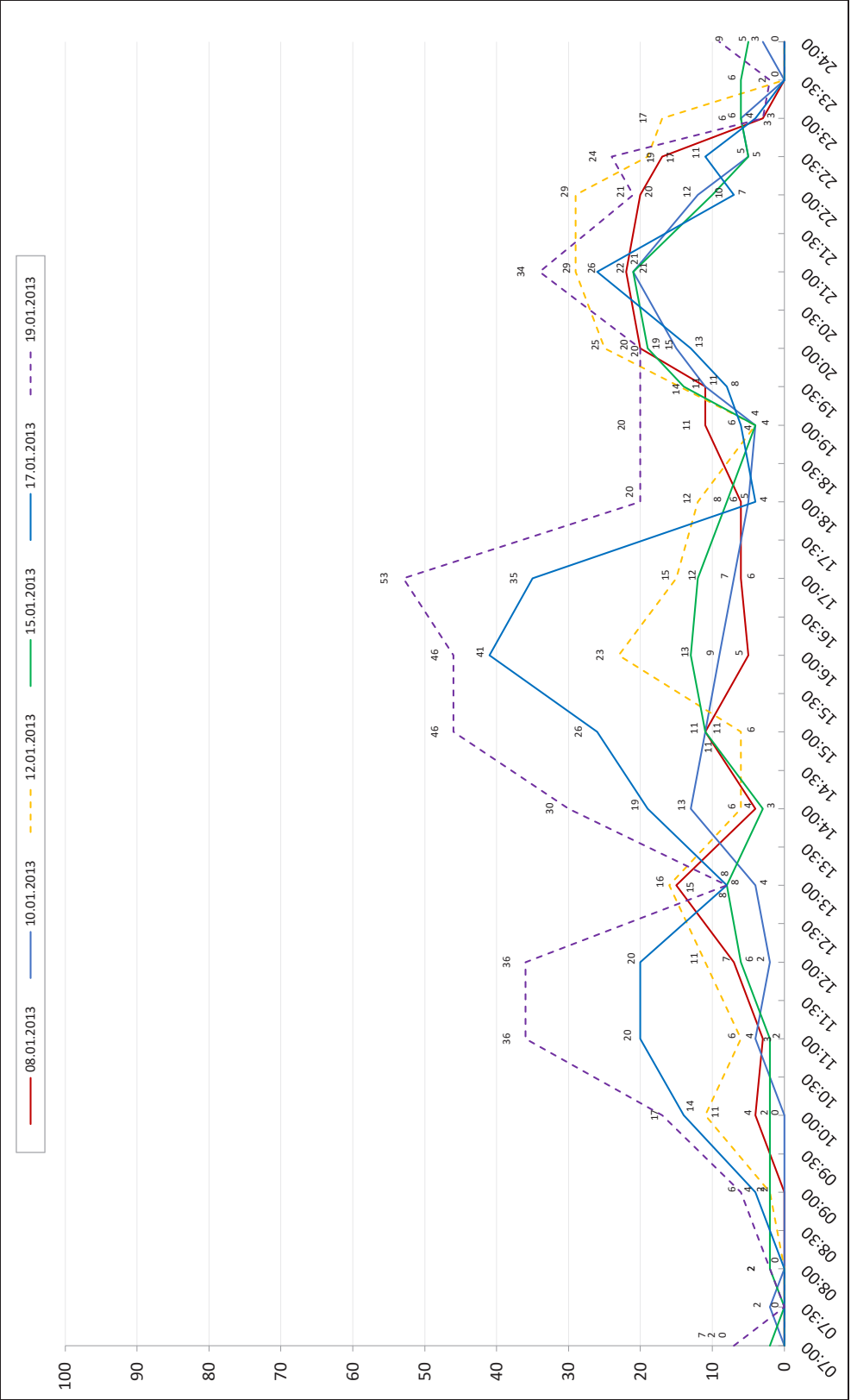


Figure 1.27 The evolving pattern of users' number by group type in staying-in category - with friend(s) (6 days in Hero Square)

HERO SQUARE

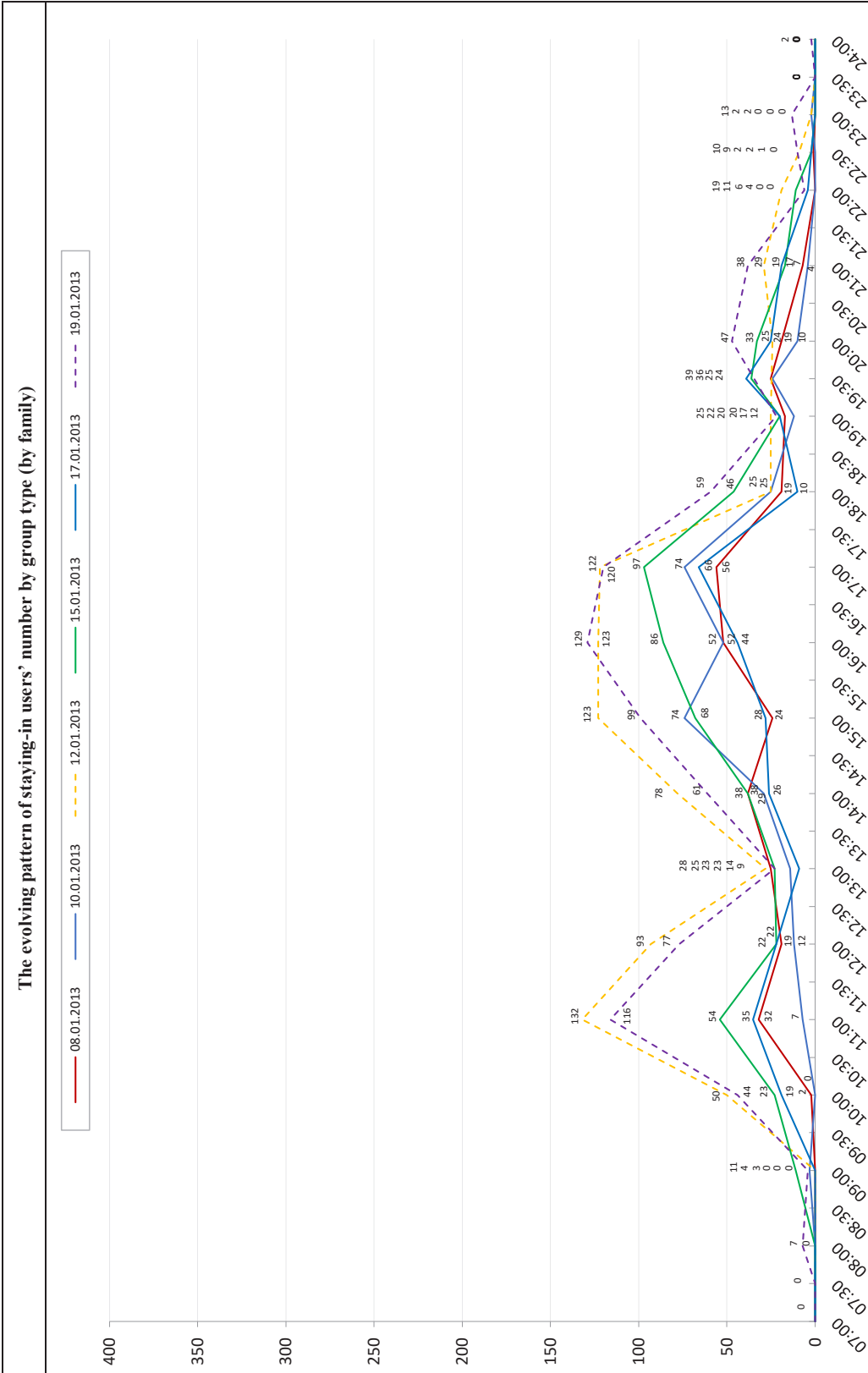


Figure 1.28 The evolving pattern of users' number by group type in staying-in category - with family (6 days in Hero Square)

WATER FOUNTAIN SQUARE

The evolving pattern of staying-in users' number by group type (by single)

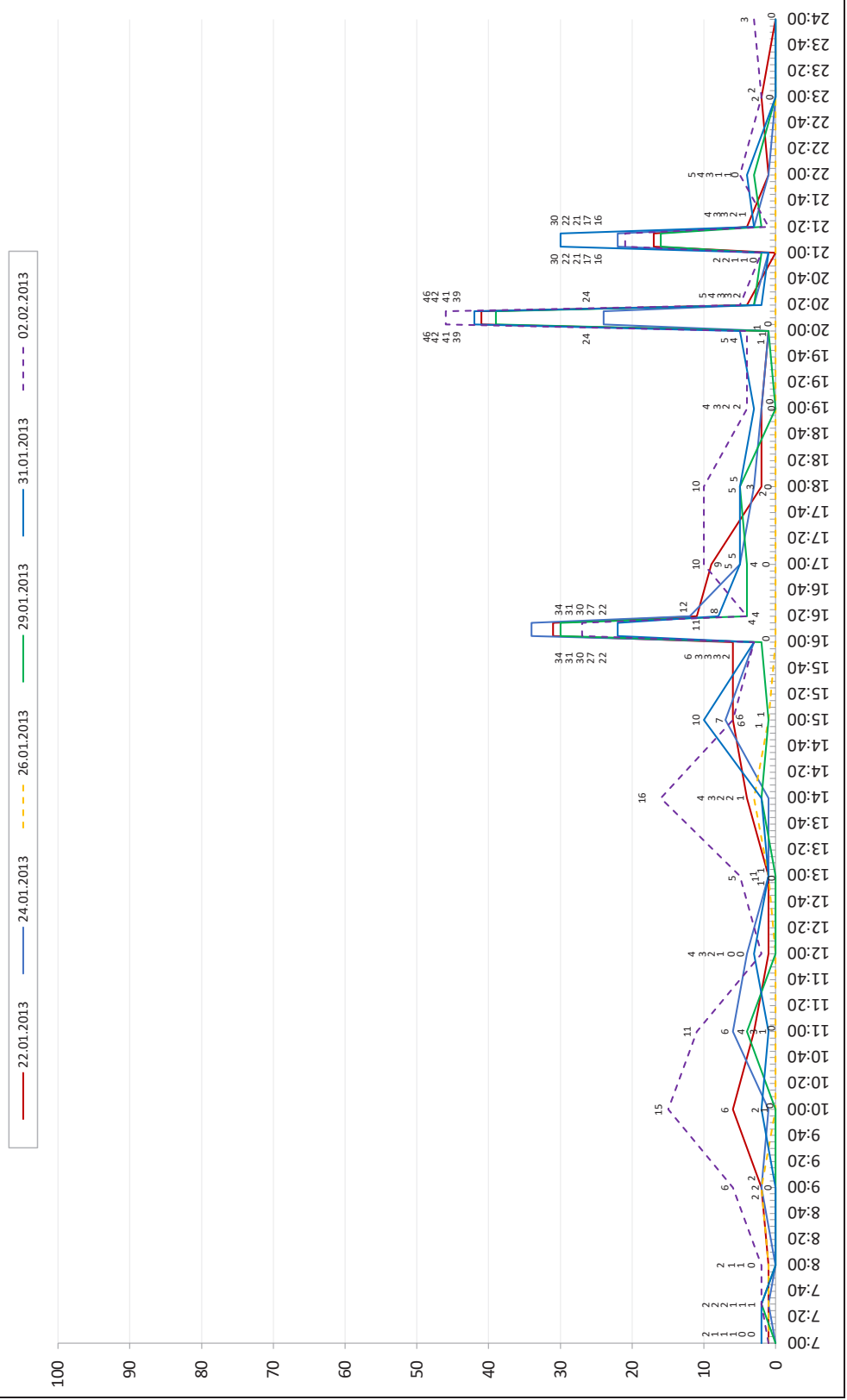


Figure 1.29 The evolving pattern of users' number by group type in staying-in category - by single (6 days in Water Fountain Square)

WATER FOUNTAIN SQUARE

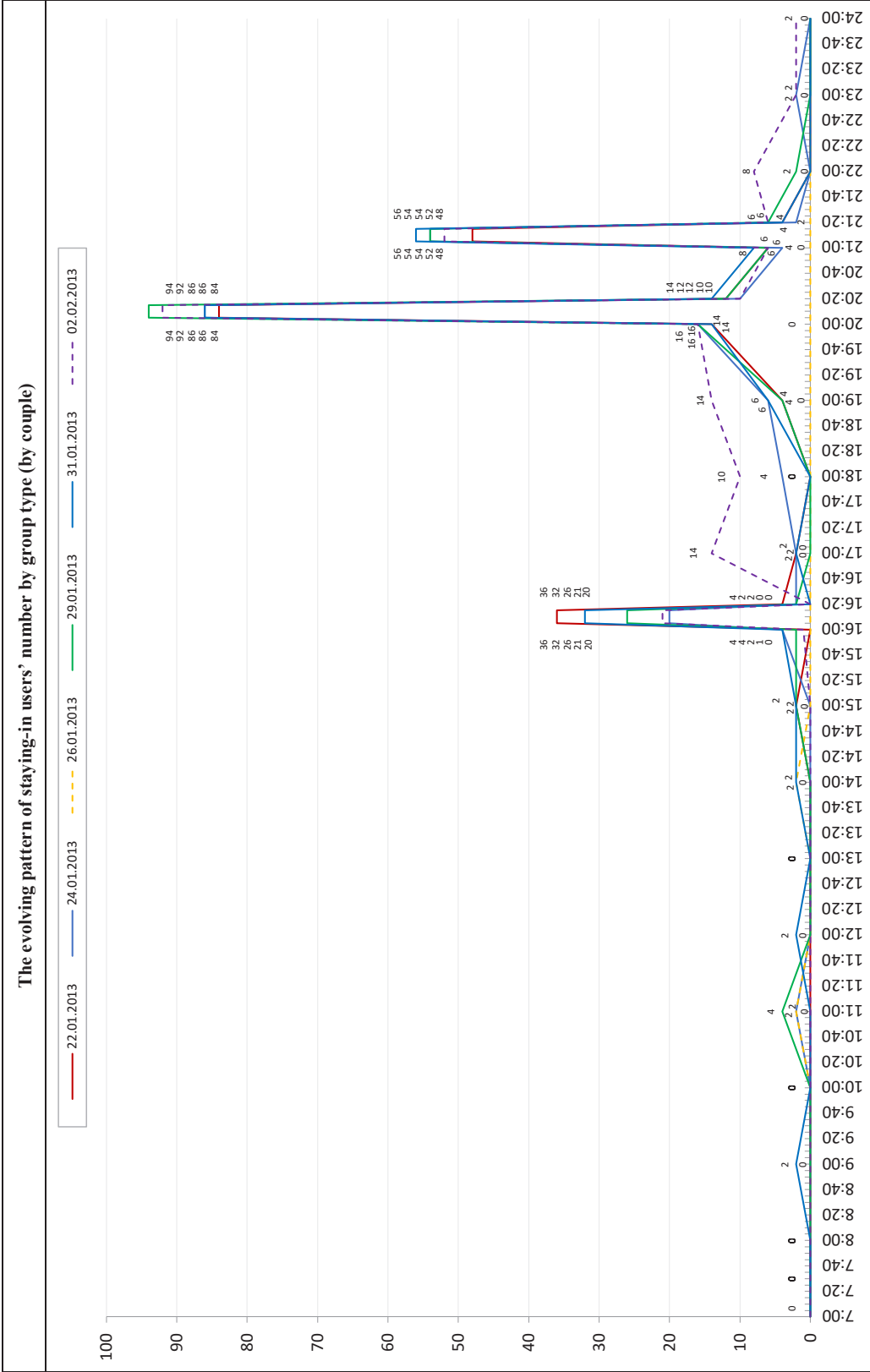


Figure 1.30 The evolving pattern of users' number by group type in staying-in category - by couple (6 days in Water Fountain Square)

WATER FOUNTAIN SQUARE

The evolving pattern of staying-in users' number by group type (with friend(s))

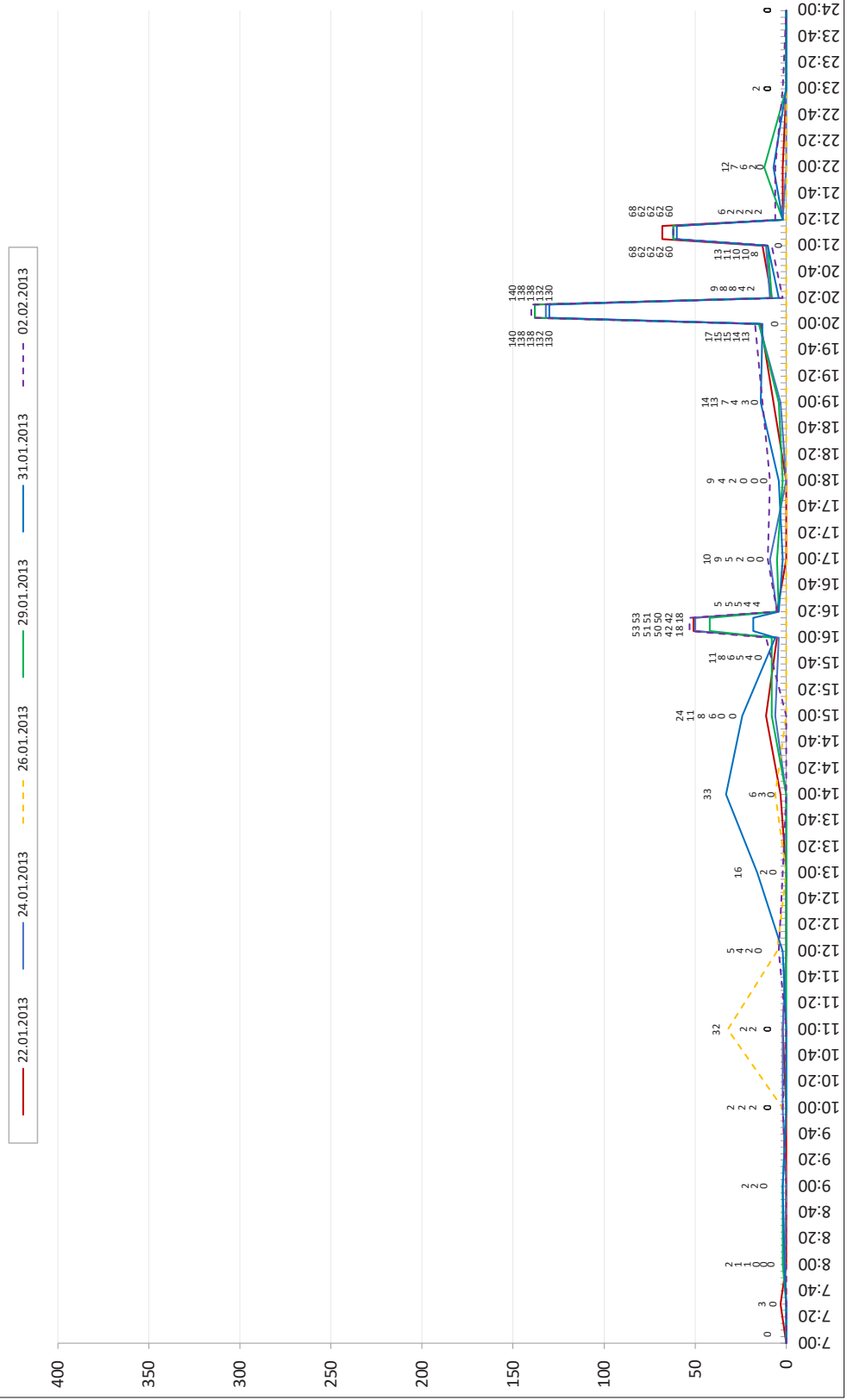


Figure 1.31 The evolving pattern of users' number by group type in staying-in category - with friend(s) (6 days in Water Fountain Square)

LIGHTING SQUARE

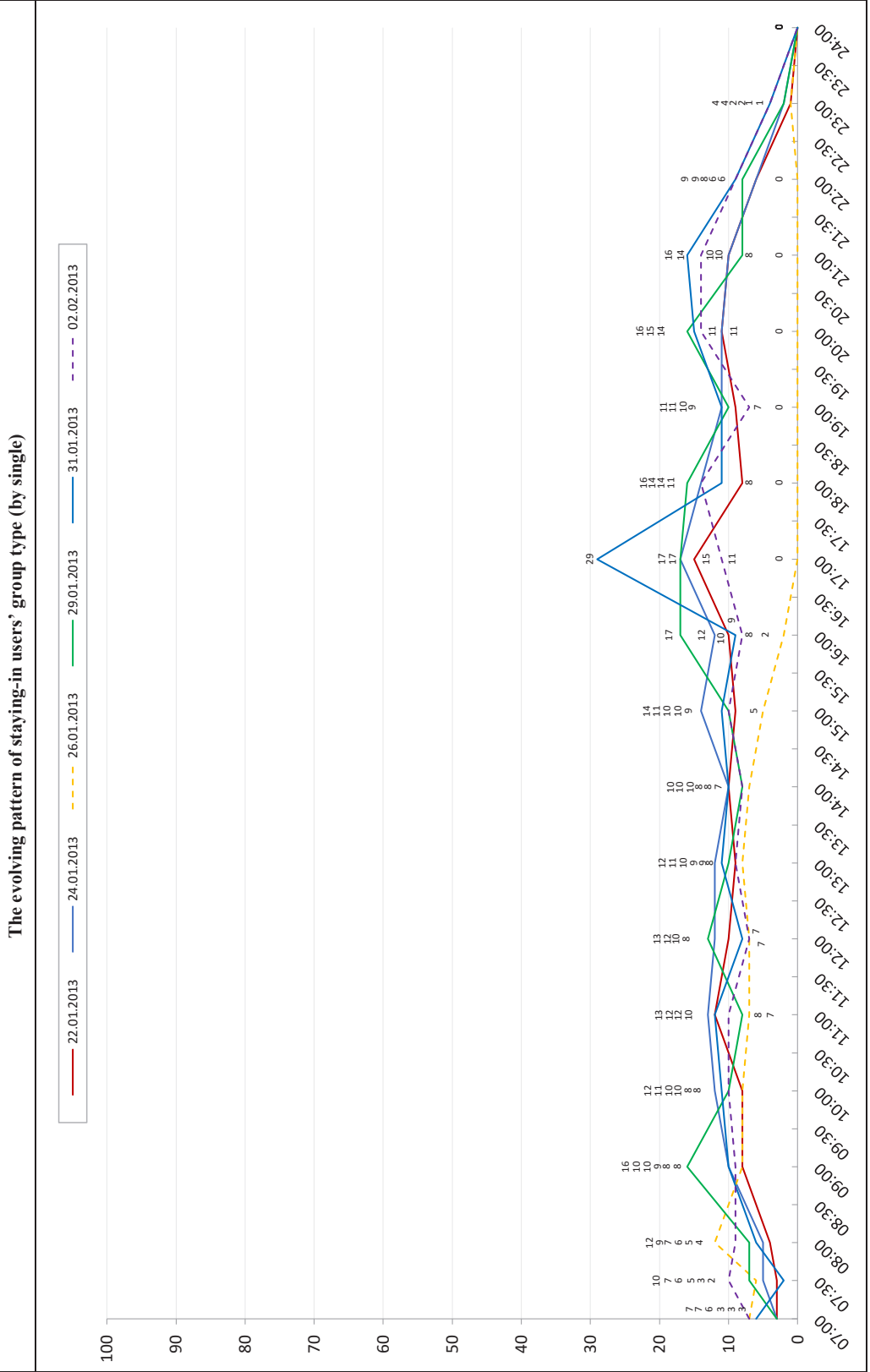


Figure 1.33 The evolving pattern of users' number by group type in staying-in category - by single (6 days in Lighting Square)

LIGHTING SQUARE

The evolving pattern of staying-in users' number by group type (by couple)

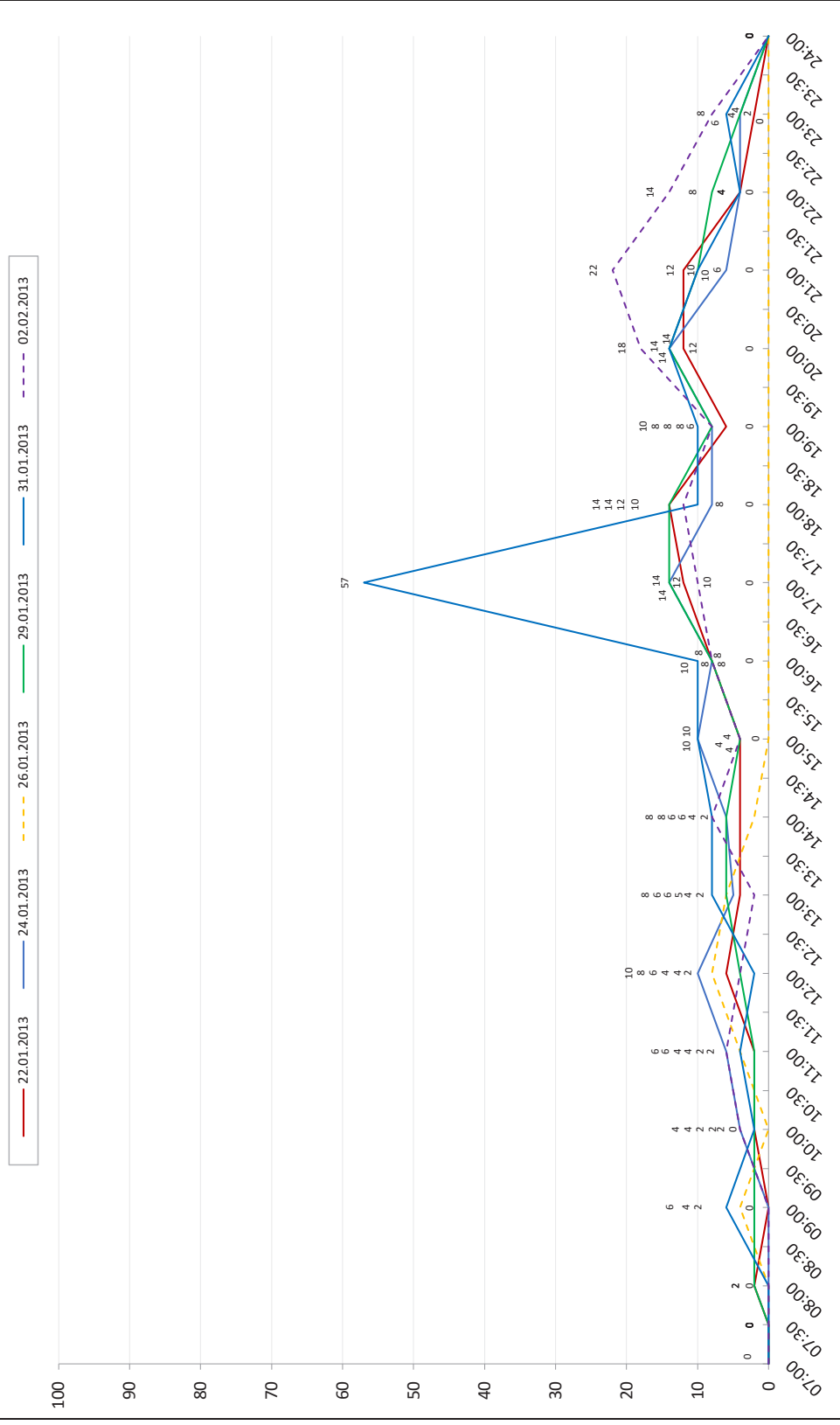


Figure 1.34 The evolving pattern of users' number by group type in staying-in category - by couple (6 days in Lighting Square)

LIGHTING SQUARE

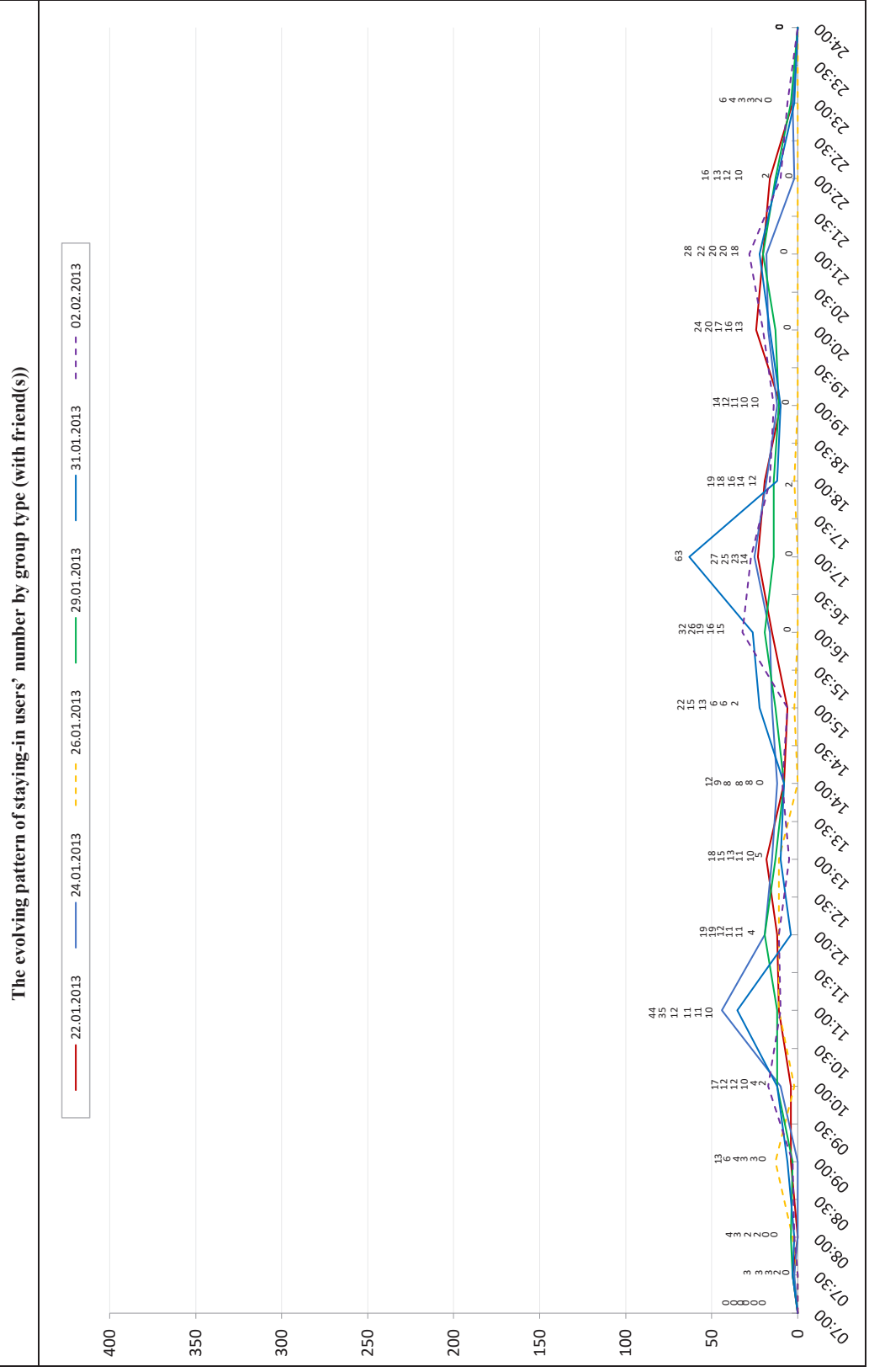


Figure 1.35 The evolving pattern of users' number by group type in staying-in category - with friend(s) (6 days in Lighting Square)

LIGHTING SQUARE

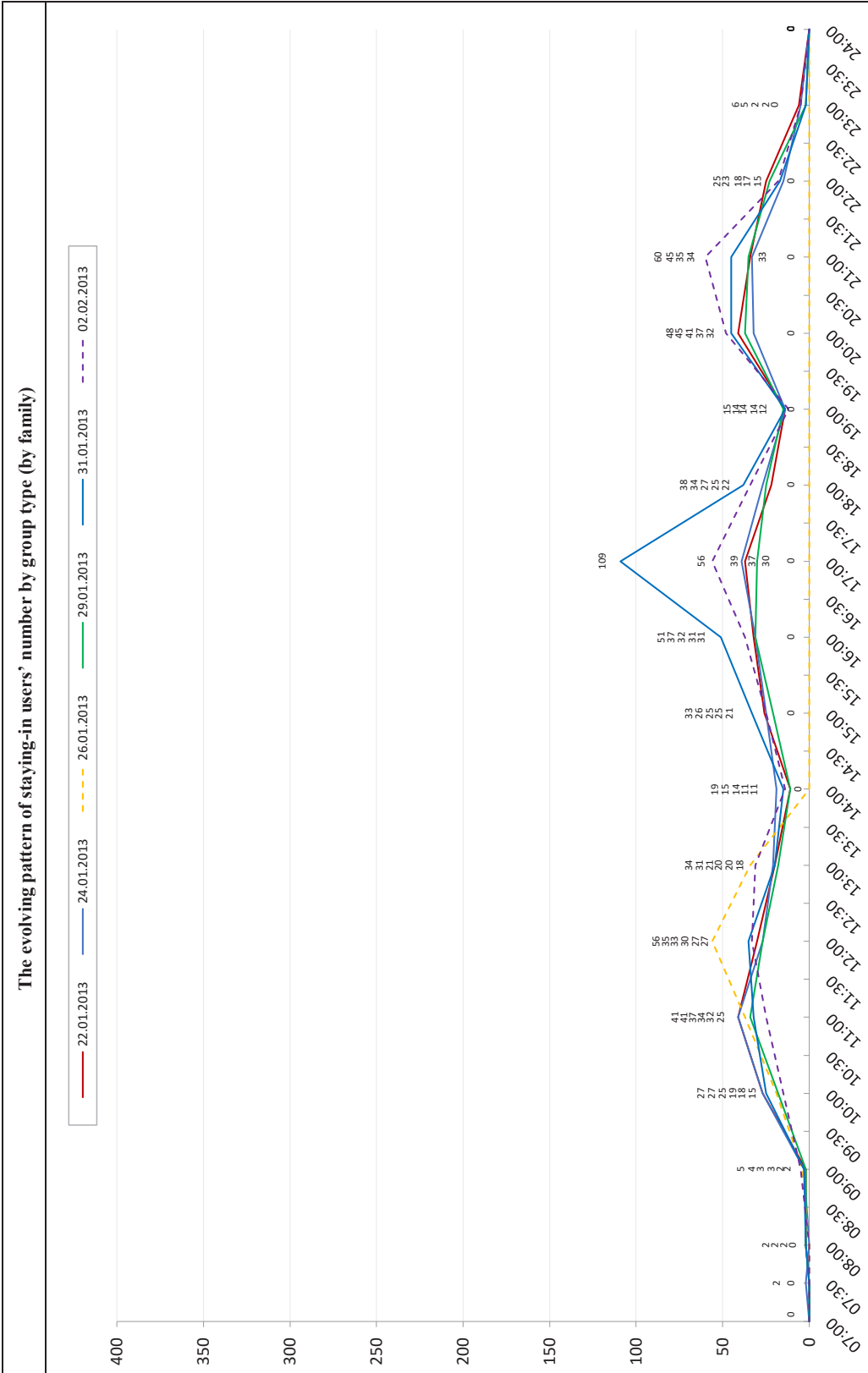


Figure 1.36 The evolving pattern of users' number by group type in staying-in category - with family (6 days in Lighting Square)

APPENDIX B
- BEHAVIOUR MAPS

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THE LIST OF BEHAVIOUR CODES AND SYMBOLS FOR BEHAVIOUR MAP

📷 Camera point

| CODE | BEHAVIOUR | Single Male | Single Female | Couple Male | Couple Female | Friends' Group Male | Friends' Group Female | Family Group Male | Family Group Female |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------|-------------|---------------|---------------------|-----------------------|-------------------|---------------------|
| A | Passing-through | | | | | | | | |
| a1 | Passing through on foot | | | | | | | | |
| a2 | Passing through by bicycle | | | | | | | | |
| a3 | Passing through by vehicle (square security) | | | | | | | | |
| B | Staying-in | | | | | | | | |
| b1 | Sitting and reading | | | | | | | | |
| b2 | Using/ playing with phone or personal business | | | | | | | | |
| b3 | Sitting and smoking in a daze | | | | | | | | |
| b4 | Sitting and watching (people, plants, water fountain, sculptures, temporary sculptures, temporary performance platform) | | | | | | | | |
| b5 | Sitting with a pram | | | | | | | | |
| b6 | Sitting and eating | | | | | | | | |
| b7 | Being intimate | | | | | | | | |
| b8 | Standing and watching (people, plants, water fountain, sculptures, temporary sculptures, temporary performance platform) | | | | | | | | |
| b9 | Standing with a pram | | | | | | | | |
| b10 | Strolling | | | | | | | | |
| b11 | Strolling with a pram | | | | | | | | |
| b12 | Strolling with a dog | | | | | | | | |
| b14 | Square patrolling | | | | | | | | |
| b15 | Square cleaning by sanitation worker | | | | | | | | |
| b16 | Rag-picker strolling | | | | | | | | |
| b17 | Running and playing, using open area | | | | | | | | |
| b18 | Playing around on bicycle | | | | | | | | |
| b19 | Rollerblading | | | | | | | | |
| b20 | Skateboarding | | | | | | | | |
| b21 | Playing BMX acrobatics | | | | | | | | |
| b22 | Playing with toy on the ground | | | | | | | | |
| b23 | Playing badminton | | | | | | | | |
| b24 | Taking group photos | | | | | | | | |
| b25 | Playing with a ball | | | | | | | | |
| b26 | Street dancing (in group) | | | | | | | | |
| b27 | Exercising | | | | | | | | |
| b28 | Square dancing (in group) | | | | | | | | |
| b29 | Doing spontaneous business | | | | | | | | |
| b30 | Square facility maintenance (temporary sculptures, water fountain, temporary lighting sculptures, temporary performance platform, plantings) | | | | | | | | |
| b31 | Health consulting | | | | | | | | |
| b32 | Inspecting and studying (in tour) | | | | | | | | |
| b33 | Outdoor sketching | | | | | | | | |
| b34 | Standing and chatting | | | | | | | | |
| b35 | Rehearsing collective activity | | | | | | | | |
| b36 | Sitting and chatting | | | | | | | | |
| b37 | Doing questionnaire survey | | | | | | | | |
| b38 | Taking personal photos | | | | | | | | |
| b39 | Sitting/ lying down and sleeping | | | | | | | | |
| b40 | Handing out free newspapers | | | | | | | | |

The list of behaviour codes and symbols for behaviour map

**BEHAVIOUR MAPS
- HERO SQUARE**

BEHAVIOUR MAP

Place: Hero Square

Passing-through

Date: 08.01.2013

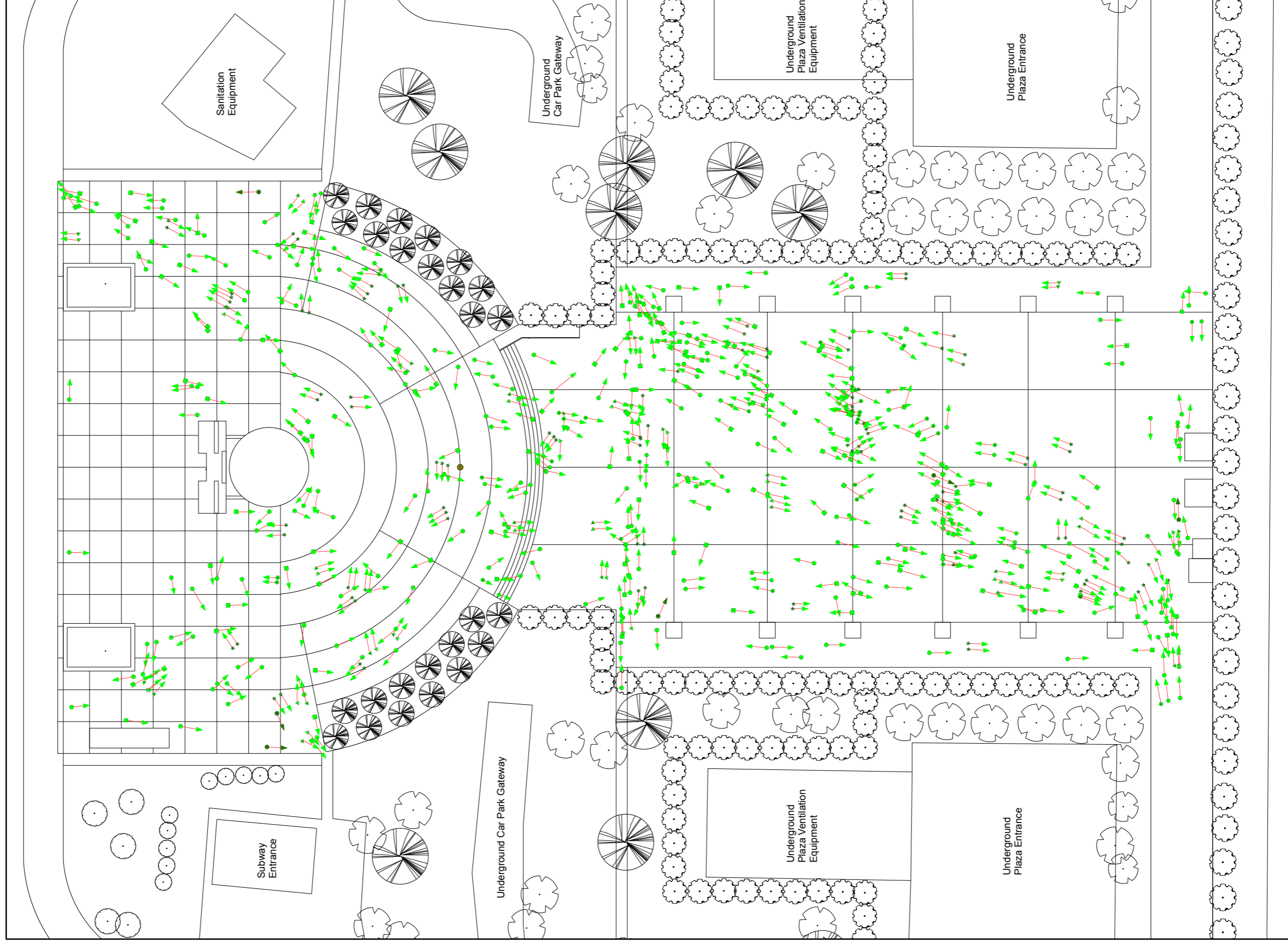


Figure 2.1 The behaviour map of passing-through behaviours which occurred in Hero Square - 08.01.2013

NORTH ARROW



1:500

BEHAVIOUR MAP

Place: Hero Square

Staying-in

Date: 08.01.2013

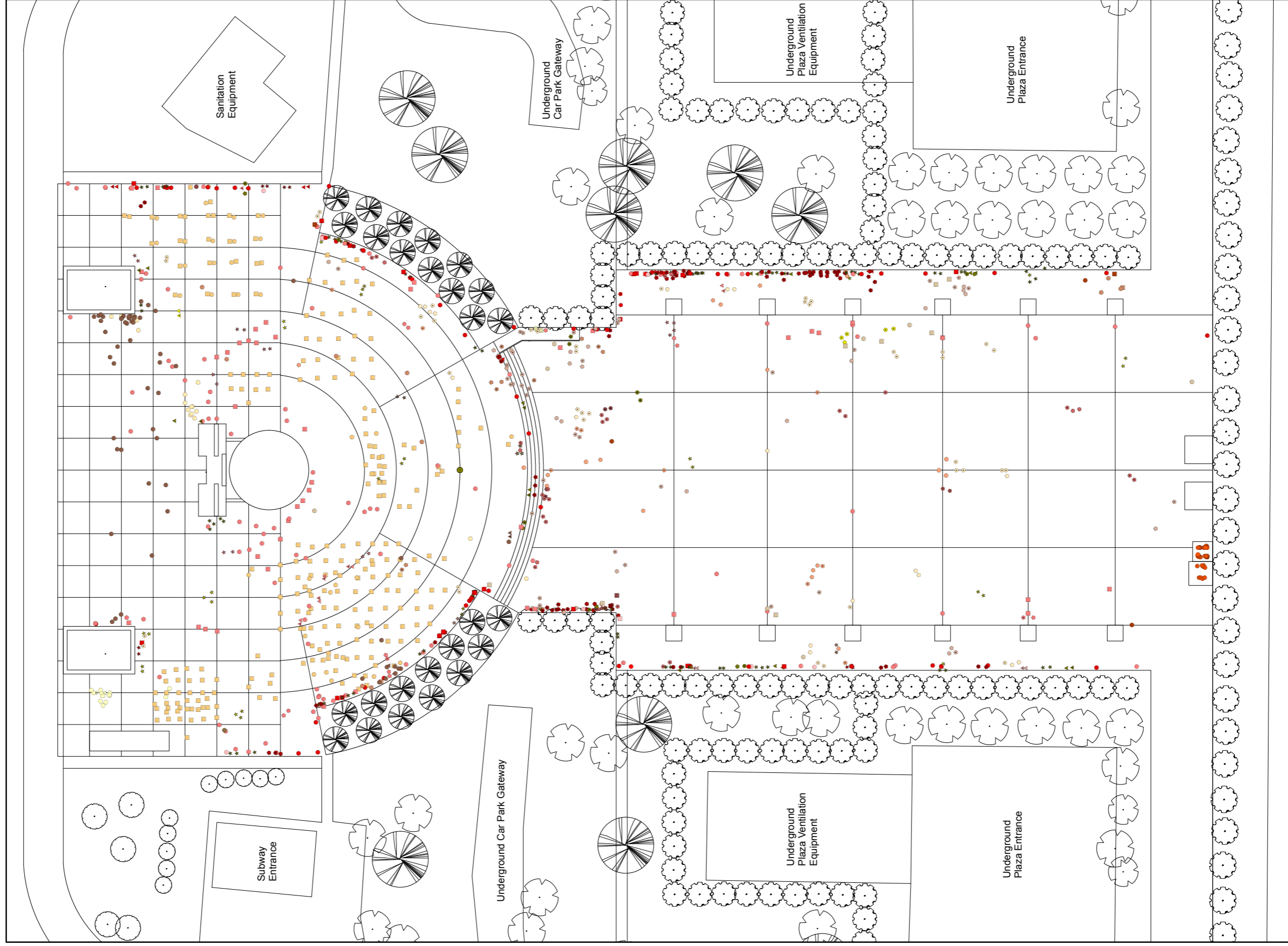


Figure 2.2 The behaviour map of staying-in behaviours which occurred in Hero Square - 08.01.2013

NORTH ARROW



1:500

BEHAVIOUR MAP

Place: Hero Square

Passing-through

Date: 10.01.2013

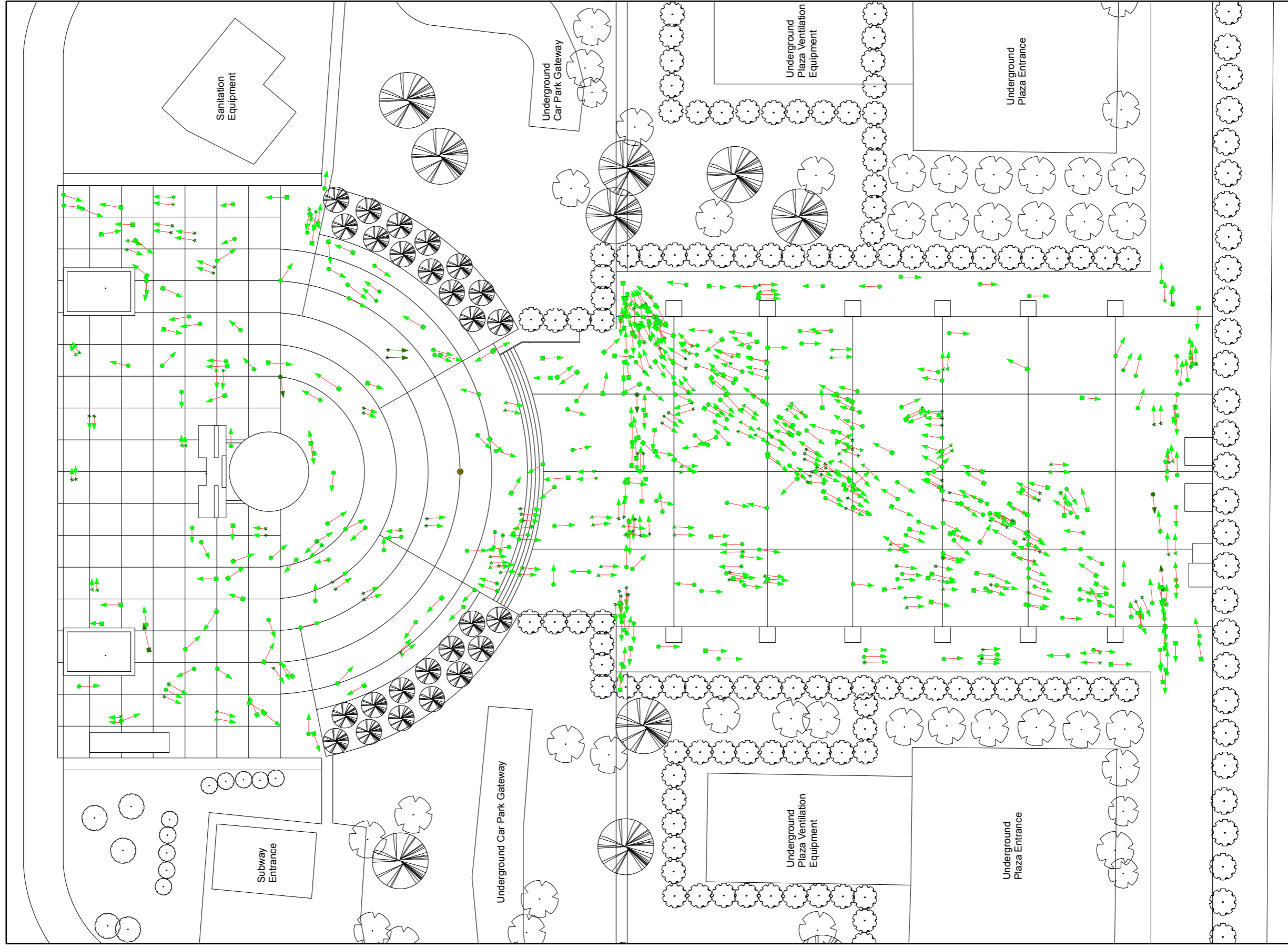


Figure 2.3 The behaviour map of passing-through behaviours which occurred in Hero Square - 10.01.2013

NORTH ARROW



1:500

BEHAVIOUR MAP

Place: Hero Square

Staying-in

Date: 10.01.2013

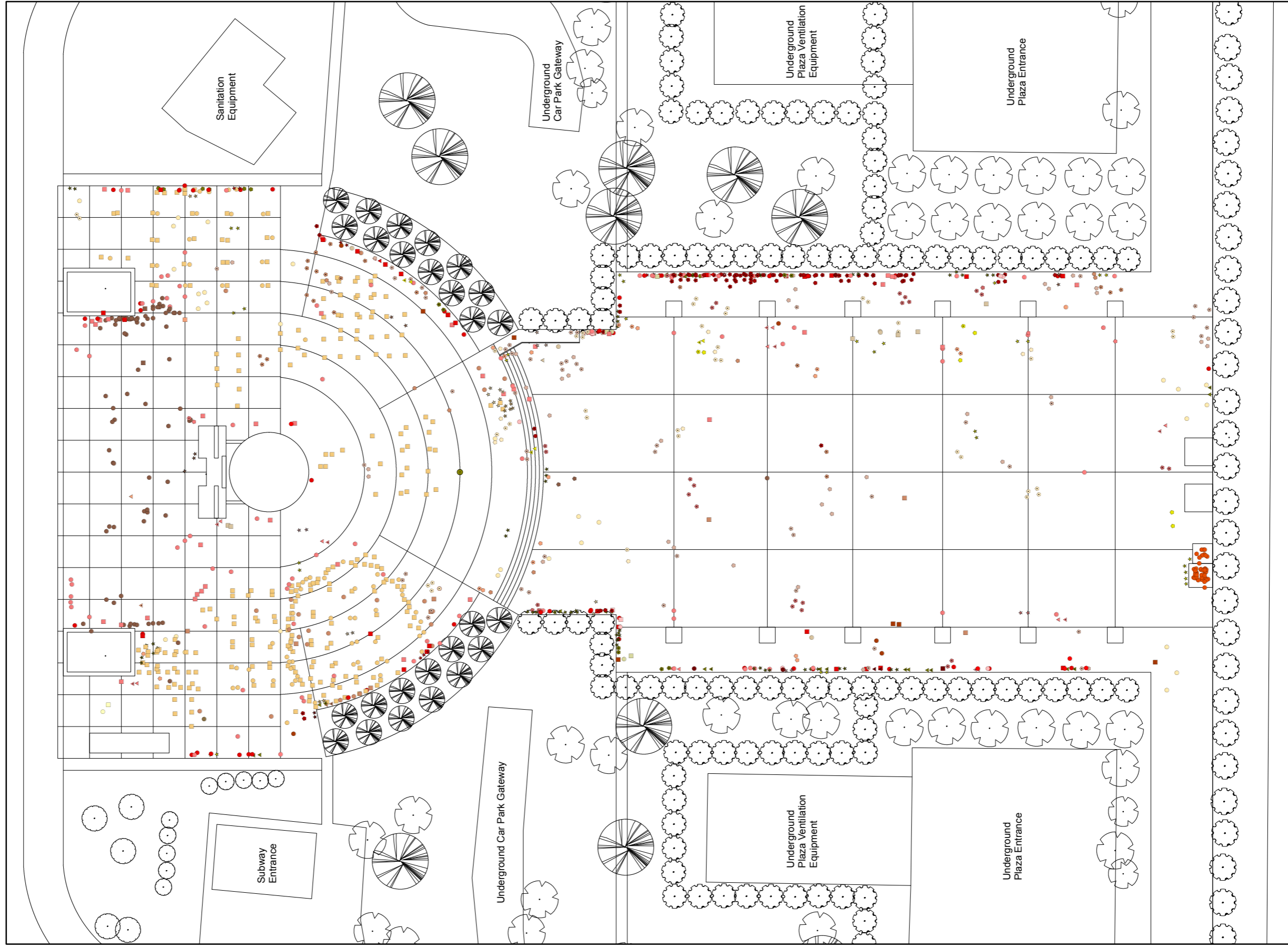


Figure 2.4 The behaviour map of staying-in behaviours which occurred in Hero Square - 10.01.2013

NORTH ARROW



1:500

BEHAVIOUR MAP

Place: Hero Square

Passing-through

Date: 12.01.2013

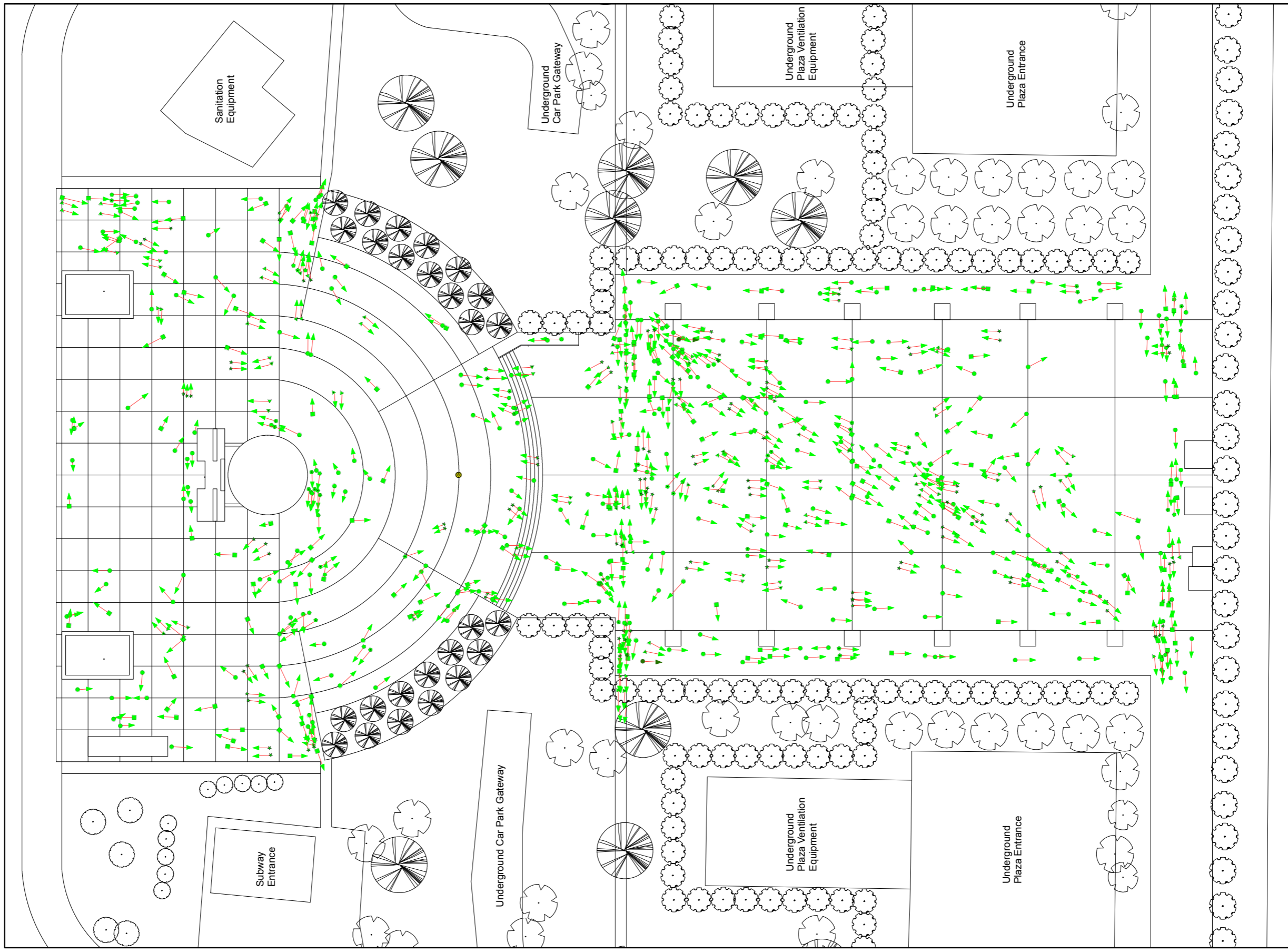


Figure 2.5 The behaviour map of passing-through behaviours which occurred in Hero Square - 12.01.2013

NORTH ARROW



1:500

BEHAVIOUR MAP

Place: Hero Square

Staying-in

Date: 12.01.2013

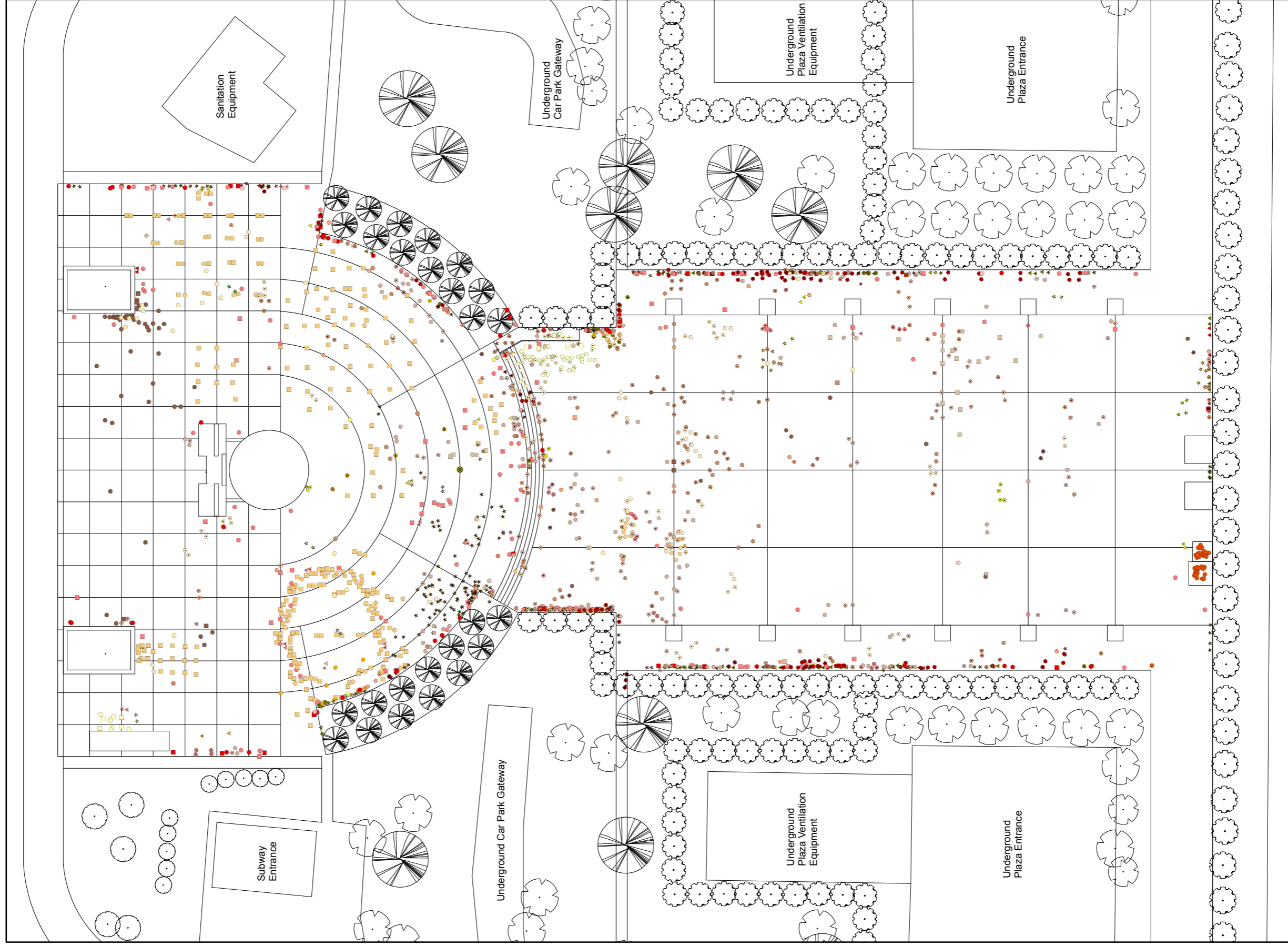


Figure 2.6 The behaviour map of staying-in behaviours which occurred in Hero Square - 12.01.2013

NORTH ARROW



1:500

BEHAVIOUR MAP

Place: Hero Square

Passing-through

Date: 15.01.2013

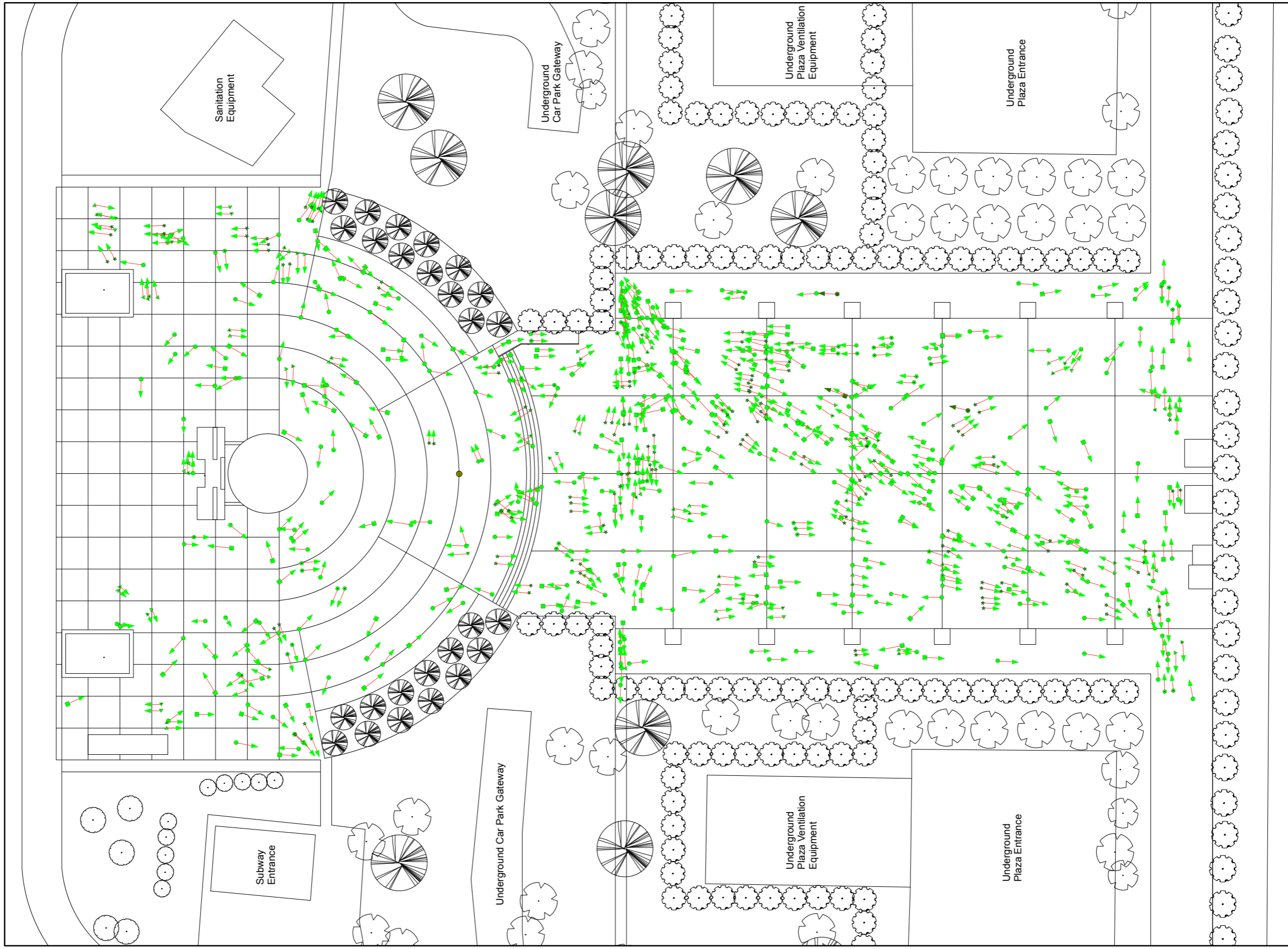


Figure 2.7 The behaviour map of passing-through behaviours which occurred in Hero Square - 15.01.2013

NORTH ARROW



1:500

BEHAVIOUR MAP

Place: Hero Square

Staying-in

Date: 15.01.2013

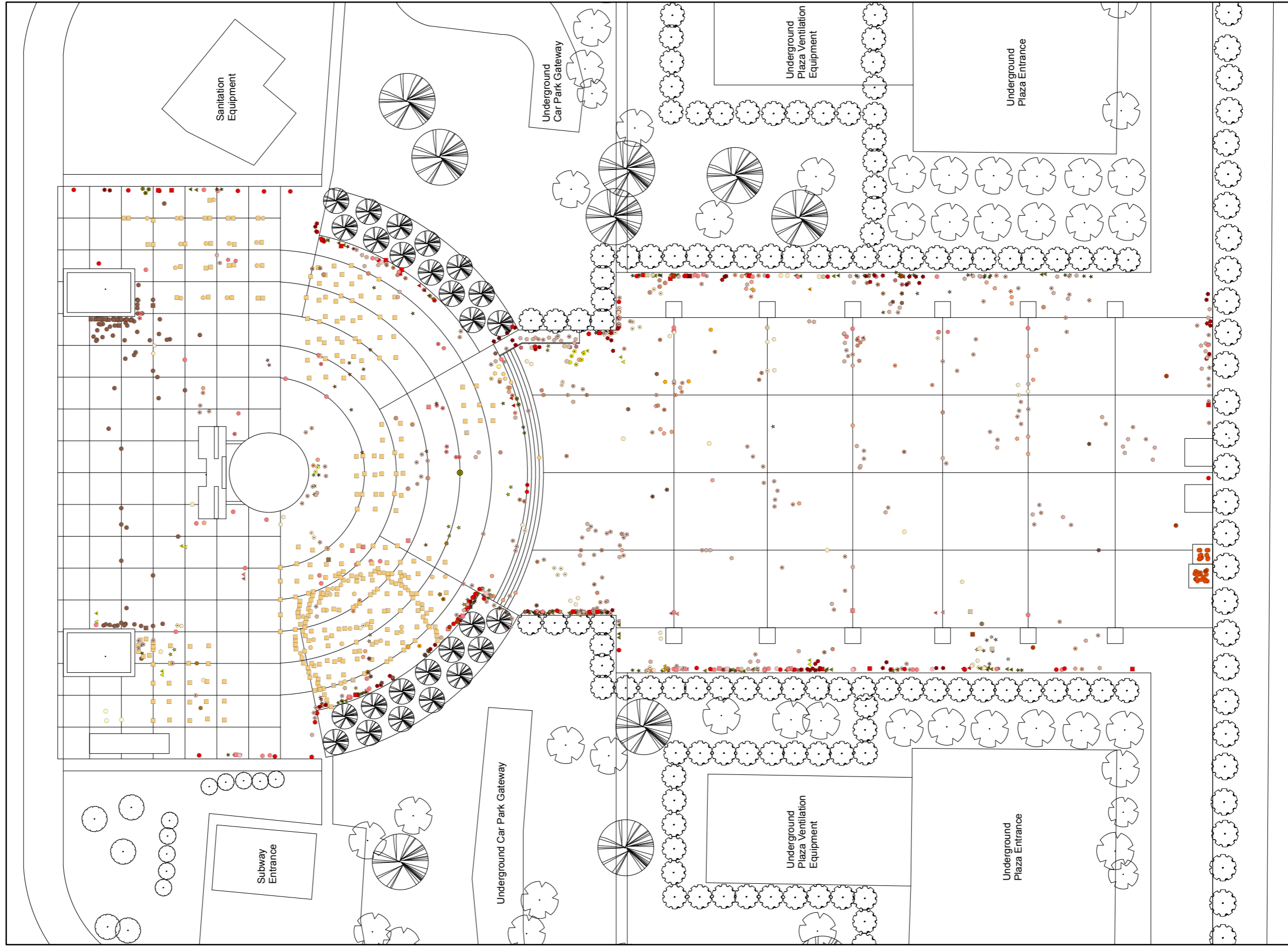


Figure 2.8 The behaviour map of staying-in behaviours which occurred in Hero Square - 15.01.2013

NORTH ARROW



1:500

BEHAVIOUR MAP

Place: Hero Square

Passing-through

Date: 17.01.2013

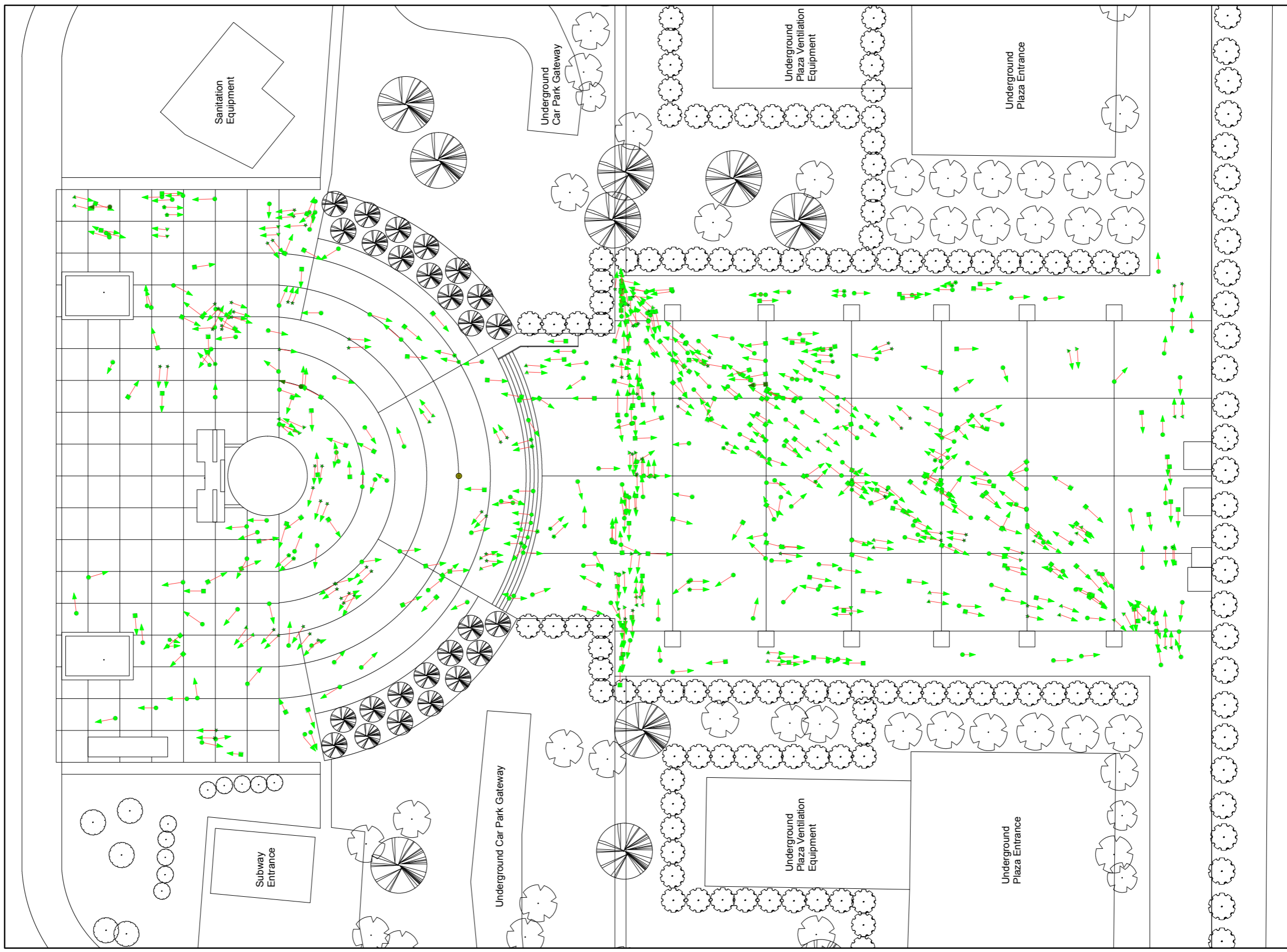


Figure 2.9 The behaviour map of passing-through behaviours which occurred in Hero Square - 17.01.2013

NORTH ARROW



1:500

BEHAVIOUR MAP

Place: Hero Square

Staying-in

Date: 17.01.2013

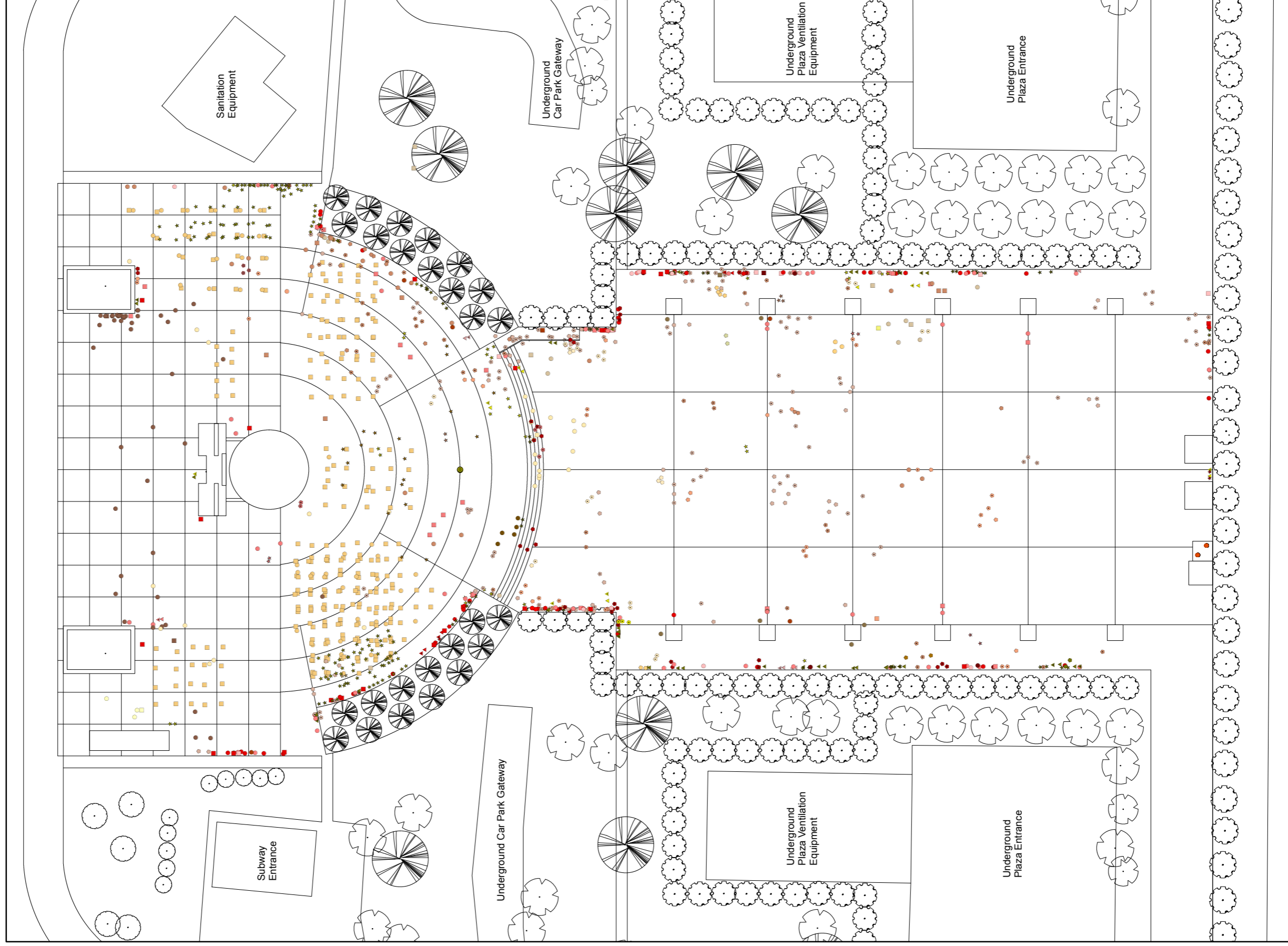


Figure 2.10 The behaviour map of staying-in behaviours which occurred in Hero Square - 17.01.2013



BEHAVIOUR MAP

Place: Hero Square

Passing-through

Date: 19.01.2013

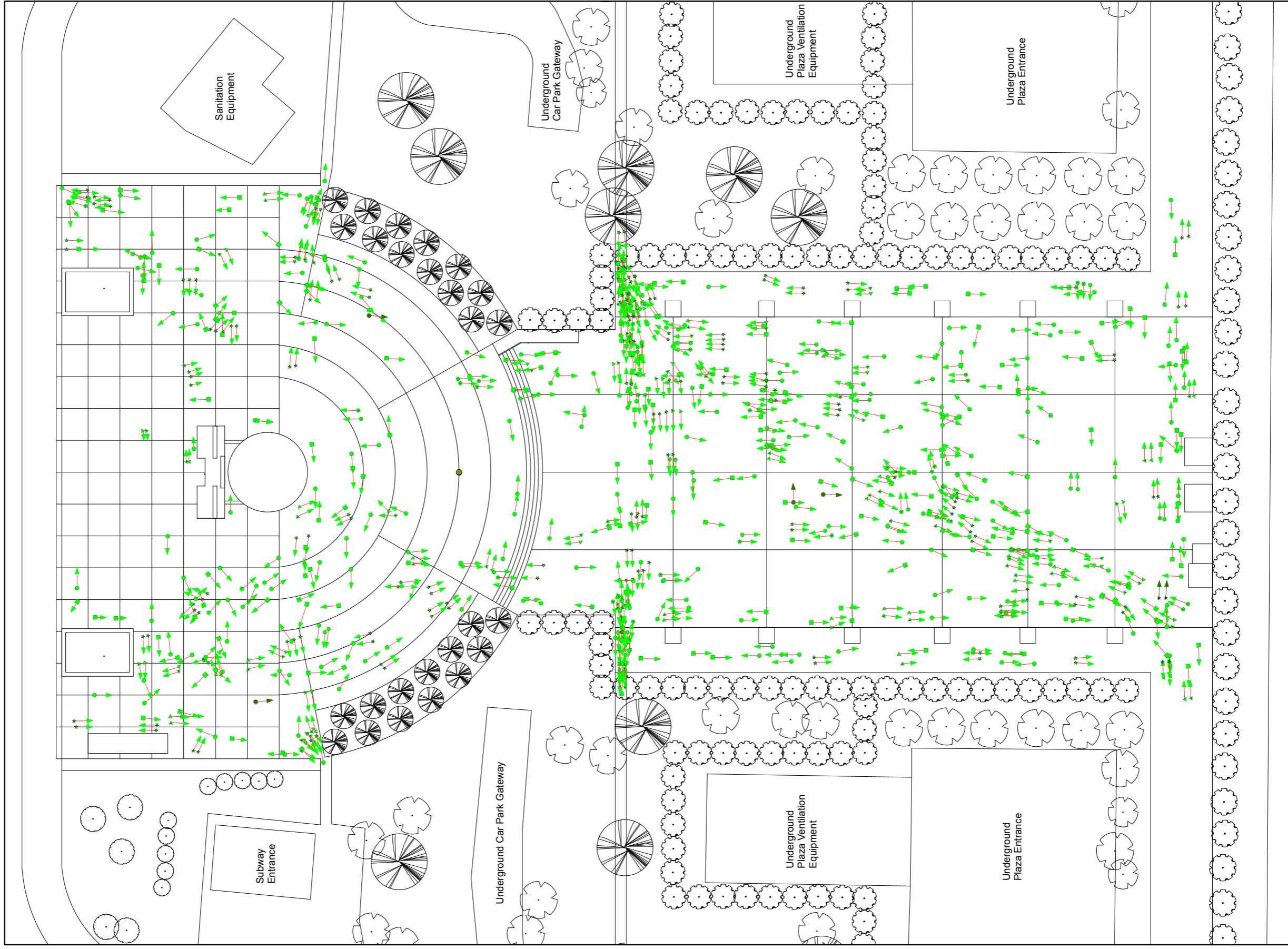


Figure 2.11 The behaviour map of passing-through behaviours which occurred in Hero Square - 19.01.2013

NORTH ARROW



1:500

BEHAVIOUR MAP

Place: Hero Square

Staying-in

Date: 19.01.2013

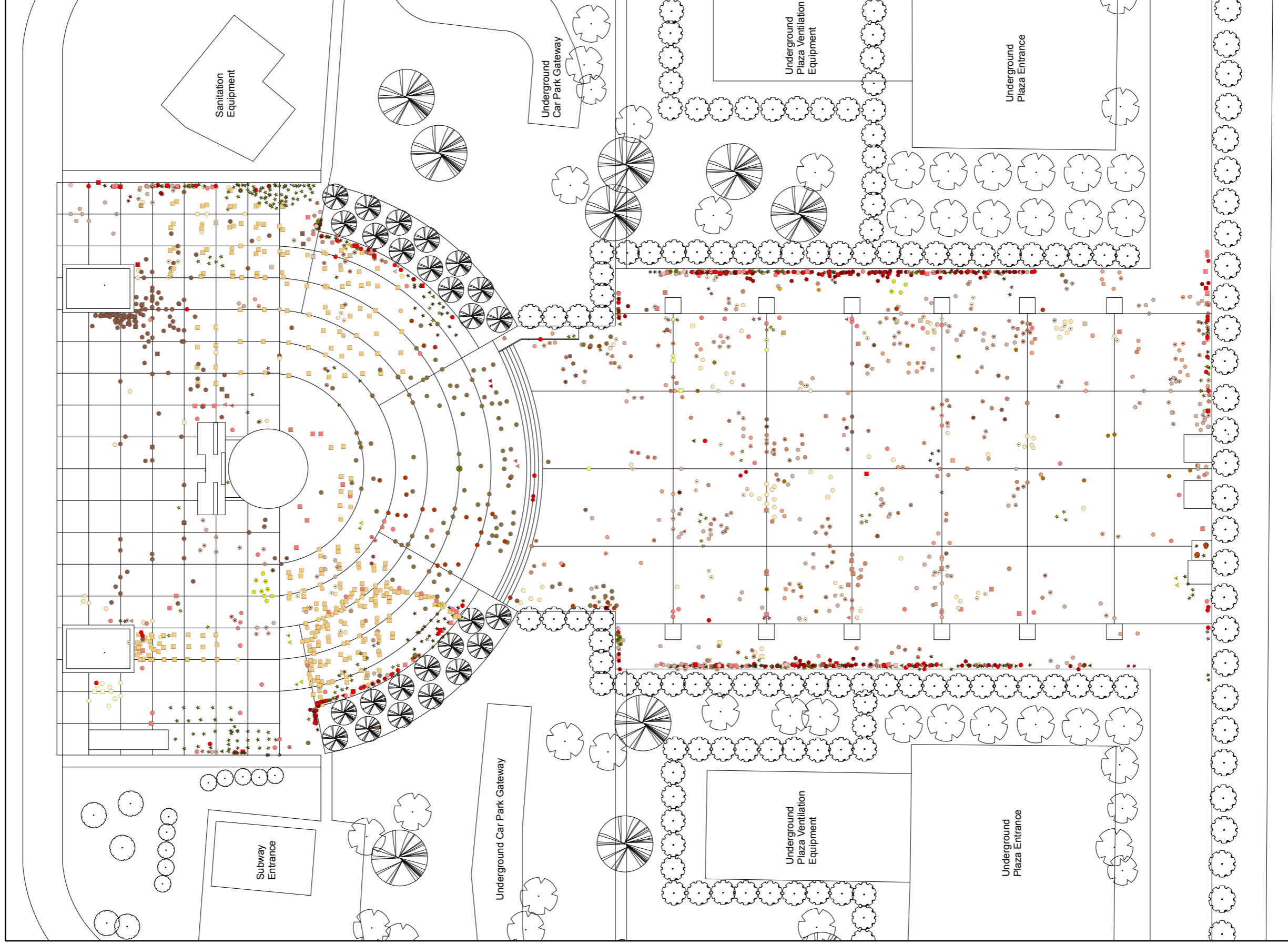


Figure 2.12 The behaviour map of staying-in behaviours which occurred in Hero Square - 19.01.2013

NORTH ARROW



1:500

PASSING-THROUGH FLOW MAP

Place: Hero Square

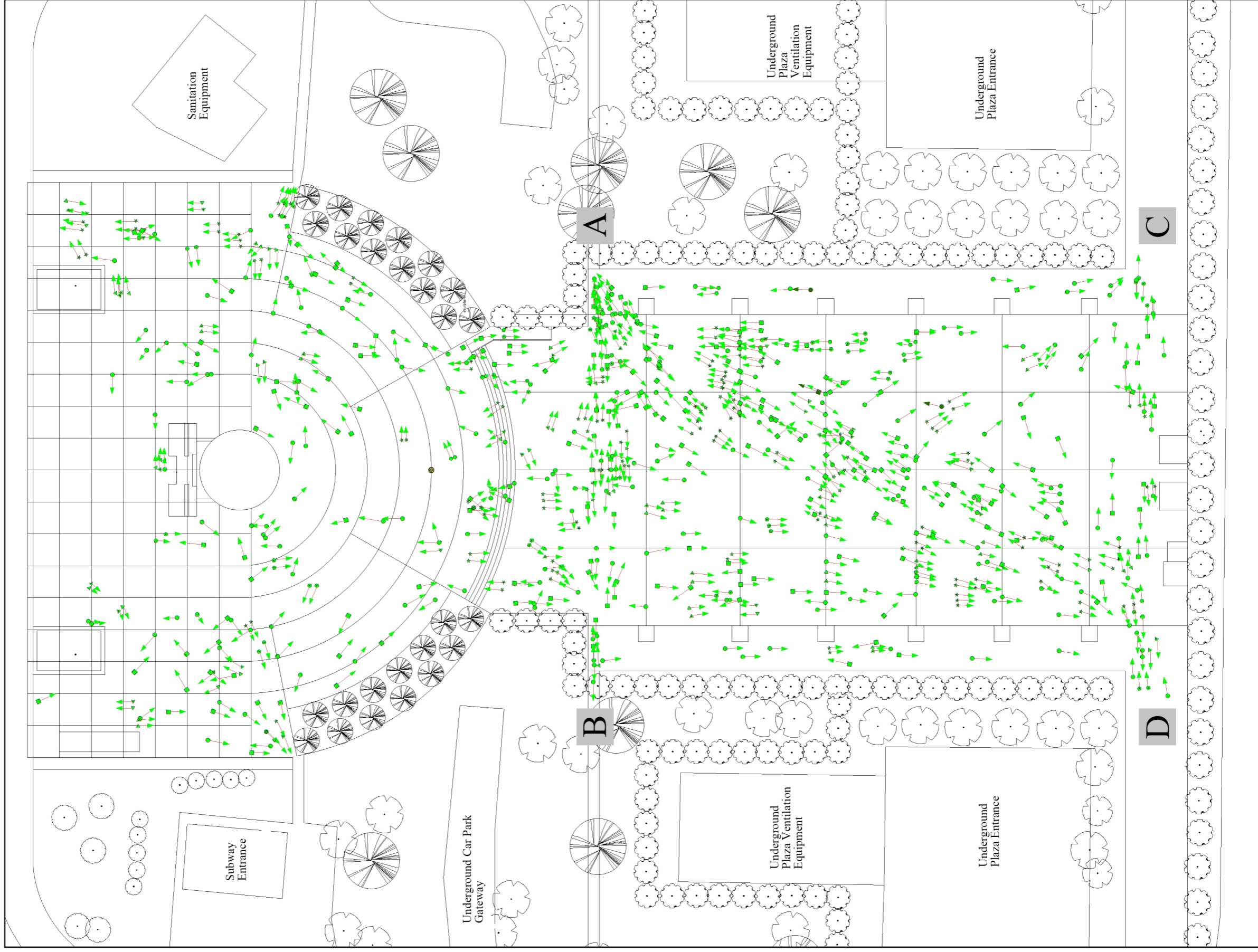


Figure 2.13 Schematic diagram 1 - Hero Square



STAYING-IN ZONE MAP

Place: Hero Square

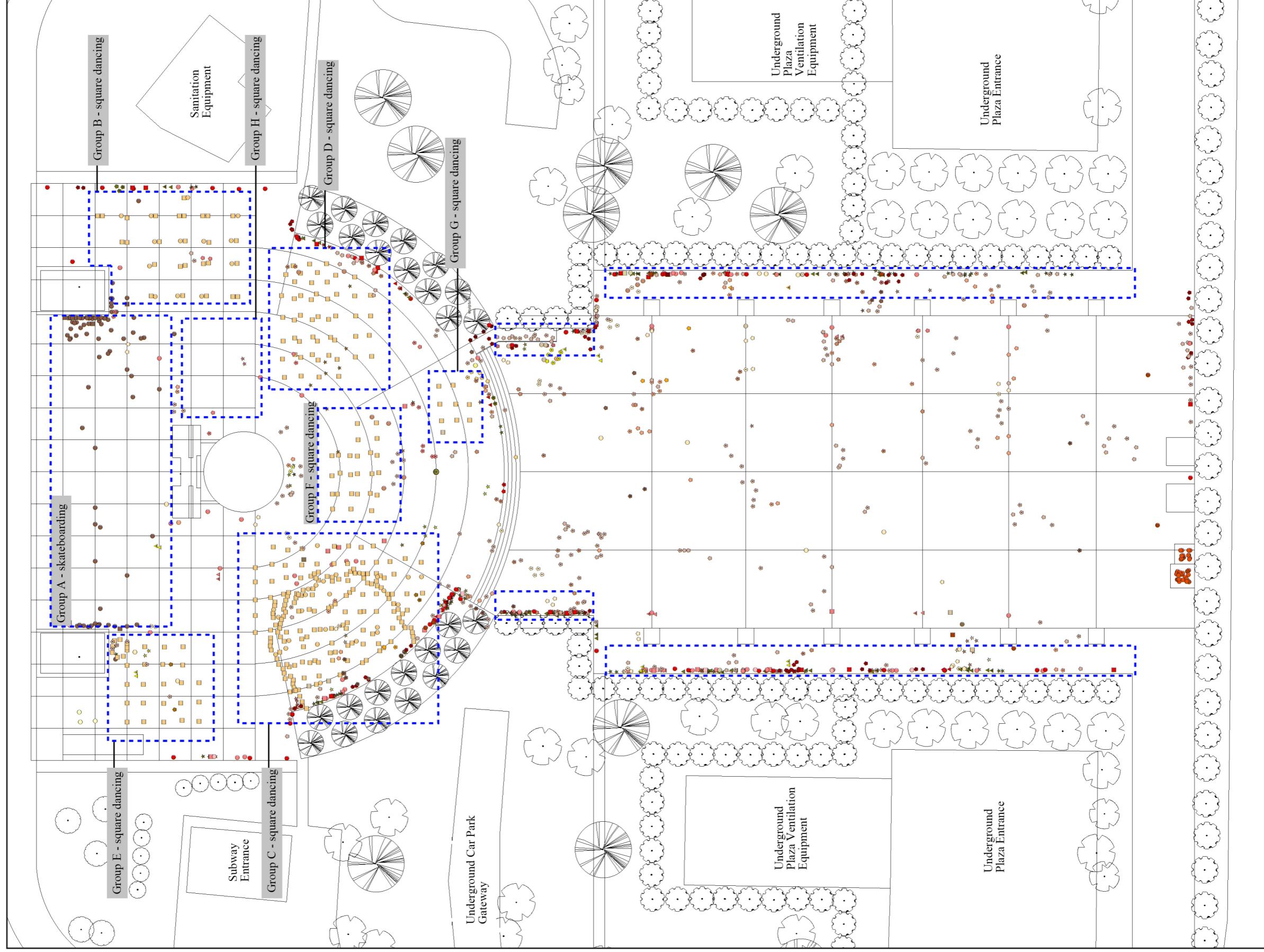


Figure 2.14 Schematic diagram 2 - Hero Square

NORTH ARROW



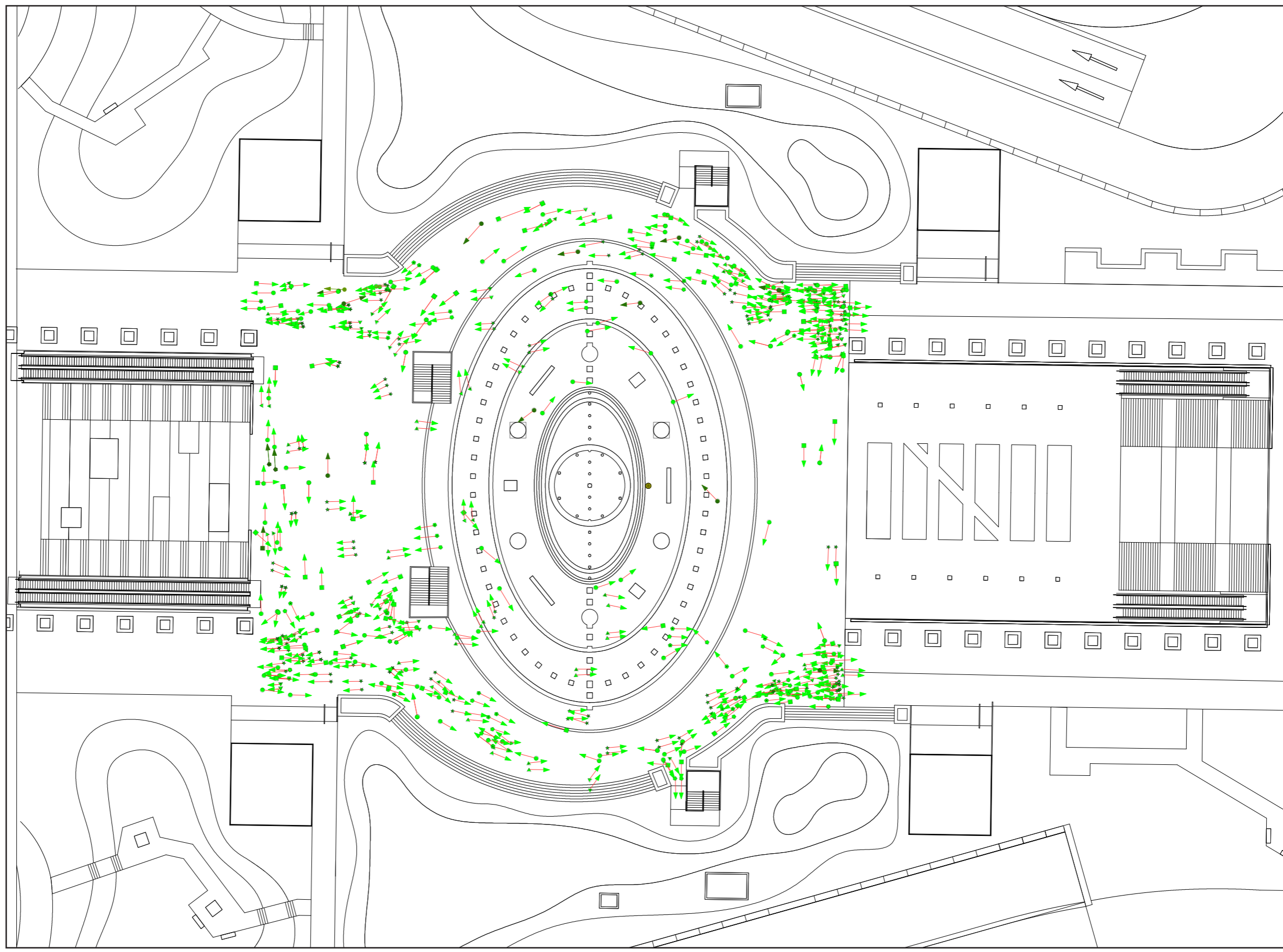
BEHAVIOUR MAPS
- WATER FOUNTAIN SQUARE

BEHAVIOUR MAP

Place: Flower City Square - Water Fountain Square

Passing-through

Date: 22.01.2013



NORTH ARROW



1:500

Figure 2.15 The behaviour map of passing-through behaviours which occurred in Water Fountain Square - 22.01.2013

BEHAVIOUR MAP

Place: Flower City Square - Water Fountain Square

Staying-in

Date: 22.01.2013

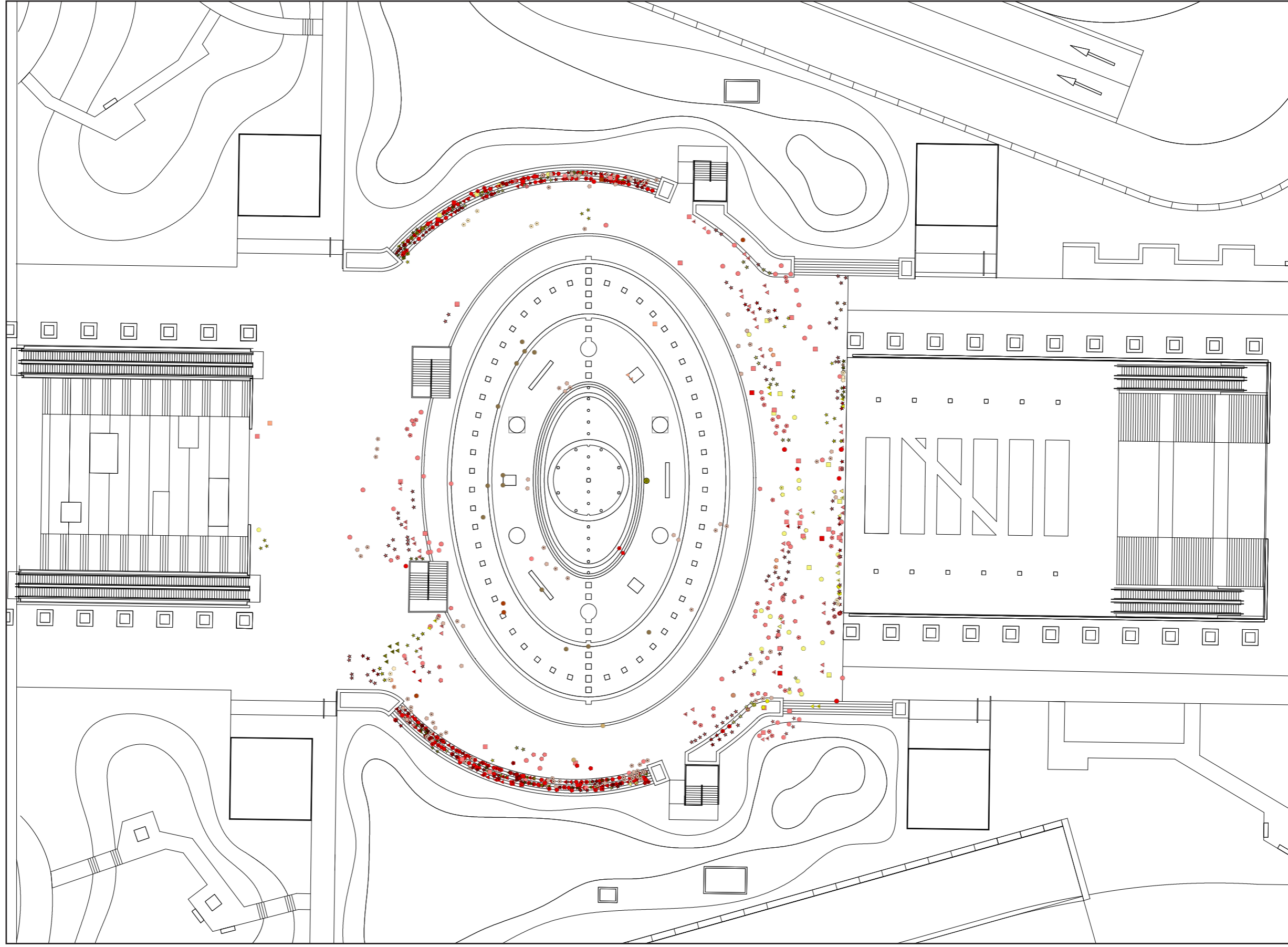


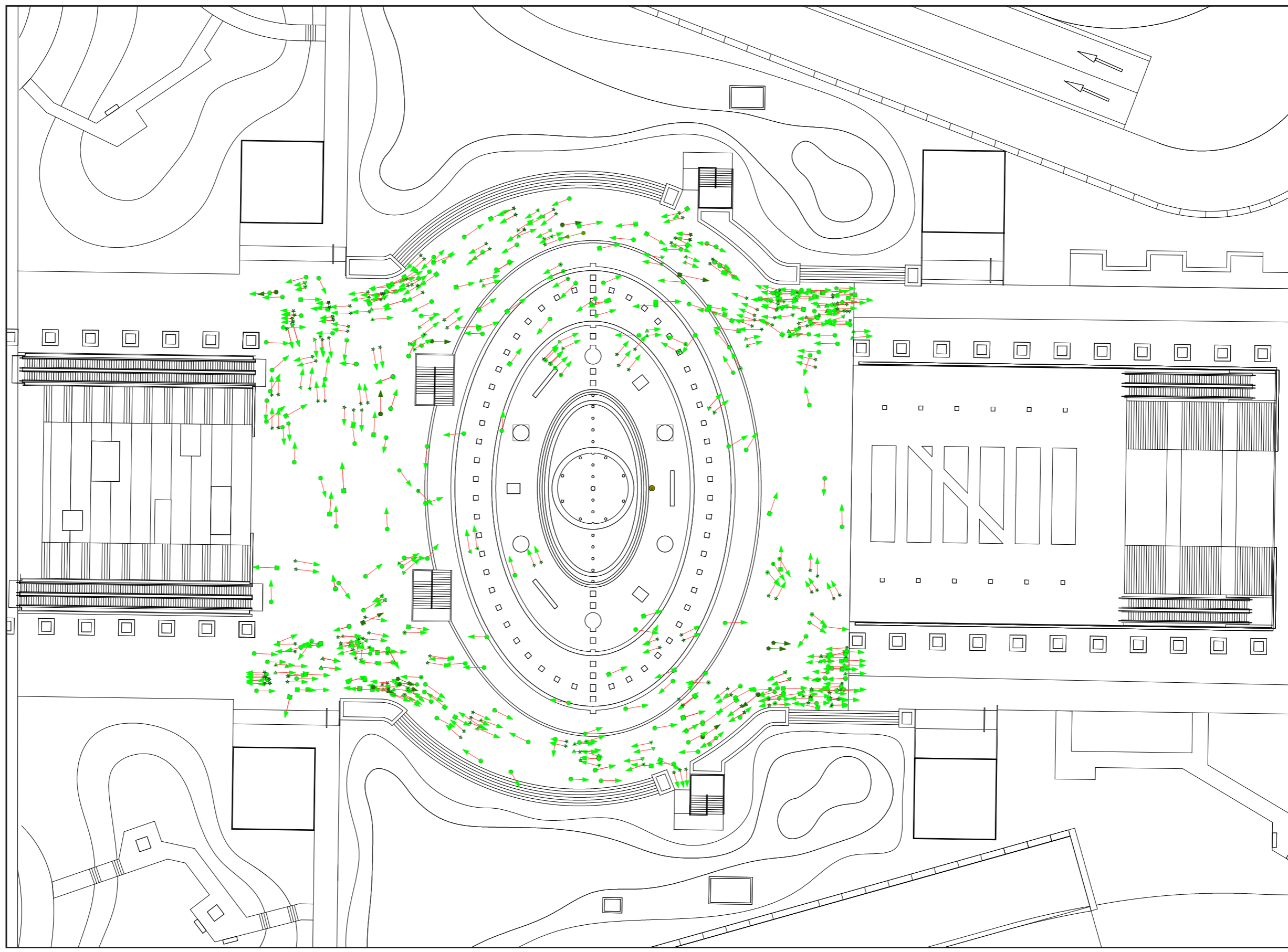
Figure 2.16 The behaviour map of staying-in behaviours which occurred in Water Fountain Square - 22.01.2013

BEHAVIOUR MAP

Place: Flower City Square - Water Fountain Square

Passing-through

Date: 24.01.2013



NORTH ARROW



1:500

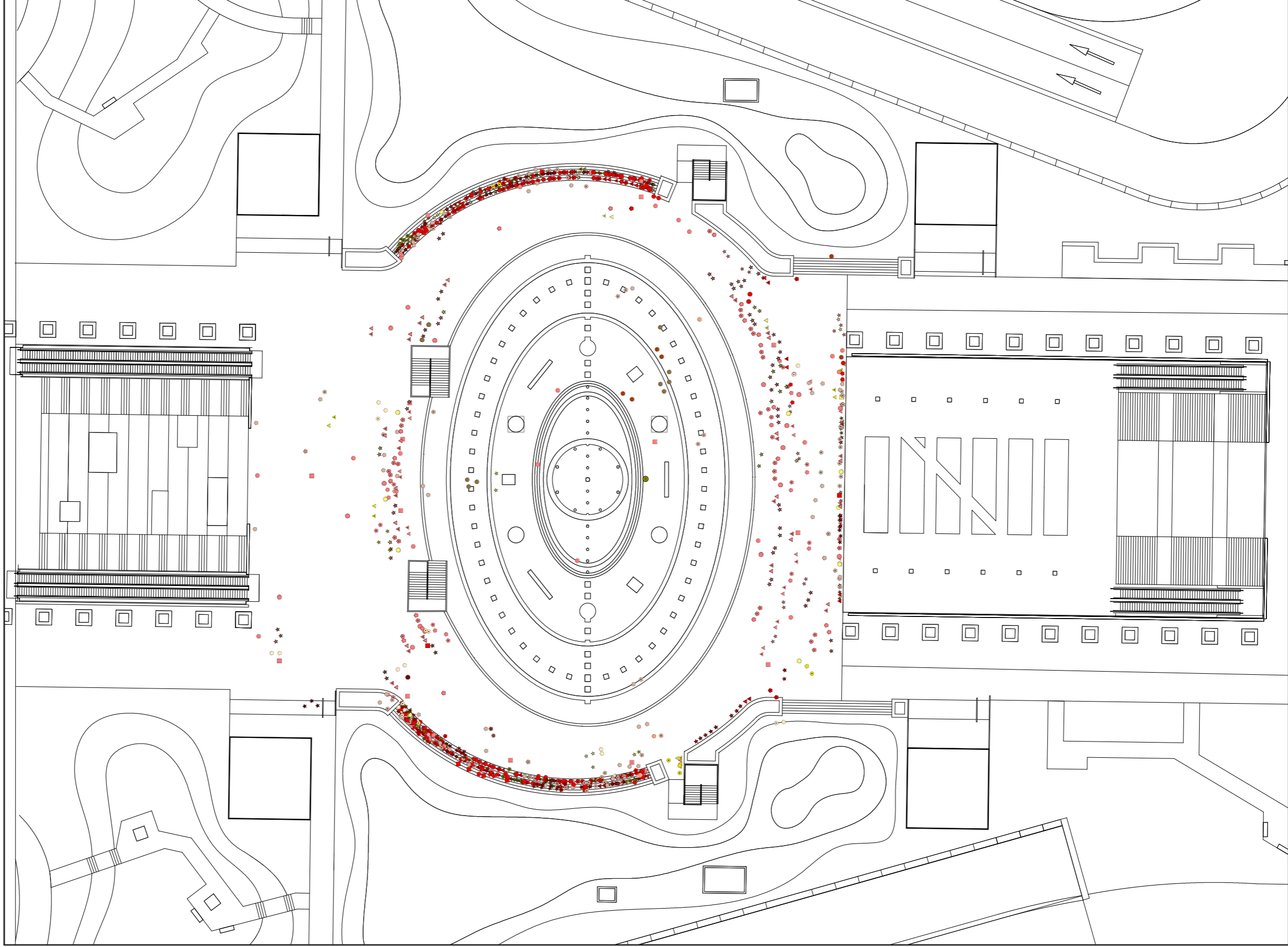
Figure 2.17 The behaviour map of passing-through behaviours which occurred in Water Fountain Square - 24.01.2013

BEHAVIOUR MAP

Date: 24.01.2013

Staying-in

Place: Flower City Square - Water Fountain Square



NORTH ARROW



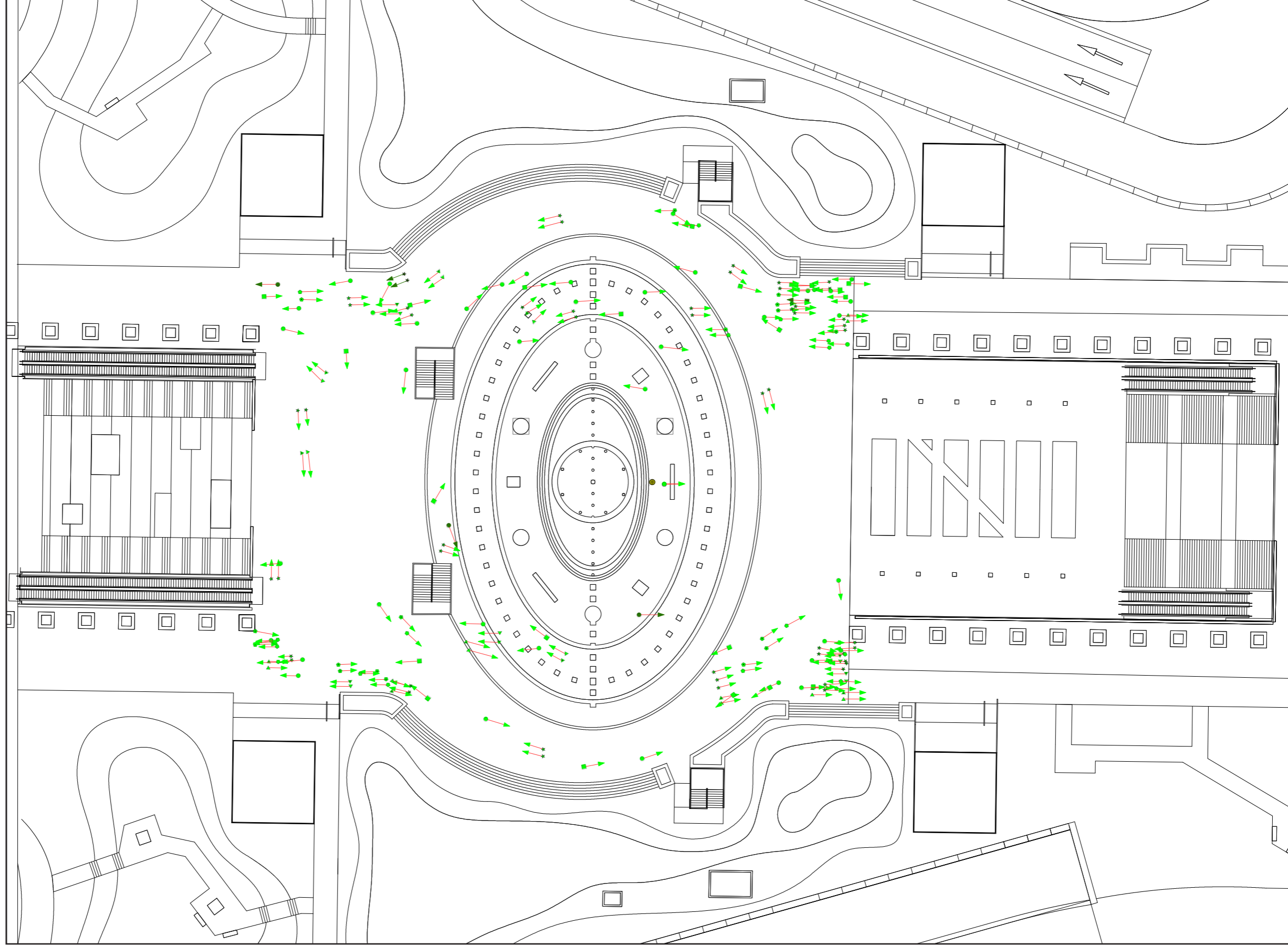
Figure 2.18 The behaviour map of staying-in behaviours which occurred in Water Fountain Square - 24.01.2013

BEHAVIOUR MAP

Date: 26.01.2013

Passing-through

Place: Flower City Square - Water Fountain Square



NORTH ARROW



1:500

Figure 2.19 The behaviour map of passing-through behaviours which occurred in Water Fountain Square - 26.01.2013

BEHAVIOUR MAP

Place: Flower City Square - Water Fountain Square

Staying-in

Date: 26.01.2013

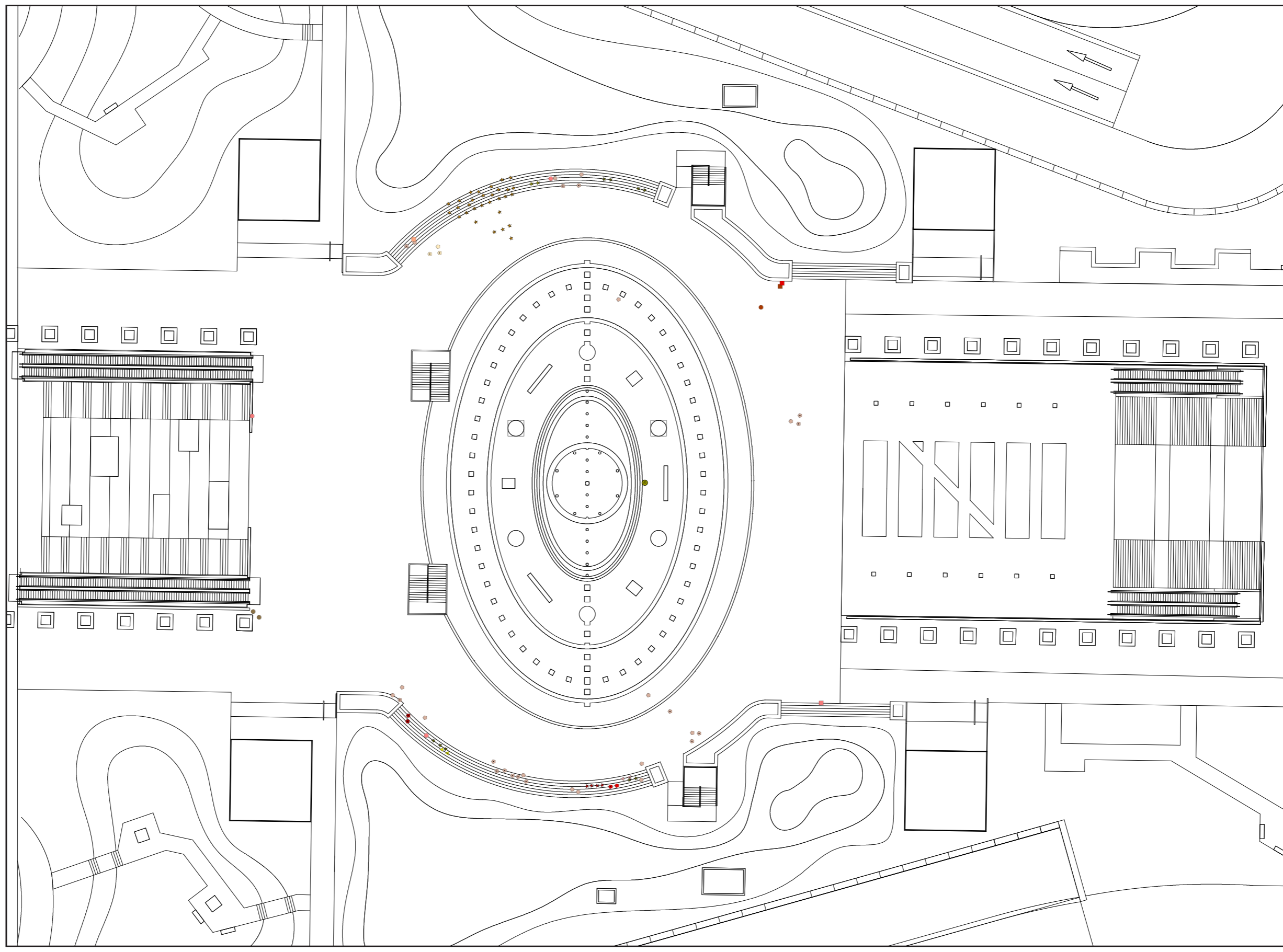


Figure 2.20 The behaviour map of staying-in behaviours which occurred in Water Fountain Square - 26.01.2013

BEHAVIOUR MAP

Place: Flower City Square - Water Fountain Square

Passing-through

Date: 29.01.2013

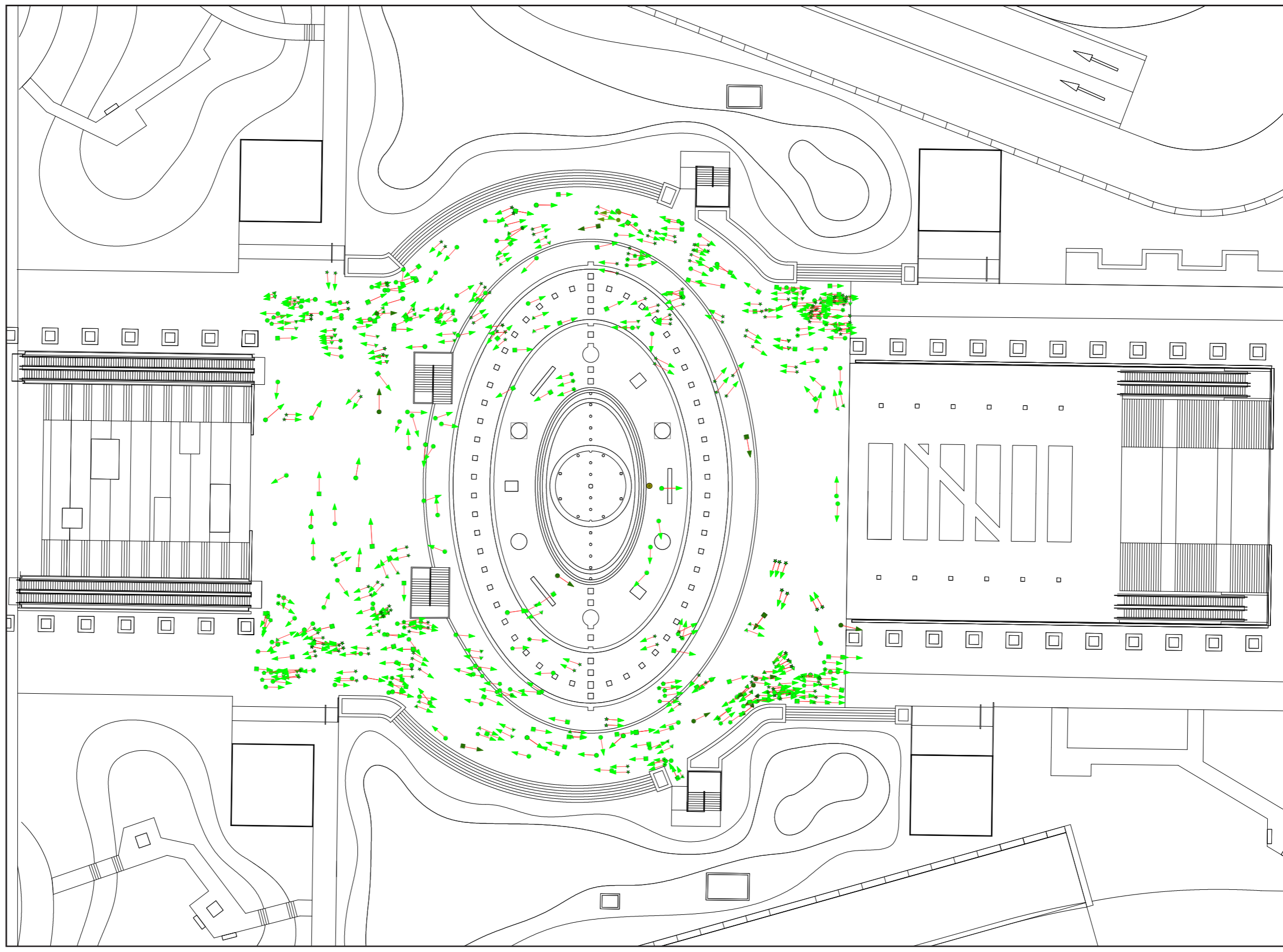


Figure 2.21 The behaviour map of passing-through behaviours which occurred in Water Fountain Square - 29.01.2013

NORTH ARROW



1:500

BEHAVIOUR MAP

Place: Flower City Square - Water Fountain Square

Staying-in

Date: 29.01.2013

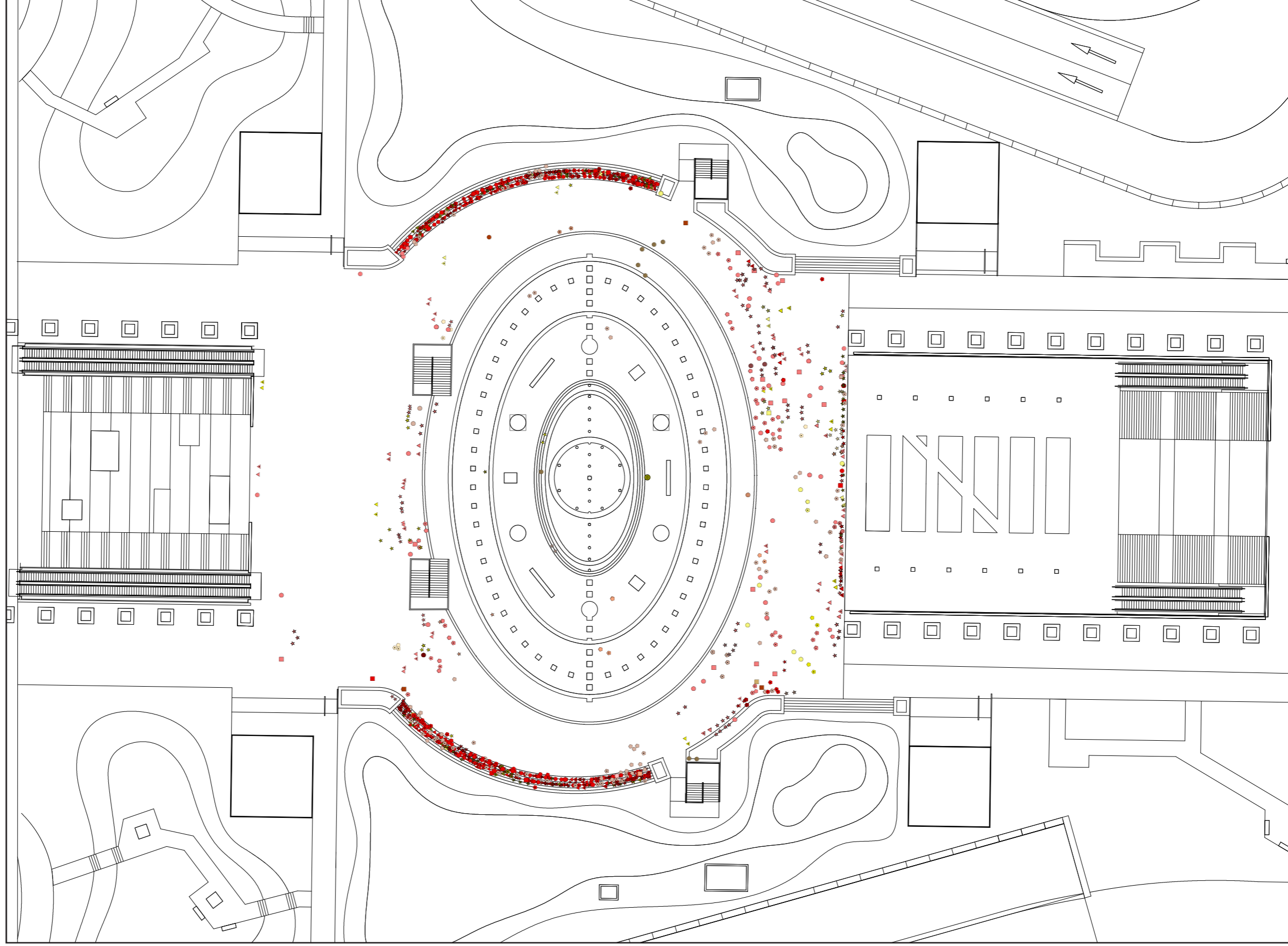


Figure 2.22 The behaviour map of staying-in behaviours which occurred in Water Fountain Square - 29.01.2013

NORTH ARROW



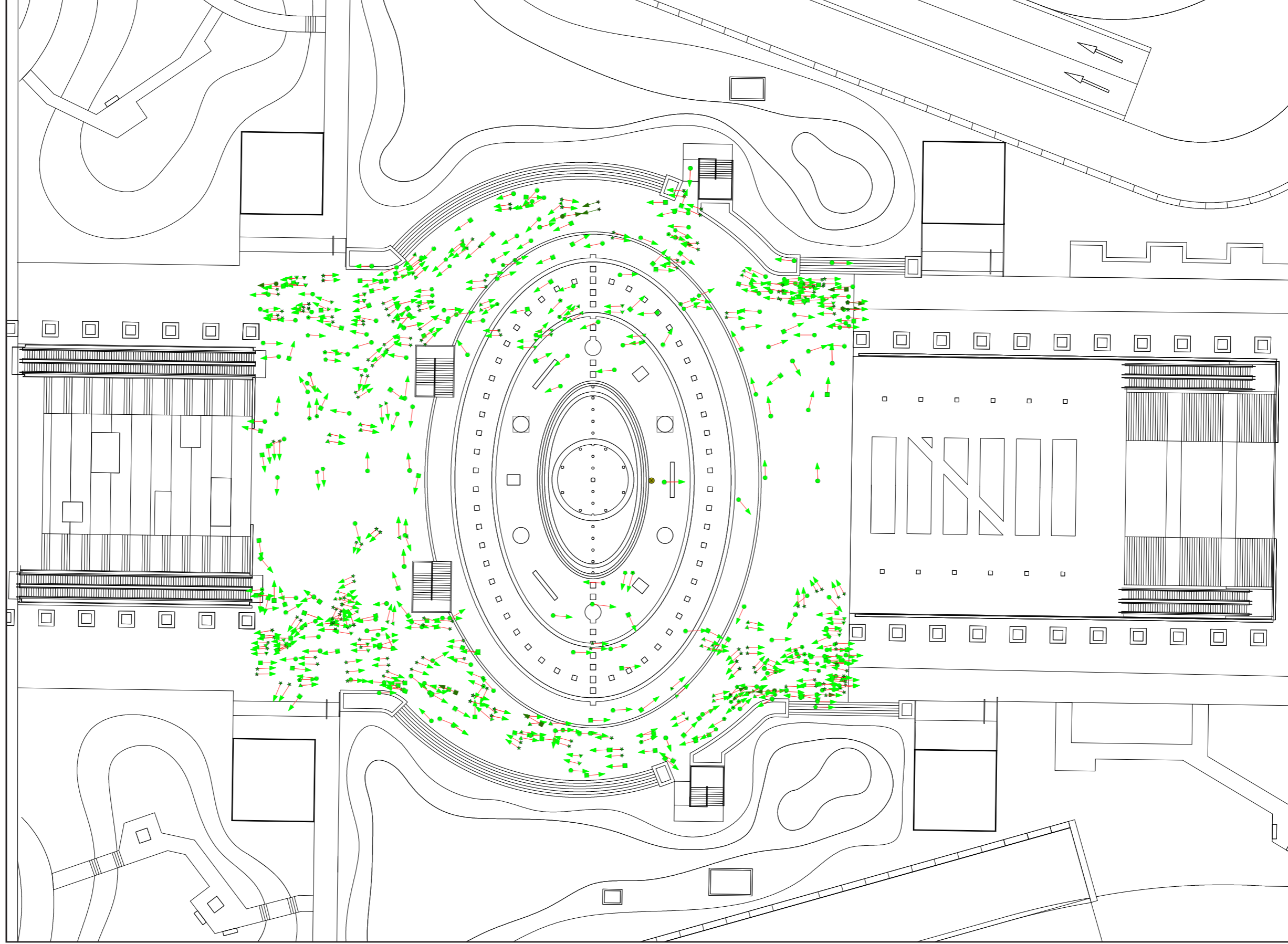
1:500

BEHAVIOUR MAP

Place: Flower City Square - Water Fountain Square

Passing-through

Date: 31.01.2013



NORTH ARROW

Figure 2.23 The behaviour map of passing-through behaviours which occurred in Water Fountain Square - 31.01.2013



1:500

BEHAVIOUR MAP

Place: Flower City Square - Water Fountain Square

Staying-in

Date: 31.01.2013

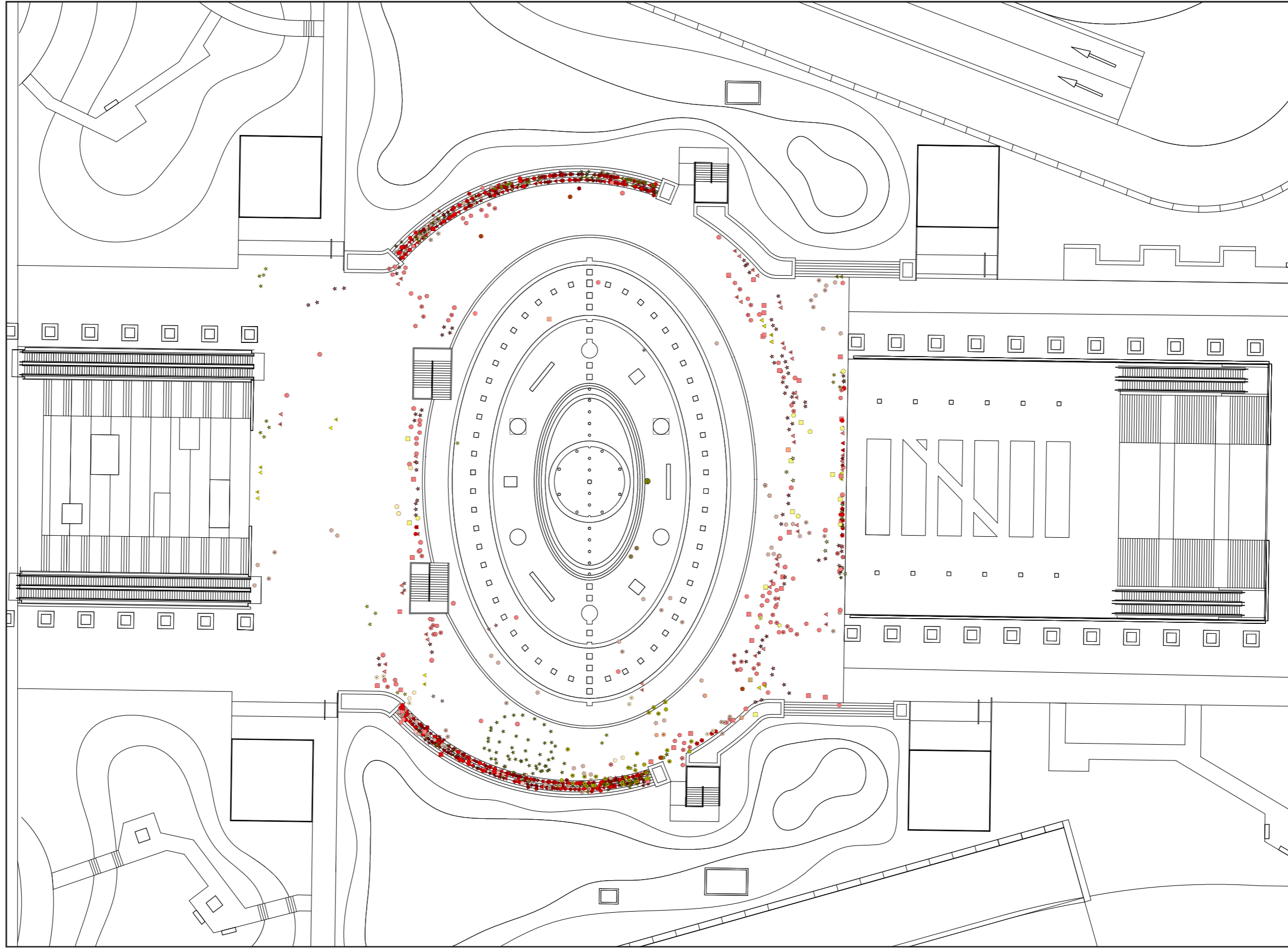


Figure 2.24 The behaviour map of staying-in behaviours which occurred in Water Fountain Square - 31.01.2013

NORTH ARROW



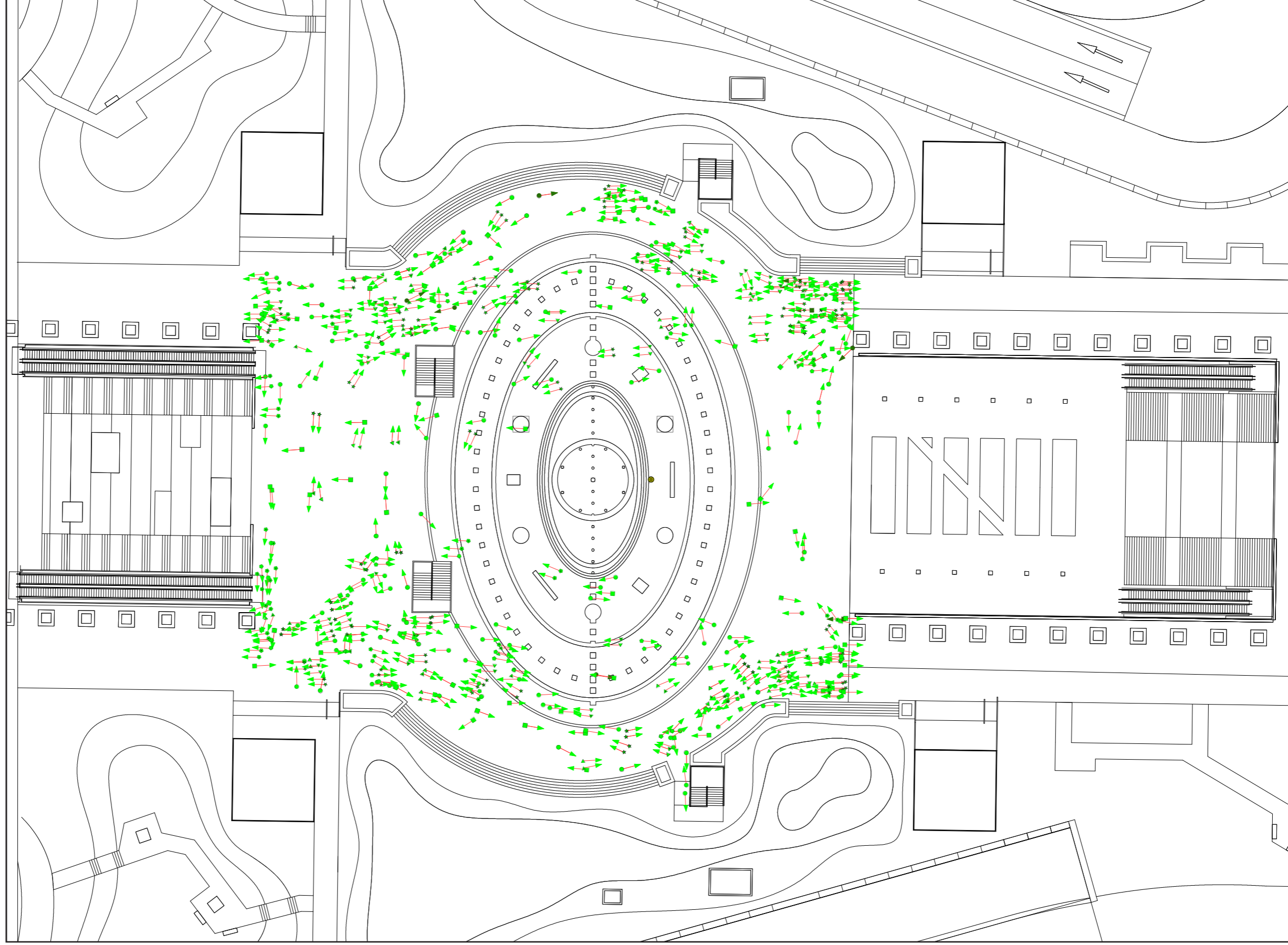
1:500

BEHAVIOUR MAP

Place: Flower City Square - Water Fountain Square

Passing-through

Date: 02.02.2013



NORTH ARROW



1:500

Figure 2.25 The behaviour map of passing-through behaviours which occurred in Water Fountain Square - 02.02.2013

BEHAVIOUR MAP

Place: Flower City Square - Water Fountain Square

Staying-in

Date: 02.02.2013

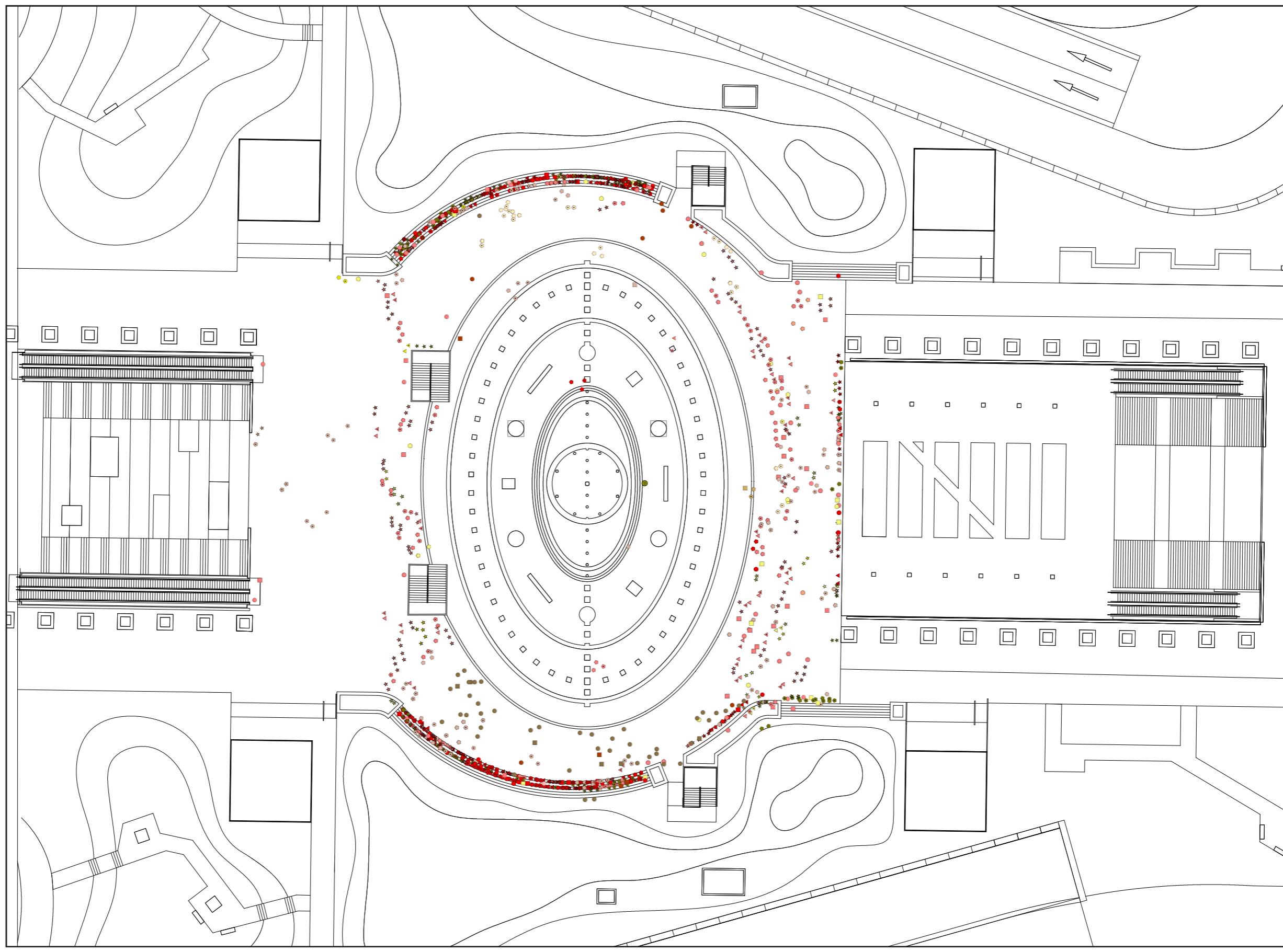


Figure 2.26 The behaviour map of staying-in behaviours which occurred in Water Fountain Square - 02.02.2013

NORTH ARROW



1:500

PASSING-THROUGH FLOW MAP

Place: Flower City Square - Water Fountain Square

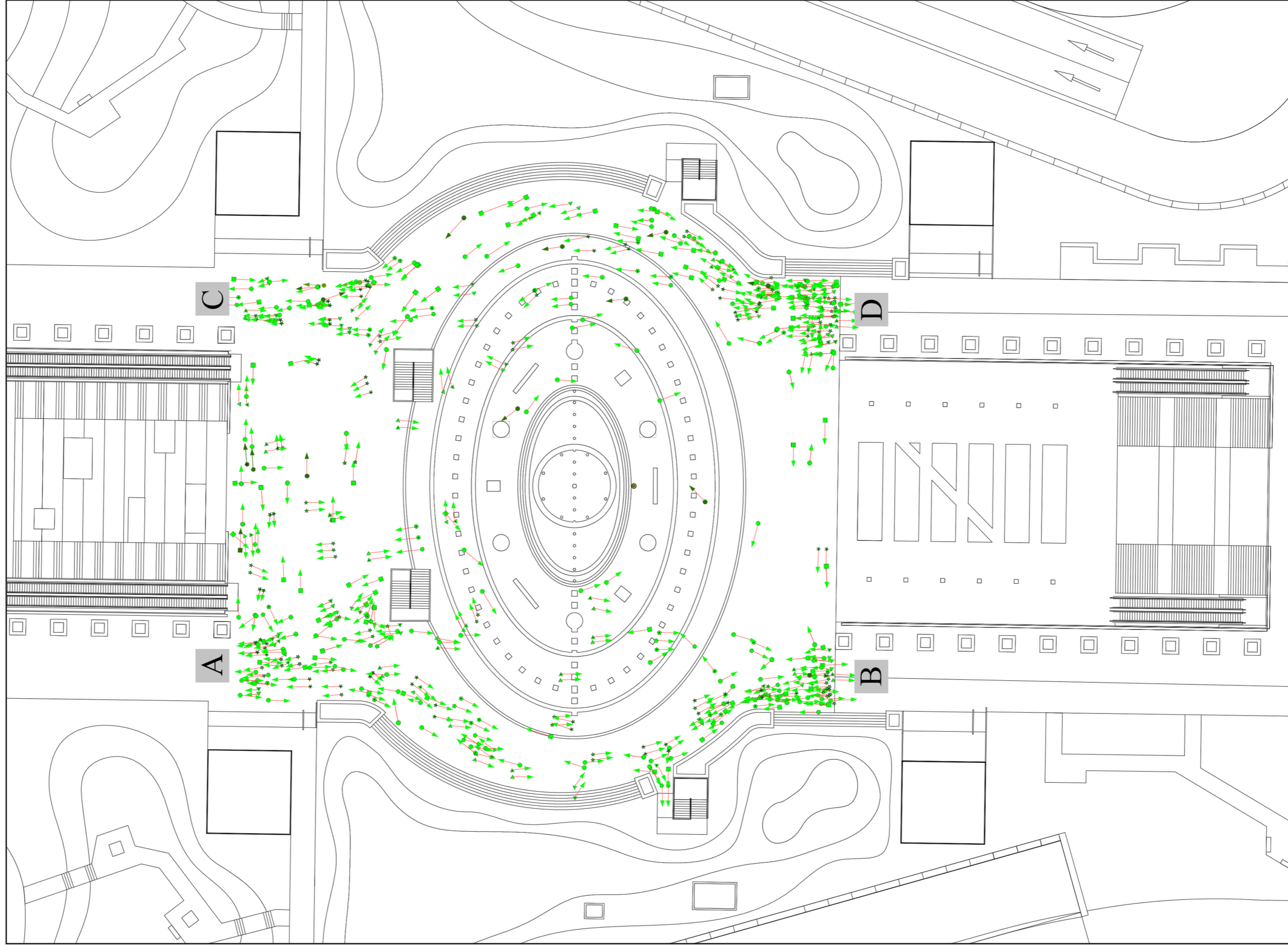


Figure 2.27 Schematic diagram 1 - Water Fountain Square

NORTH ARROW



STAYING-IN ZONE MAP

Place: Flower City Square - Water Fountain Square

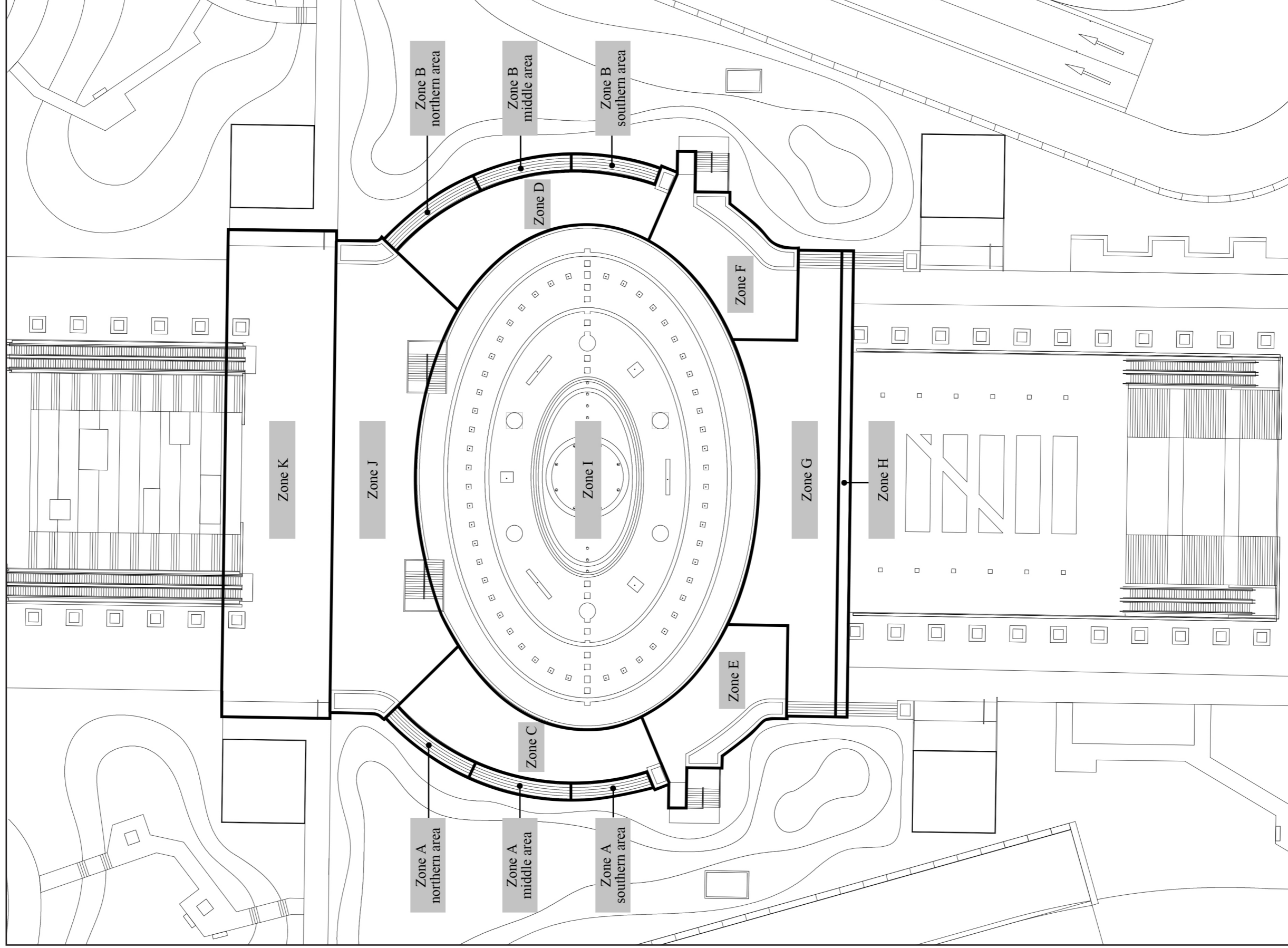


Figure 2.28 Schematic diagram 2 - Water Fountain Square



**BEHAVIOUR MAPS
- LIGHTING SQUARE**

BEHAVIOUR MAP

Place: Flower City Square - Lighting Square

Passing-through

Date: 22.01.2013

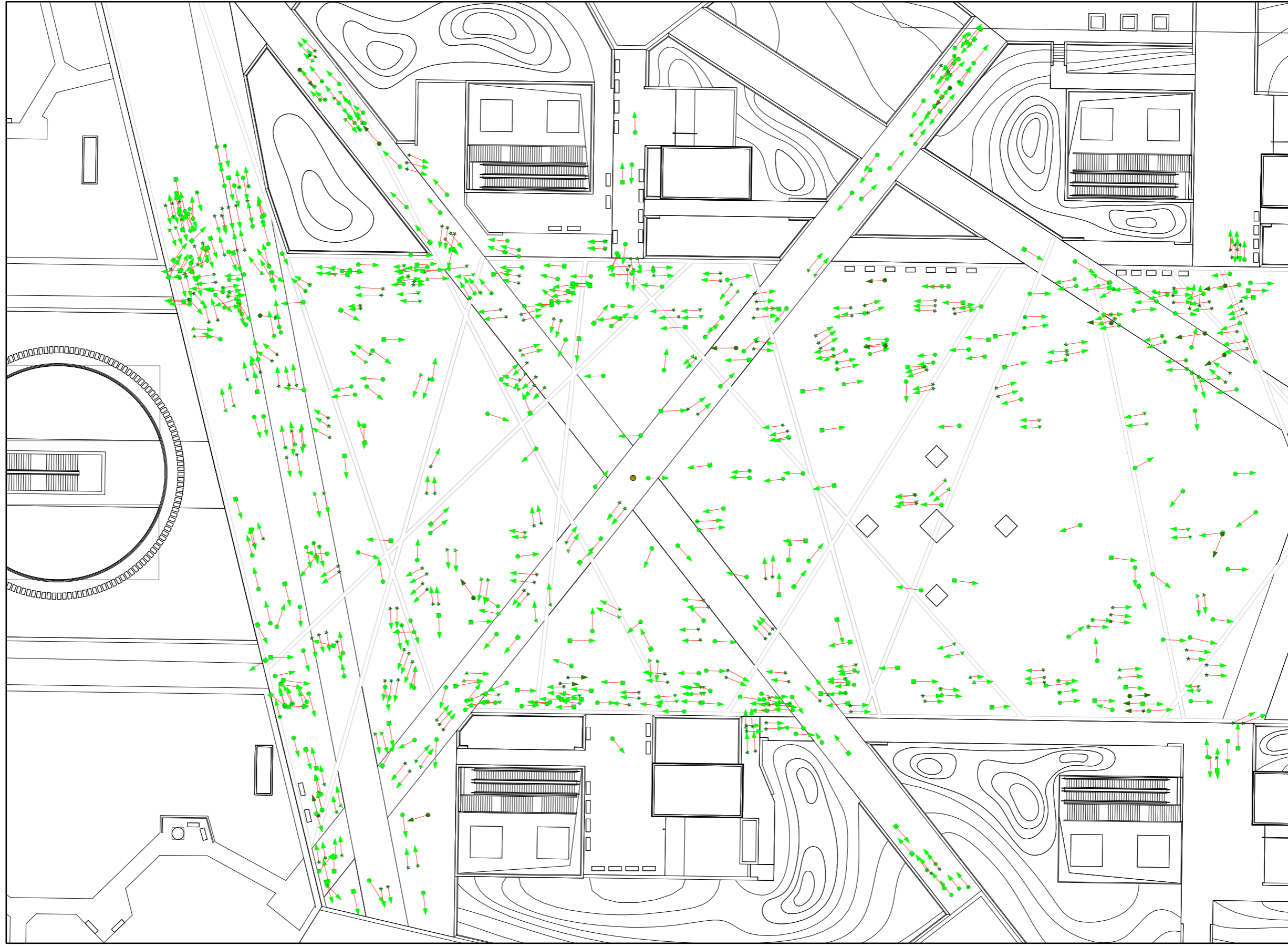


Figure 2.29 The behaviour map of passing-through behaviours which occurred in Lighting Square - 22.01.2013

NORTH ARROW



1:500

BEHAVIOUR MAP

Place: Flower City Square - Lighting Square

Staying-in

Date: 22.01.2013

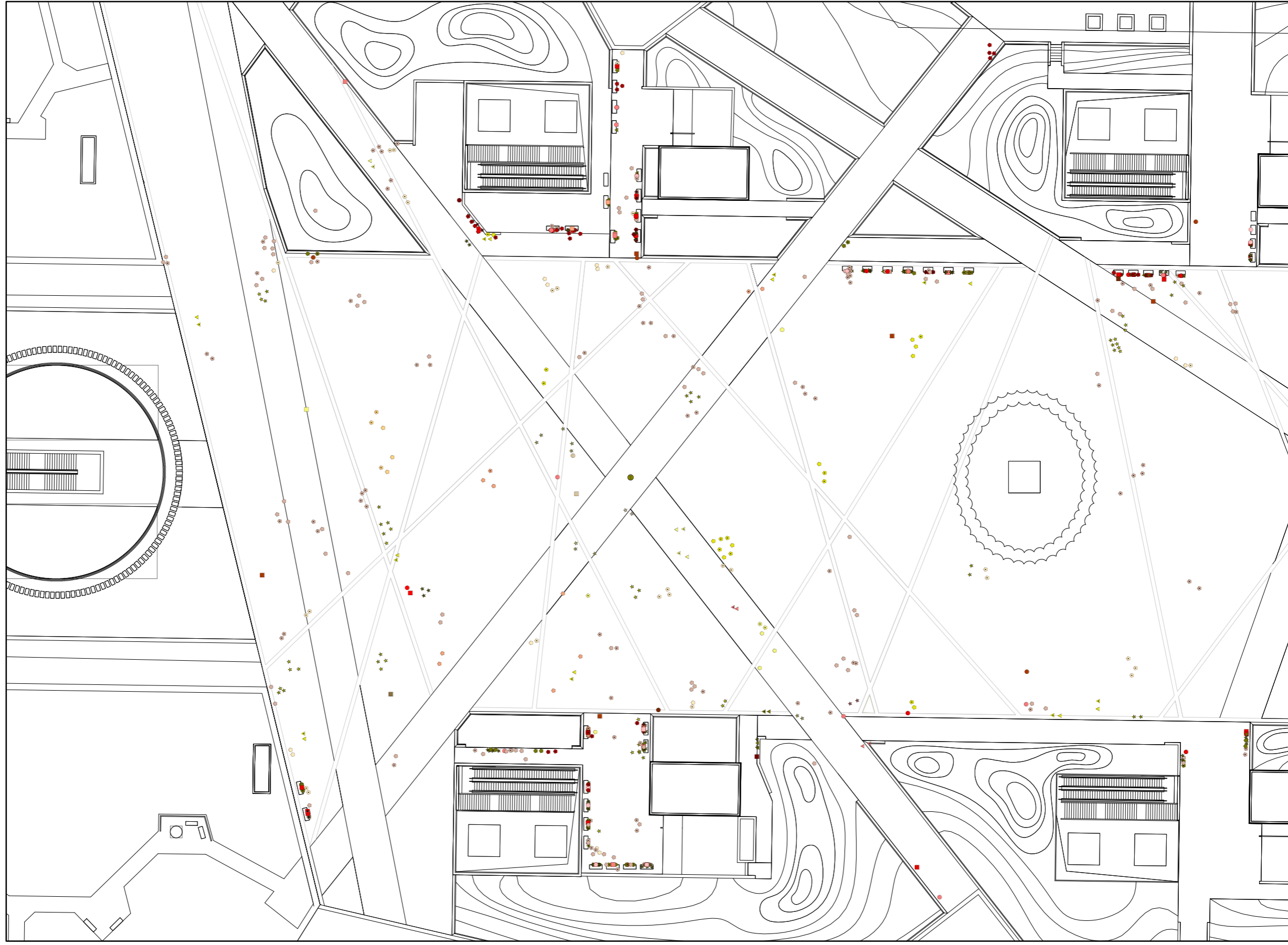


Figure 2.30 The behaviour map of staying-in behaviours which occurred in Lighting Square - 22.01.2013

BEHAVIOUR MAP

Place: Flower City Square - Lighting Square

Passing-through

Date: 24.01.2013

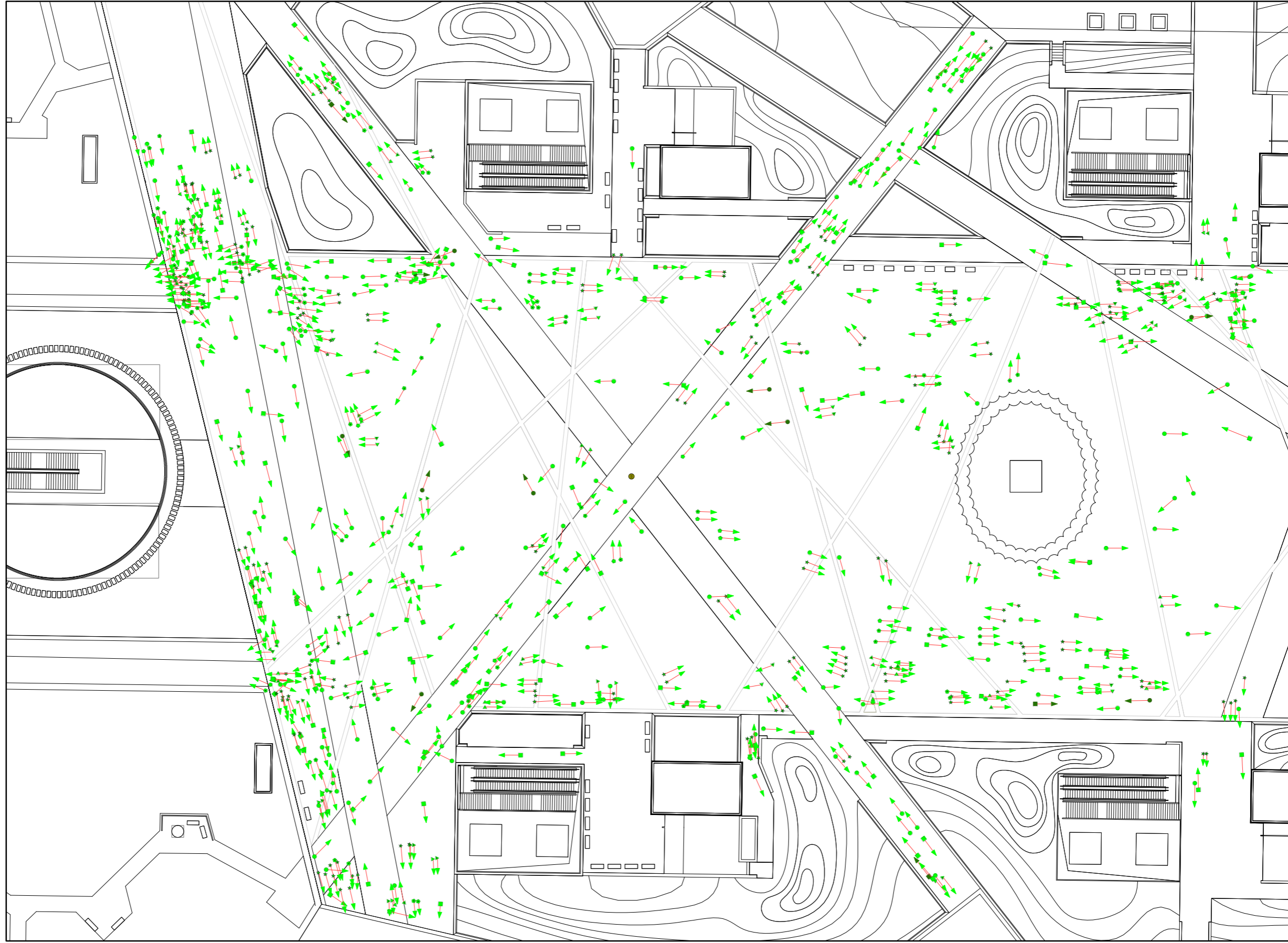


Figure 2.31 The behaviour map of passing-through behaviours which occurred in Lighting Square - 24.01.2013

NORTH ARROW



1:500

BEHAVIOUR MAP

Place: Flower City Square - Lighting Square

Staying-in

Date: 24.01.2013

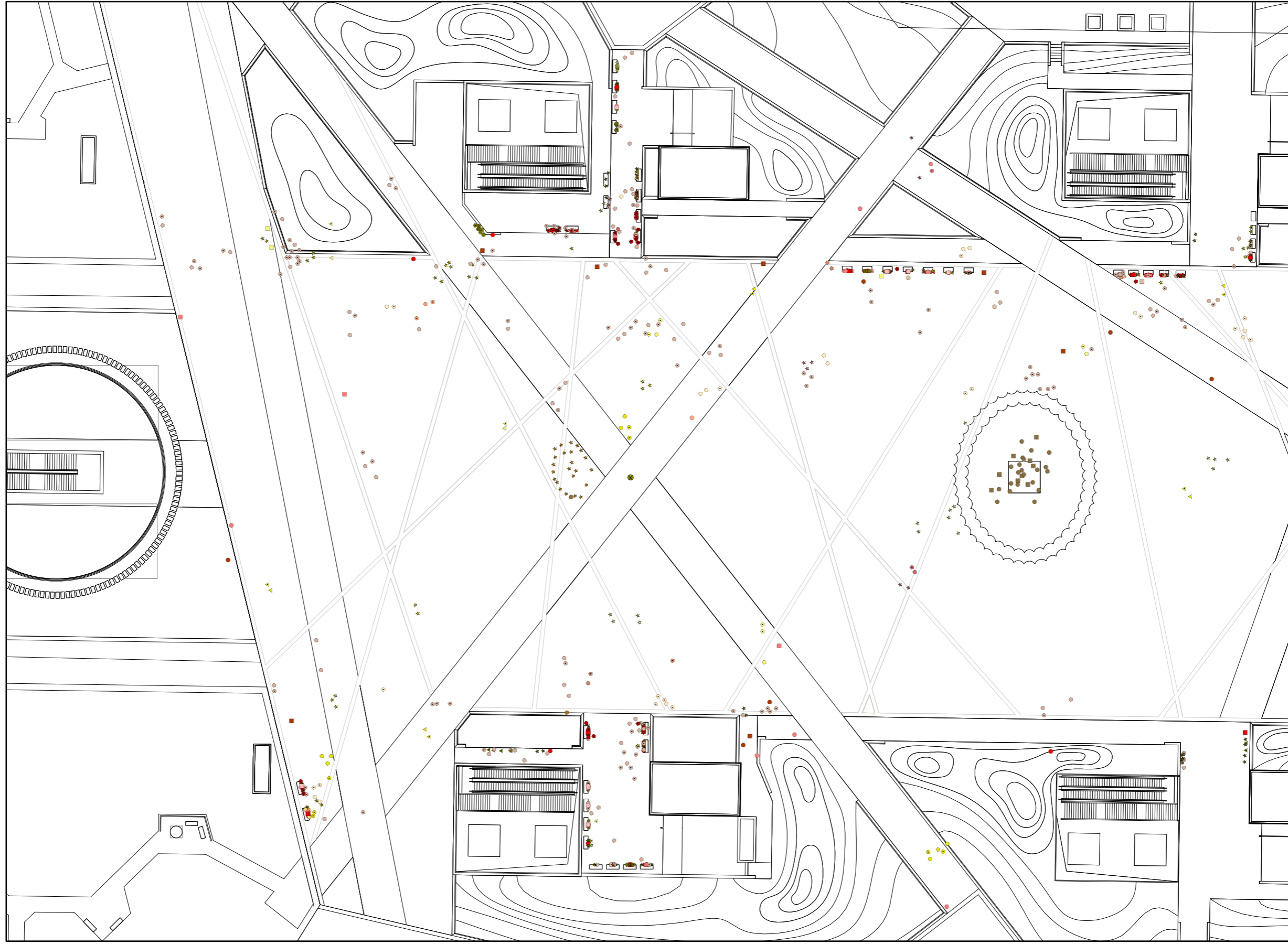


Figure 2.32 The behaviour map of staying-in behaviours which occurred in Lighting Square - 24.01.2013

BEHAVIOUR MAP

Place: Flower City Square - Lighting Square

Passing-through

Date: 26.01.2013

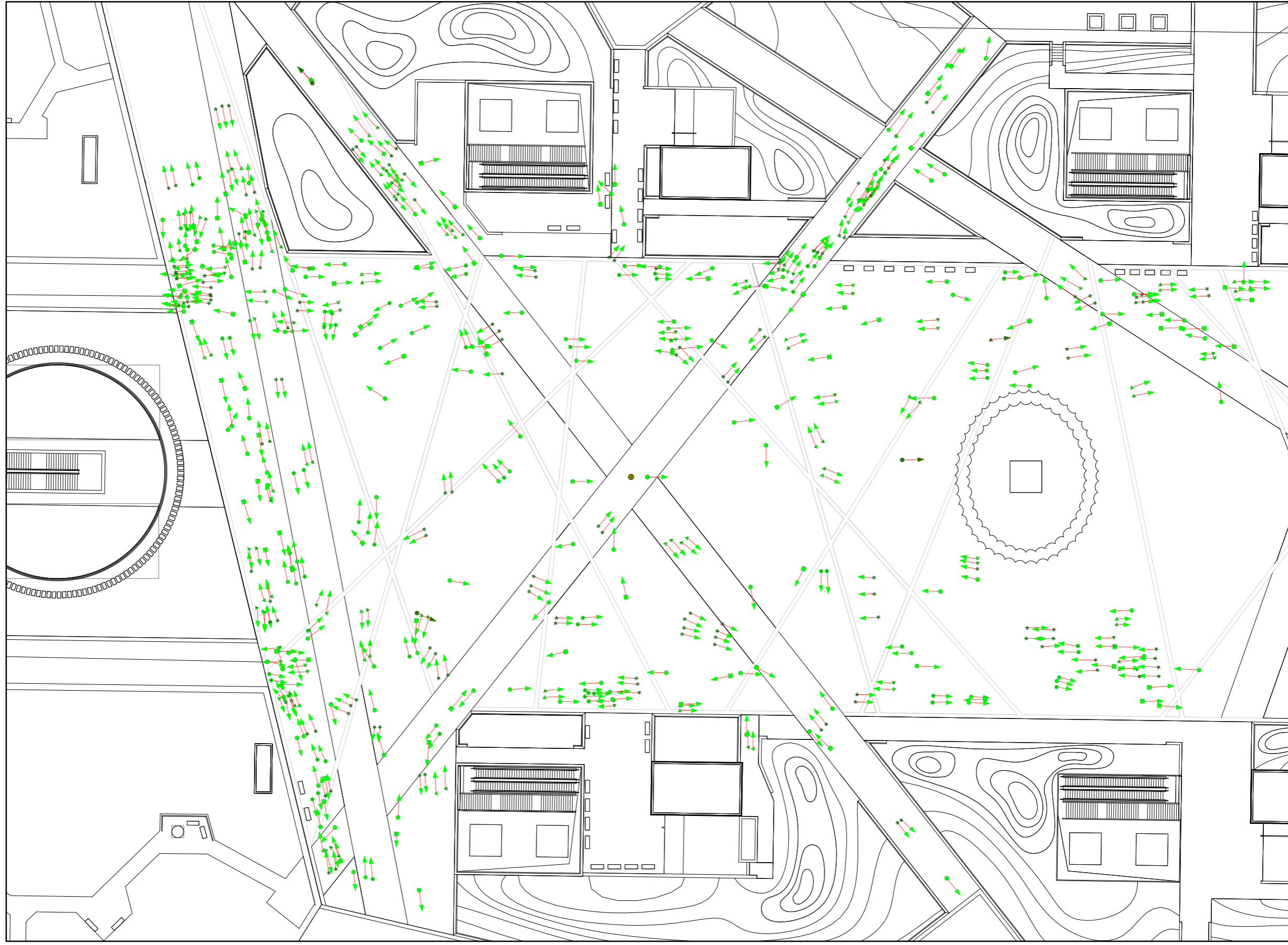


Figure 2.33 The behaviour map of passing-through behaviours which occurred in Lighting Square - 26.01.2013

NORTH ARROW



1:500

BEHAVIOUR MAP

Place: Flower City Square - Lighting Square

Staying-in

Date: 26.01.2013

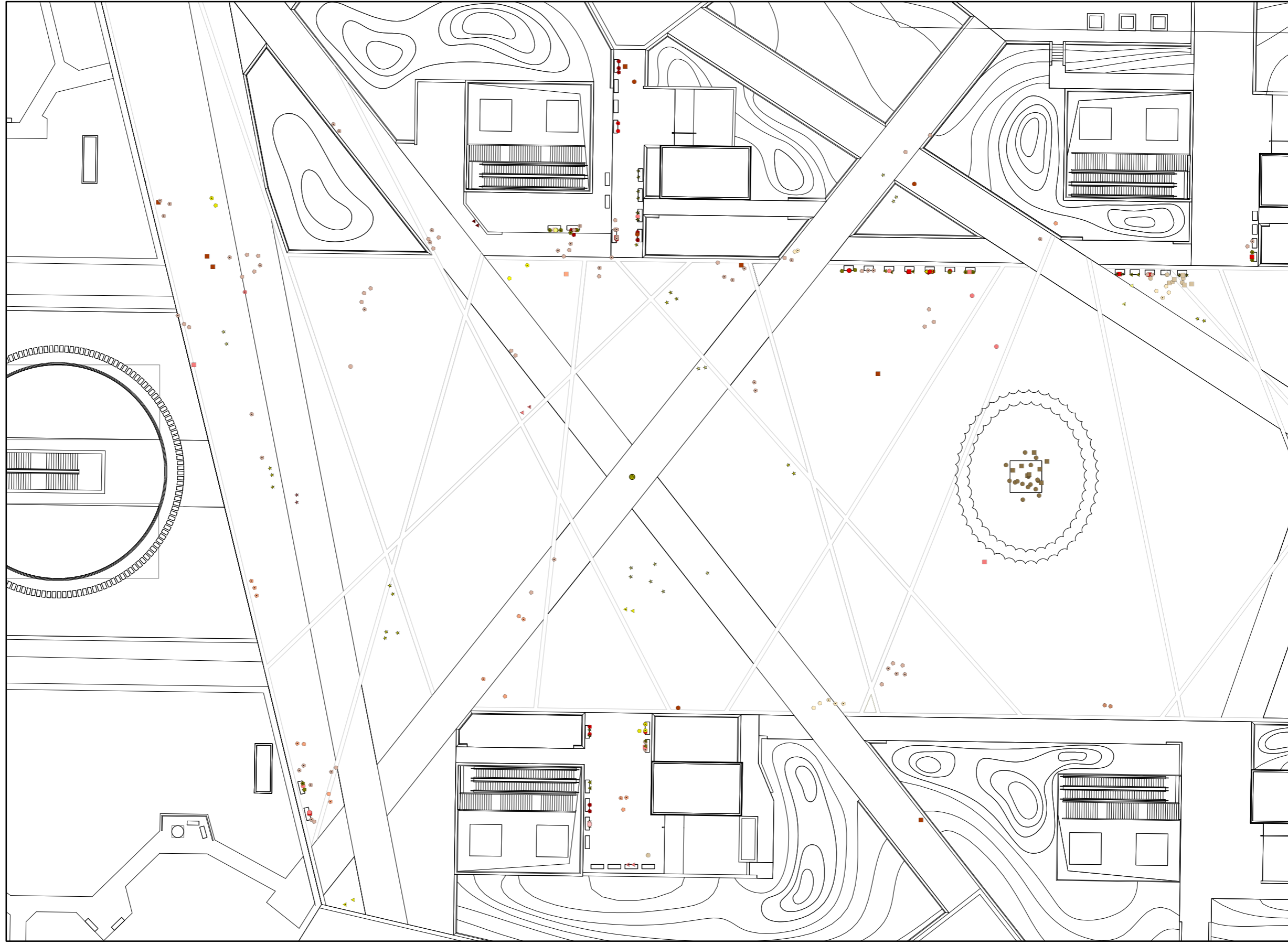


Figure 2.34 The behaviour map of staying-in behaviours which occurred in Lighting Square - 26.01.2013

BEHAVIOUR MAP

Place: Flower City Square - Lighting Square

Passing-through

Date: 29.01.2013

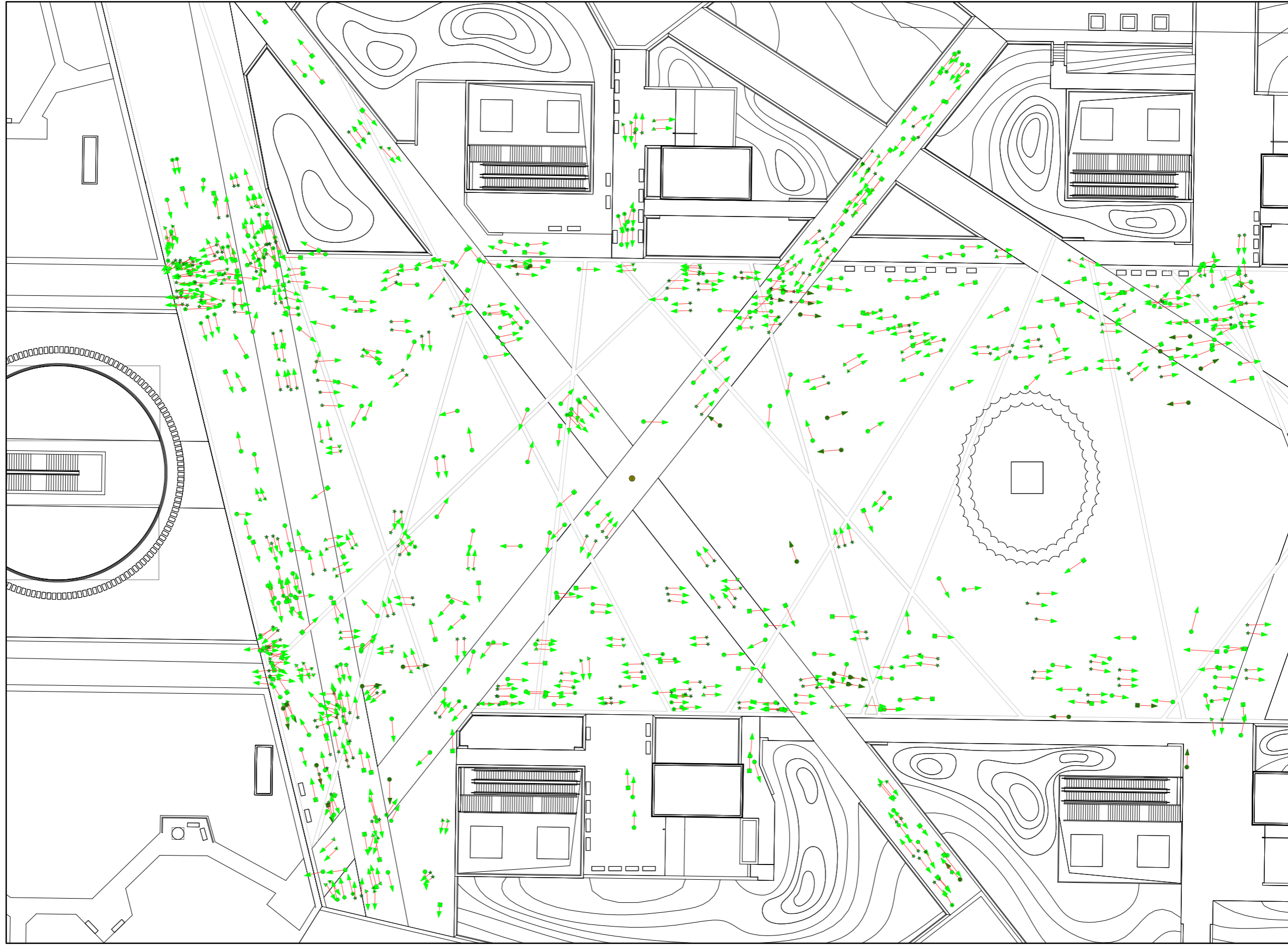


Figure 2.35 The behaviour map of passing-through behaviours which occurred in Lighting Square - 29.01.2013

NORTH ARROW



1:500

BEHAVIOUR MAP

Place: Flower City Square - Lighting Square

Staying-in

Date: 29.01.2013

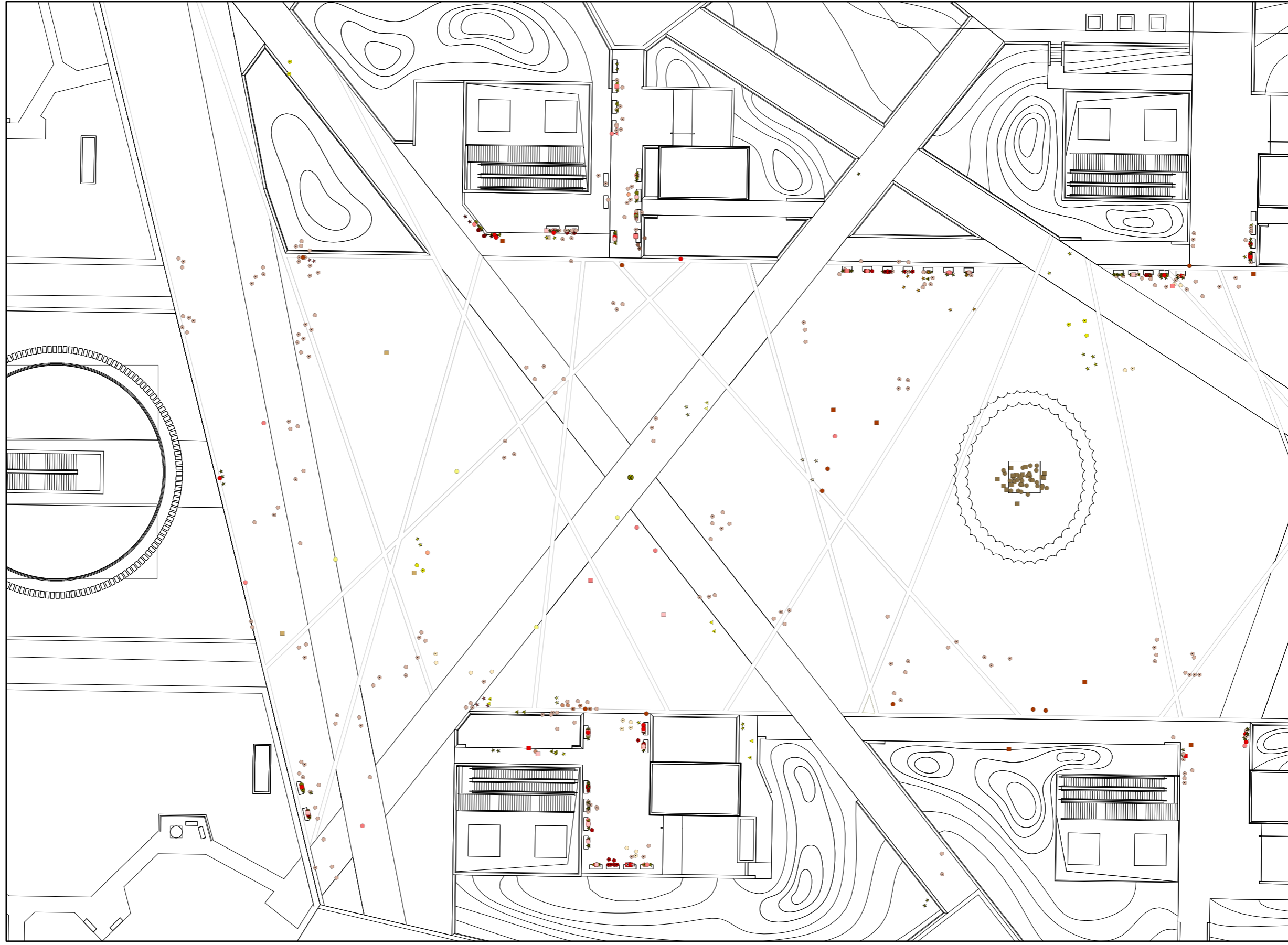


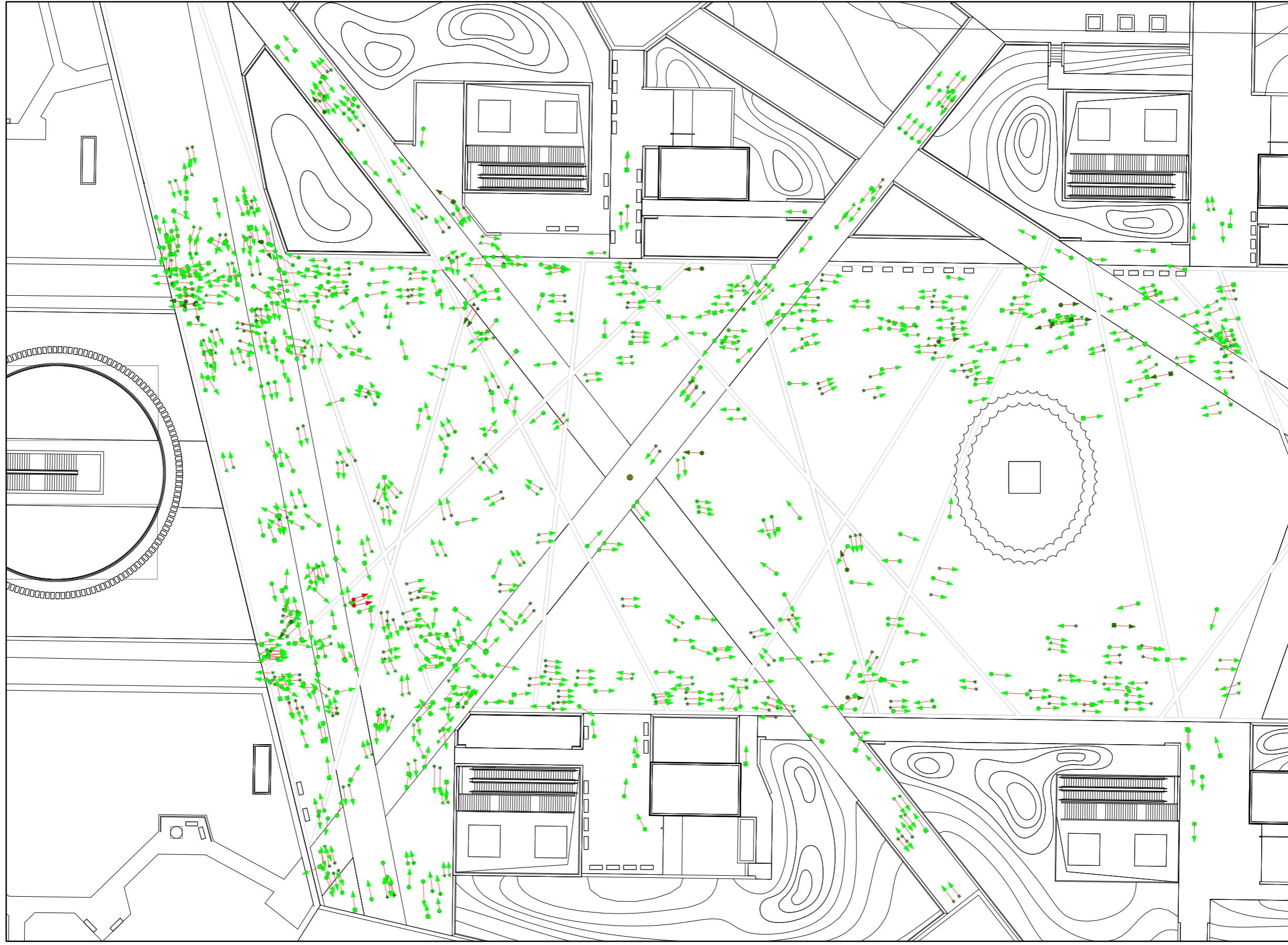
Figure 2.36 The behaviour map of staying-in behaviours which occurred in Lighting Square - 29.01.2013

BEHAVIOUR MAP

Place: Flower City Square - Lighting Square

Passing-through

Date: 31.01.2013



NORTH ARROW



1:500

Figure 2.37 The behaviour map of passing-through behaviours which occurred in Lighting Square - 31.01.2013

BEHAVIOUR MAP

Place: Flower City Square - Lighting Square

Staying-in

Date: 31.01.2013

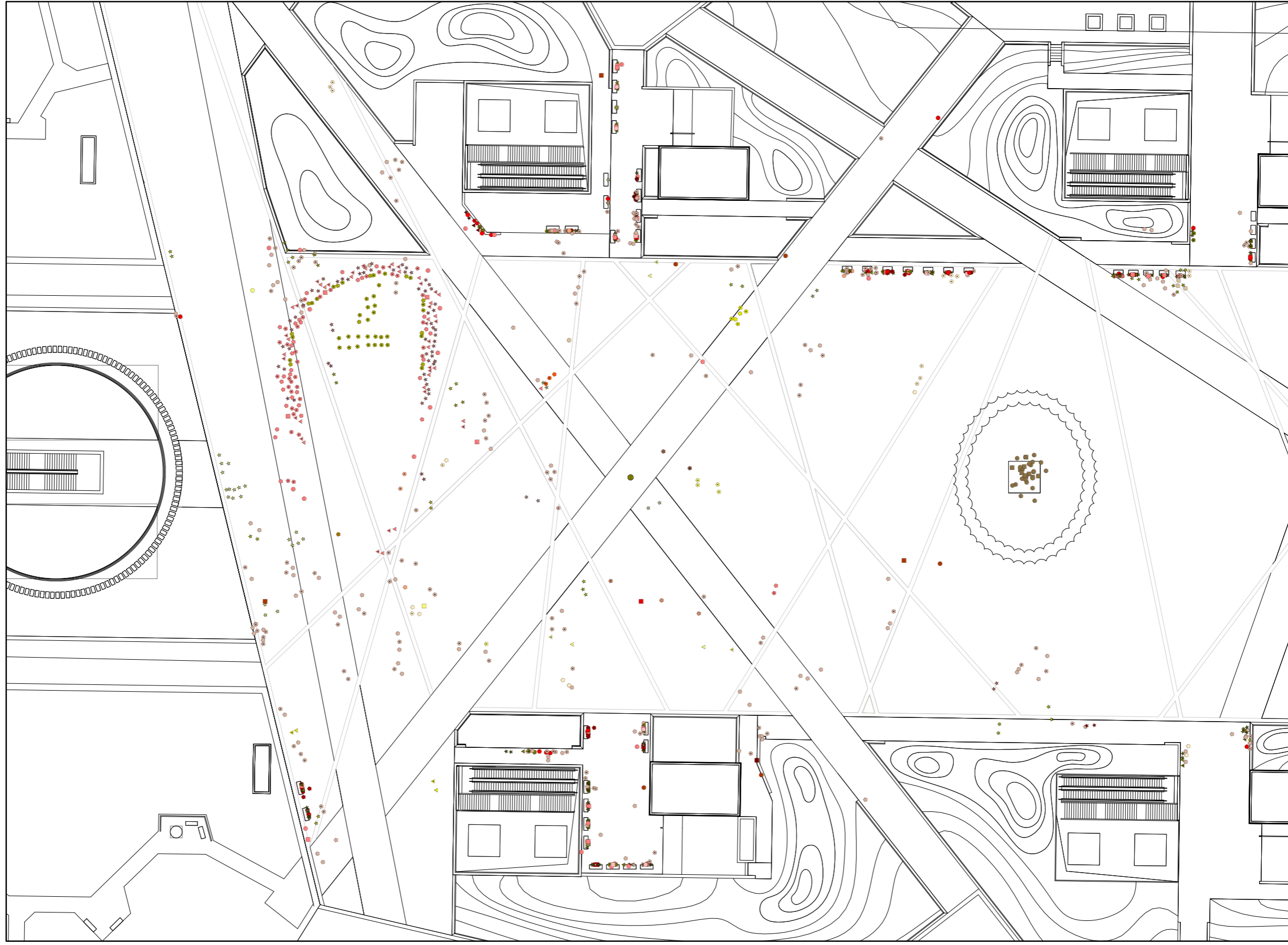


Figure 2.38 The behaviour map of staying-in behaviours which occurred in Lighting Square - 31.01.2013



1:500

BEHAVIOUR MAP

Place: Flower City Square - Lighting Square

Passing-through

Date: 02.02.2013

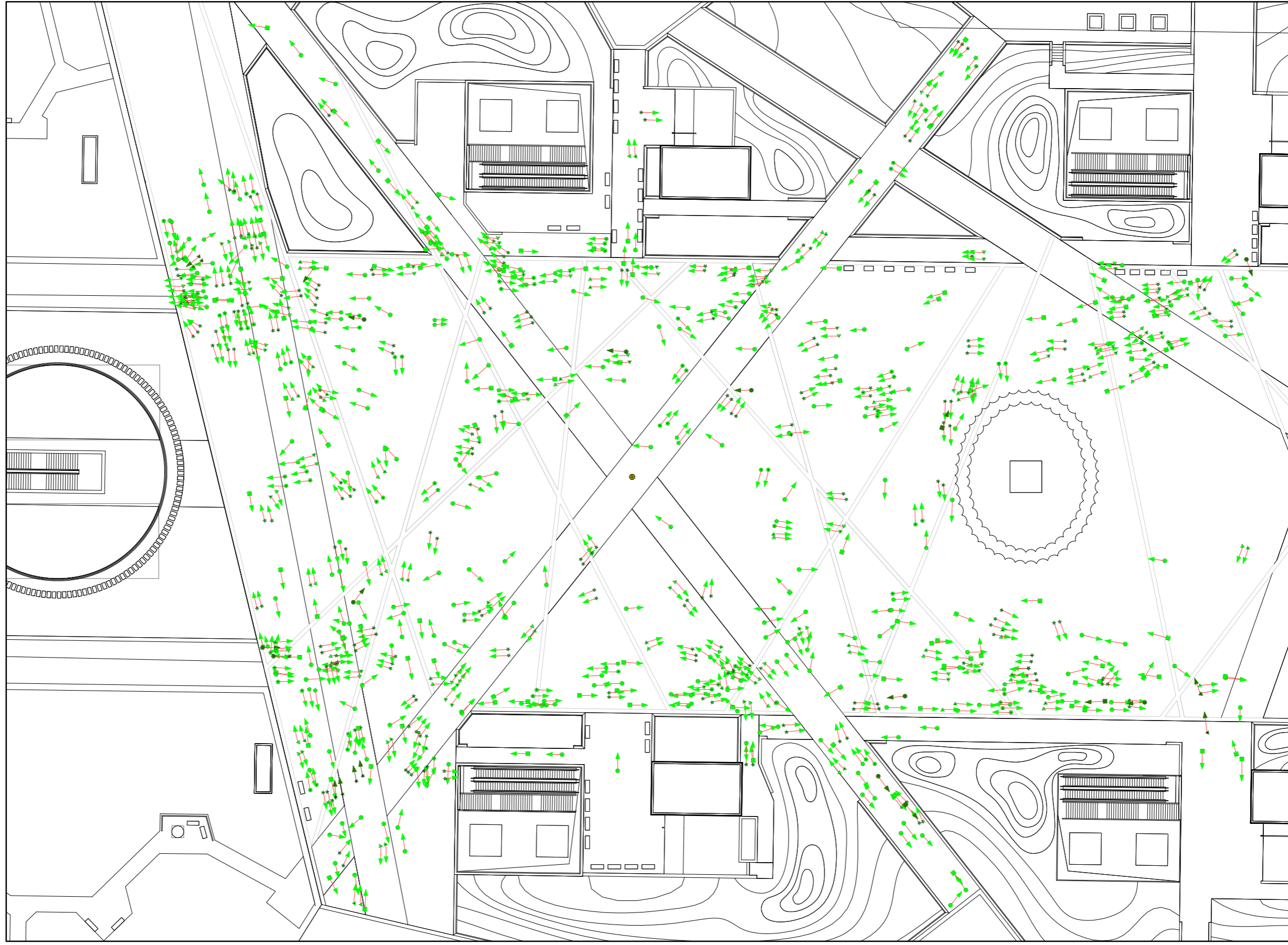


Figure 2.39 The behaviour map of passing-through behaviours which occurred in Lighting Square - 02.02.2013

NORTH ARROW



1:500

BEHAVIOUR MAP

Place: Flower City Square - Lighting Square

Staying-in

Date: 02.02.2013

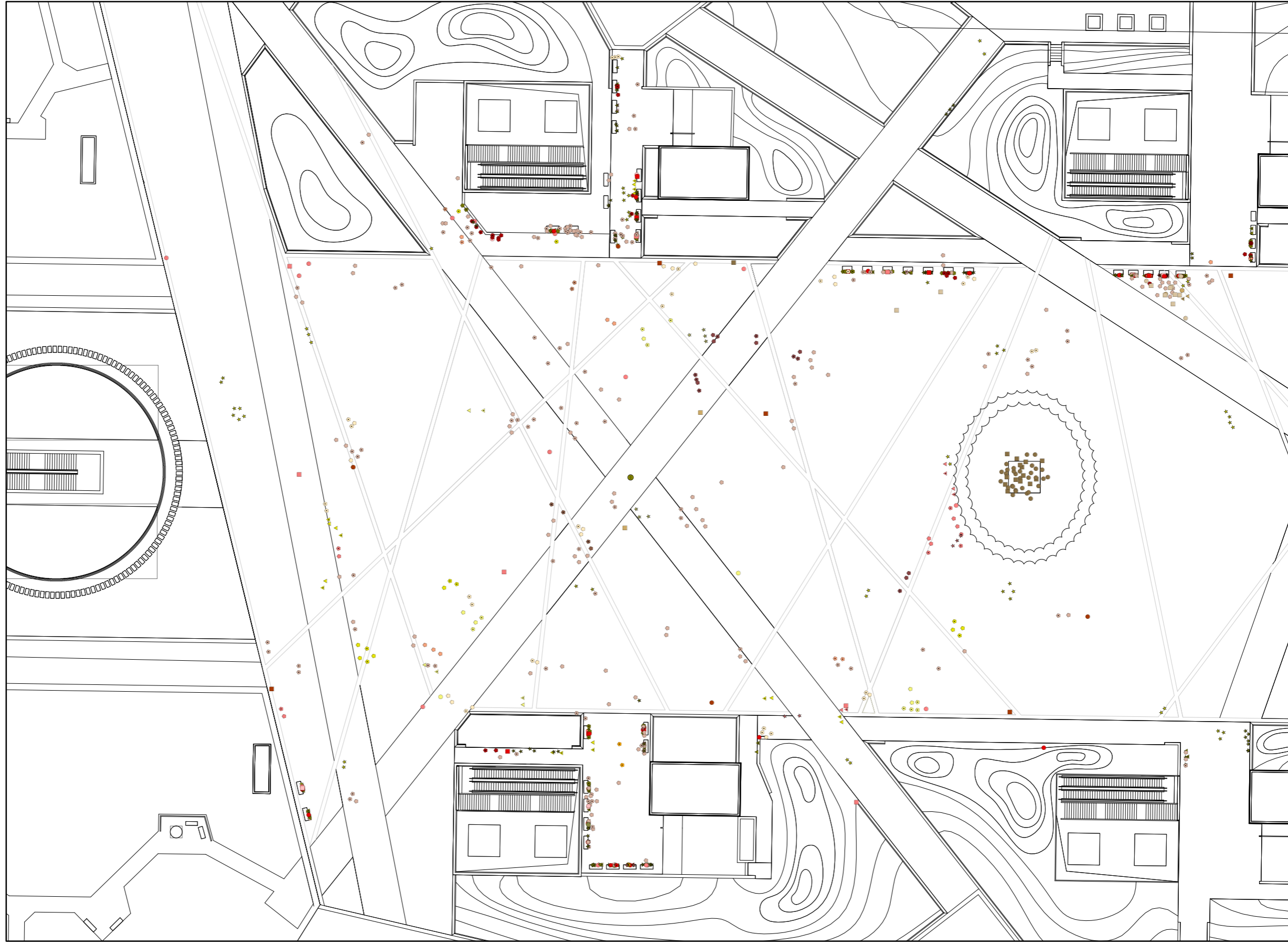


Figure 2.40 The behaviour map of staying-in behaviours which occurred in Lighting Square - 02.02.2013



1:500

STAYING-IN ZONE MAP

Place: Flower City Square - Lighting Square

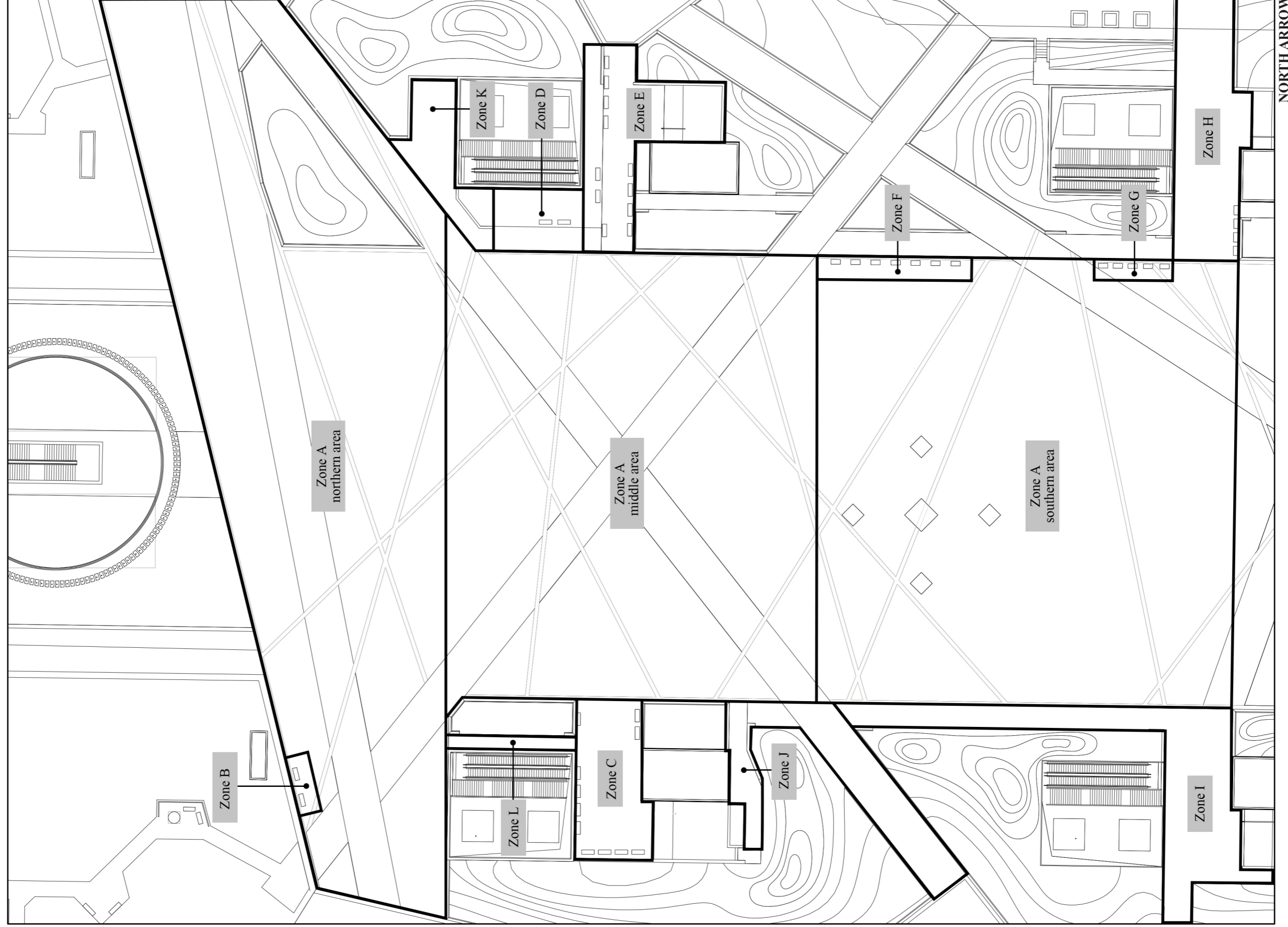


Figure 2.41 Schematic diagram 1 - Lighting Square

APPENDIX C
- TABLES OF THE MAIN USAGE
AND THEIR USERS

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**TABLES OF THE MAIN
USAGE AND THEIR USERS
- HERO SQUARE**

| HERO SQUARE - WEEKDAYS | | | | | | | | | |
|-------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------------|-------------------------|---------------------------|--------------------------------------------------------------|
| Time | Passing-through Vs Staying-in | Top three main typical staying-in behaviours | Corresponding users by participating group | Corresponding users by age in the participating group | Corresponding users by gender in the participating group | Dominant behaviours | | | |
| 07:00 | Similar | - Doing exercises (morning) (08.01, approximately 67%, 4/6) | Single (4/4) | 65+ years old (100%) | Female (2), Male (2) | - Passing through on foot - Doing exercises (morning) | | | |
| | | - Square patrolling (08.01, approximately 33%, 2/6) | Single (2/2) | 25-64 years old (100%) | Male (2) | | | | |
| | | - Doing exercises (morning) (10.01, approximately 67%, 6/9) | Single (6/6) | 65+ years old (100%) | Female (2), Male (4) | | | | |
| | | - Square patrolling (10.01, approximately 22%, 2/9) | Single (2) | 25-64 years old (100%) | Male (2) | | | | |
| | | - Square cleaning by sanitation worker (10.01, approximately 11%, 1/9) | Single (1/1) | 25-64 years old (100%) | Female (1) | | | | |
| | | - Doing exercises (morning) (15.01, approximately 50%, 5/10) | Single (5/5) | 65+ years old (100%) | Female (2), Male (3) | | | | |
| | | - Sitting and chatting (15.01, approximately 20%, 2/10) | Friends (2/2) | 25-64 years old (approximately 50%) 65+ years old (approximately 50%) | Female (1) Female (1) | | | | |
| | | - Square patrolling (15.01, approximately 20%, 2/10) | Single (2/2) | 25-64 years old (100%) | Male (2) | | | | |
| | | - Doing exercises (morning) (17.01, approximately 63%, 5/8) | Single (5/5) | 65+ years old (100%) | Female (1), Male (4) | | | | |
| | | - Square patrolling (17.01, approximately 25%, 2/8) | Single (2/2) | 25-64 years old (100%) | Male (2) | | | | |
| | | - Square cleaning by sanitation worker (17.01, approximately 12%, 1/8) | Single (1/1) | 25-64 years old (100%) | Female (1) | | | | |
| | | 07:30 | Similar (Except for: 15.01.2013 passing-through) | - Doing exercises (morning) (08.01, approximately 69%, 11/16) | Single (11/11) | | 65+ years old (100%) | Female (5), Male (6) | - Passing through on foot - Doing exercises (morning) |
| - Sitting and watching (people or plants) (08.01, approximately 13%, 2/16) | Single (2) | | | 25-64 years old (100%) | Male (2) | | | | |
| - Square patrolling (08.01, approximately 13%, 2/16) | Single (2) | | | 25-64 years old (100%) | Male (2) | | | | |
| - Doing exercises (morning) (10.01, approximately 64%, 7/11) | Single (5/7) | | | 65+ years old (100%) | Female (2), Male (3) | | | | |
| - Sitting and chatting (10.01, approximately 18%, 2/11) | Friends (2/7) | | | 65+ years old (100%) | Female (2) | | | | |
| - Square patrolling (10.01, approximately 18%, 2/11) | Single (2/7) | | | 25-64 years old (100%) | Male (2) | | | | |
| - Doing exercises (morning) (17.01, approximately 56%, 5/9) | Single (5/5) | | | 65+ years old (100%) | Female (1), Male (4) | | | | |
| - Square patrolling (17.01, approximately 22%, 2/9) | Single (2/2) | | | 25-64 years old (100%) | Male (2) | | | | |
| - Rollerblading (17.01, approximately 22%, 2/9) | Single (2/2) | | | 25-64 years old (100%) | Female (1), Male (1) | | | | |
| 08:00 | Passing-through | | | | | | | - Passing through on foot | |
| 09:00 | Passing-through | | | | | | | - Passing through on foot | |

Table 1.1 The summary of the main usage and their users in Hero Square - weekdays

| | | | | | | |
|------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------|
| 10:00 | Passing-through (Except for: 15.01.2013 - similar 17.01.2013 - staying-in) | - Running and playing, using open area (15.01, approximately 58%, 19/33) | Family (19/19) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (4-7), Male (1-2) Female (4-7), Male (1-3) | - Passing through on foot |
| | | - Standing and watching (people, plants or sculptures) (15.01, approximately 12%, 4/33) | Single (2/4) | 25-64 years old (100%) | Male (2) | - Running and playing, using open area |
| | | - Sitting and chatting (15.01, approximately 6%, 2/33) | Friends (2/2) | 25-64 years old (100%) | Male (2) | - Sitting with a pram |
| | | - Sitting with a pram (17.01, approximately 20%, 9/44) | Family (9/9) | 0-3 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (1-3), Male (1-2) Female (2-4), Male (1-2) | - Rehearsing collective activity |
| | | - Rehearsing collective activity (17.01, approximately 18%, 8/44) | Friends (8/8) | 19-24 years old (100%) | Female (2), Male (6) | |
| | | - Strolling with a pram (17.01, approximately 9%, 4/44) | Family (4/4) | 0-3 years old (approximately 50%) 25-64 years old (approximately 50%) | Female (1), Male (1) Female (1), Male (1) | |
| 11:00 | Staying-in (Except for: 17.01.2013 similar) | - Standing with a pram (08.01, approximately 15%, 8/55) | Family (8/8) | 0-3 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (1-2), Male (1-2) Female (1-3), Male (1-2) | - Passing through on foot |
| | | - Rollerblading (08.01, approximately 13%, 7/55) | Family (7/7) | 4-12 years old (approximately 57%) 25-64 years old (approximately 43%) | Female (2), Male (2) Female (1), Male (2) | - Standing with a pram |
| | | - Standing and Chatting (08.01, approximately 11%, 6/55) | Friends (4/6) | 25-64 years old (approximately 75%) 65+ years old (approximately 25%) | Male (4) | - Standing and watching (people, plants or sculptures) |
| | | - Standing with a pram (10.01, approximately 18%, 4/22) | Family (4/4) | 0-3 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (1-2) Female (1-3) | - Running and playing, using open area |
| | | - Standing and watching (people, plants or sculptures) (10.01, approximately 18%, 4/22) | Couple (4/4) | 25-64 years old (100%) | Female (2), Male (2) | - Sitting and chatting |
| | | - Running and playing, using open area (10.01, approximately 14%, 3/22) | Family (3/3) | 0-3 years old (approximately 67%) 65+ years old (approximately 33%) | Female (1), Male (1) Male (1) | - Rehearsing collective activity |
| | | - Running and playing, using open area (15.01, approximately 36%, 25/69) | Family (25/25) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (2-5), Male (3-7) Female (3-6), Male (4-8) | - Strolling with a pram |
| | | - Sitting and chatting (15.01, approximately 20%, 9/46) | Couple (4/9) | 25-64 years old (100%) | Female (2), Male (2) | |
| - Strolling with a pram (15.01, approximately 7%, 5/69) | Family (5/5) | 0-3 years old (approximately 40%) 25-64 years old (approximately 60%) | Female (2) Female (2), Male (1) | | | |

Table 1.1 The summary of the main usage and their users in Hero Square - weekdays

| | | | | | |
|------------------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:00 Staying-in (Except for: 17.01.2013 similar) | - Rehearsing collective activity (17.01, approximately 29%, 20/68) | Friends (20/20) | 19-24 years old (100%) | Female (9), Male (11) | |
| | - Strolling with a pram (17.01, approximately 15%, 10/68) | Family (10/10) | 0-3 years old (approximately 40%) 4-12 years old (approximately 10%) 25-64 years old (approximately 30%) 65+ years old (approximately 20%) | Female (2), Male (2) Male (1) Female (2), Male (1) Male (2) | |
| | - Running and playing, using open area (17.01, approximately 12%, 8/69) | Family (8/8) | 0-3 years old (approximately 25%) 4-12 years old (approximately 25%) 25-64 years old (approximately 50%) | Female (2) Male (2) Female (1), Male (3) | |
| 12:00 Staying-in | - Standing with a pram (08.01, approximately 17%, 8/46) | Family (8/8) | 0-3 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (2-4) Female (2-4) | - Standing with a pram - Sitting and chatting - Running and playing, using open area - Rehearsing collective activity - Sitting and watching (people, plants or sculptures) |
| | - Sitting and chatting (08.01, approximately 15%, 7/46) | Friends (5/7) | 13-18 years old (approximately 40%) 25-64 years old (approximately 40%) 65+ years old (approximately 20%) | Female (2) Male (2) Male (1) | |
| | - Running and playing with space (08.01, approximately 13%, 6/46) | Family (6/6) | 0-3 years old (approximately 17%) 4-12 years old (approximately 33%) 25-64 years old (approximately 33%) 65+ years old (approximately 17%) | Male (1) Female (1), Male (1) Female (1), Male (1) Female (1) | |
| | - Standing with a pram (10.01, approximately 23%, 6/26) | Family (6/6) | 0-3 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (2-3) Female (3-4) | |
| | - Running and playing with space (10.01, approximately 9%, 4/46) | Family (4/4) | 0-3 years old (approximately 25%) 4-12 years old (approximately 25%) 25-64 years old (approximately 50%) | Female (1) Male (1) Female (1), Male (1) | |
| | - Sitting and watching (people, plants or sculptures) (10.01, approximately 7%, 3/46) | Single (3/3) | 25-64 years old (100%) | Female (1), Male (2) | |
| | - Sitting and chatting (15.01, approximately 19%, 8/42) | Friends (6/8) | 25-64 years old (100%) | Male (6) | |
| | - Running and playing, using open area (15.01, approximately 14%, 6/42) | Family (6/6) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (1-3) Female (2-3) | |
| | - Sitting and watching (people, plants or sculptures) (15.01, approximately 14%, 6/42) | Single (6/6) | 18-24 years old (approximately 17%) 25-64 years old (approximately 66%) 65+ years old (approximately 17%) | Male (1) Female (1), Male (3) Female (1) | |

Table 1.1 The summary of the main usage and their users in Hero Square - weekdays

| | | | | | |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| 12:00 Staying-in | - Rehearsing collective activity (17.01, approximately 29%, 20/68) | Friends (20/20) | 19-24 years old (100%) | Female (6), Male (14) | |
| | - Running and playing, using open area (17.01, approximately 16%, 11/68) | Family (11/11) | 0-3 years old (approximately 36%) 4-12 years old (approximately 9%) 25-64 years old (approximately 55%) | Male (4) Female (1) Female (4), Male (2) | |
| | - Sitting and watching (people, plants or sculptures) (17.01, approximately 15%, 10/68) | Single (10/10) | 13-17 years old (approximately 17%) 25-64 years old (approximately 66%) 65+ years old (approximately 17%) | Male (1) Female (1), Male (6) Female (1), Male (1) | |
| 13:00 Staying-in | - Sitting and chatting (08.01, approximately 21%, 14/66) | Friends (10/14) | 19-24 years old (approximately 20%) 25-64 years old (approximately 80%) | Female (1), Male (1) Female (4), Male (4) | - Sitting and chatting - Sitting with a pram - Sitting and watching (people, plants or sculptures) |
| | - Sitting with a pram (08.01, approximately 20%, 13/66) | Family (13/13) | 0-3 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (2-5), Male (1-2) Female (3-5), Male (1-2) | - Running and playing, using open area |
| | - Sitting and watching (people, plants or sculptures) (08.01, approximately 18%, 12/66) | Single (10/12) | 25-64 years old (approximately 70%) 65+ years old (approximately 30%) | Male (7) Female (1), Male (2) | - Using/playing with phone or personal business |
| | - Using/playing with phone or personal business (10.01, approximately 14%, 6/42) | Single (6/6) | 25-64 years old (100%) | Male (6) | |
| | - Sitting and watching (people, plants or sculptures) (10.01, approximately 12%, 5/42) | Single (5/5) | 13-18 years old (approximately 20%) 25-64 years old (approximately 60%) 65+ years old (approximately 20%) | Male (1) Female (1), Male (2) Male (1) | |
| | - Sitting with a pram (10.01, approximately 12%, 5/42) | Family (5/5) | 0-3 years old (approximately 40%) 25-64 years old (approximately 60%) | Female (1), Male (1) Female (2), Male (1) | |
| | - Sitting and chatting (15.01, approximately 17%, 8/46) | Couple (4/8) | 25-64 years old (approximately 50%) 65+ years old (approximately 50%) | Female (1), Male (1) Female (1), Male (1) | |
| | - Sitting and watching (people, plants or sculptures) (15.01, approximately 15%, 7/46) | Single (7/7) | 25-64 years old (100%) | Female (2), Male (5) | |
| | - Running and playing, using open area (15.01, approximately 15%, 7/46) | Family (7/7) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (1-2), Male (1-2) Female (1-2), Male (2-3) | |
| | - Sitting and chatting (17.01, approximately 33%, 14/42) | Friends (10/14) | 13-18 years old (approximately 20%) 25-64 years old (approximately 80%) | Male (2) Female (4), Male (4) | |
| - Running and playing, using open area (17.01, approximately 14%, 6/42) | Family (6/6) | 0-3 years old (approximately 33%) 4-12 years old (approximately 17%) 25-64 years old (approximately 50%) | Female (2) Female (1) Female (3) | | |
| - Sitting and watching (people, plants or sculptures) (17.01, approximately 14%, 6/42) | Single (4/6) | 25-64 years old (100%) | Male (4) | | |

∞ Table 1.1 The summary of the main usage and their users in Hero Square - weekdays

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|-------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:00 Staying-in | - Sitting and watching (people, plants or sculptures) (08.01, approximately 21%, 15/73) | Single (15/15) | 18-24 years old (approximately 13%) 25-64 years old (approximately 80%) 65+ years old (approximately 7%) | Male (2) Female (1), Male (11) Male (1) | - Sitting and watching (people, plants or sculptures) - Sitting with a pram - Running and playing, using open area - Sitting and chatting - Rehearsing collective activity | |
| | - Sitting with a pram (08.01, approximately 16%, 12/73) | Family (12/12) | 0-3 years old (approximately 42%) 25-64 years old (approximately 58%) | Female (4), Male (1) Female (5), Male (2) | | |
| | - Running and playing, using open area (08.01, approximately 15%, 11/73) | Family (11/11) | 0-3 years old (approximately 46%) 4-12 years old (approximately 9%) 25-64 years old (approximately 27%) 65+ years old (approximately 18%) | Female (3), Male (2) Male (1) Female (3) Female (2) | | |
| | - Sitting with a pram (10.01, approximately 21%, 15/71) | Family (15/15) | 0-3 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (3-5), Male (1-2) Female (4-6), Male (1-2) | | |
| | - Sitting and chatting (10.01, approximately 20%, 14/71) | Friends (8/14) | 25-64 years old (100%) | Female (6), Male (2) | | |
| | - Strolling with a pram (10.01, approximately 10%, 7/71) | Family (7/7) | 0-3 years old (approximately 43%) 25-64 years old (approximately 57%) | Female (3) Female (3), Male (1) | | |
| | - Running and playing, using open area (15.01, approximately 16%, 13/79) | Family (13/13) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (2-4), Male (1-3) Female (3-4), Male (1-4) | | |
| | - Sitting and watching (people, plants or sculptures) (15.01, approximately 13%, 10/79) | Single (10/10) | 25-64 years old (approximately 90%) 65+ years old (approximately 10%) | Female (3), Male (6) Male (1) | | |
| | - Sitting with a pram (15.01, approximately 11%, 9/79) | Family (9/9) | 0-3 years old (approximately 33%) 4-12 years old (approximately 9%) 25-64 years old (approximately 58%) | Female (3) Female (1) Female (4), Male (1) | | |
| | - Rehearsing collective activity (17.01, approximately 18%, 11/61) | Friends (11/11) | 19-24 years old (100%) | Female (1), Male (10) | | |
| | - Sitting and chatting (17.01, approximately 16%, 10/61) | Couple (8/10) | 25-64 years old (approximately 75%) 65+ years old (approximately 25%) | Female (3), Male (3) Female (1), Male (1) | | |
| | - Sitting and watching (people, plants or sculptures) (17.01, approximately 13%, 8/61) | Single (8/8) | 25-64 years old (100%) | Male (8) | | |
| | 15:00 Staying-in | - Sitting and watching (people, plants or sculptures) (08.01, approximately 17%, 12/70) | Single (6/12) | 19-24 years old (approximately 17%) 25-64 years old (approximately 66%) 65+ years old (approximately 17%) | Female (1) Female (1), Male (3) Female (1) | - Sitting and watching (people, plants or sculptures) - Sitting with a pram - Running and playing, using open area - Rollerblading - Rehearsing collective activity - Playing around on bicycle |
| | | - Sitting with a pram (08.01, approximately 16%, 11/70) | Family (11/11) | 0-3 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (2-4), Male (1-2) Female (3-4), Male (1-2) | |
| - Sitting and chatting (08.01, approximately 14%, 10/70) | | Friends (10/10) | 19-24 years old (approximately 20%) 25-64 years old (approximately 40%) 65+ years old (approximately 40%) | Male (2) Female (2), Male (2) Female (4) | | |

Table 1.1 The summary of the main usage and their users in Hero Square - weekdays

| | | | | | |
|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| 15:00 Staying-in | - Sitting with a pram (10.01, approximately 41%, 41/101) | Family (41/41) | 0-3 years old (approximately 45%) 25-64 years old (approximately 55%) 19-24 years old (approximately 22%) | Female (9-14), Male (4-7) Female (10-15), Male (5-8) | |
| | - Sitting and chatting (10.01, approximately 13%, 13/101) | Friends (9/13) | 25-64 years old (approximately 33%) 65+ years old (approximately 45%) | Male (2) Female (3) Female (4) | |
| | - Strolling with a pram (10.01, approximately 12%, 12/101) | Family (12/12) | 0-3 years old (approximately 42%) 4-12 years old (approximately 8%) 25-64 years old (approximately 50%) | Female (5) Female (1) Female (6) | |
| | - Running and playing, using open area (15.01, approximately 25%, 25/102) | Family (25/25) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (5-9), Male (2-3) Female (6-10), Male (2-4) | |
| | - Rollerblading (15.01, approximately 15%, 15/102) | Family (14/15) | 4-12 years old (approximately 36%) 25-64 years old (approximately 57%) 65+ years old (approximately 7%) | Female (2), Male (3) Female (6), Male (2) Female (1) | |
| | - Sitting with a pram (15.01, approximately 13%, 13/102) | Family (13/13) | 0-3 years old (approximately 38%) 25-64 years old (approximately 62%) | Female (3), Male (2) Female (6), Male (2) | |
| | - Rehearsing collective activity (17.01, approximately 22%, 19/86) | Friends (19/19) | 19-24 years old (100%) | Female (7), Male (12) | |
| | - Playing around on bicycle (17.01, approximately 19%, 16/86) | Family (13/16) | 4-12 years old (approximately 54%) 25-64 years old (approximately 38%) 65+ years old (approximately 8%) | Female (2), Male (5) Female (4), Male (1) Female (1) | |
| | - Running and playing, using open area (17.01, approximately 14%, 12/86) | Family (12/12) | 4-12 years old (approximately 33%) 13-18 years old (approximately 8%) 25-64 years old (approximately 59%) | Female (2), Male (2) Female (1) Female (6), Male (1) | |
| | 16:00 Staying-in | - Sitting with a pram (08.01, approximately 19%, 18/94) | Family (16/18) | 0-3 years old (approximately 31%) 4-12 years old (approximately 13%) 25-64 years old (approximately 31%) 65+ years old (approximately 25%) | Female (3), Male (2) Female (2) Female (3), Male (2) Female (3), Male (1) |
| - Strolling with a pram (08.01, approximately 18%, 17/94) | | Family (17/17) | 0-3 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (3-6), Male (1-2) Female (3-7), Male (2-3) | |
| - Sitting and watching (people, plants or sculptures) (08.01, approximately 15%, 14/94) | | Single (11/14) | 25-64 years old (approximately 64%) 65+ years old (approximately 36%) | Female (2), Male (5) Female (2), Male (2) | |

Table 1.1 The summary of the main usage and their users in Hero Square - weekdays

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|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------|
| 16:00 Staying-in | - Strolling with a pram (10.01, approximately 14%, 13/95) | Family (13/13) | 0-3 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (3-5), Male (1-2) Female (3-6), Male (1-3) | |
| | - Sitting with a pram (10.01, approximately 12%, 11/95) | Family (11/11) | 0-3 years old (approximately 36%) 4-12 years old (approximately 9%) 25-64 years old (approximately 55%) | Female (3), Male (1) Female (1) Female (5), Male (1) | |
| | - Sitting and watching (people, plants or sculptures) (10.01, approximately 12%, 11/95) | Single (7/11) | 13-18 years old (approximately 14%) 25-64 years old (approximately 72%) 65+ years old (approximately 14%) | Male (1) Male (5) Male (1) | |
| | - Running and playing, using open area (15.01, approximately 33%, 39/120) | Family (39/39) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (5-10), Male (5-9) Female (6-12), Male (6-9) | |
| | - Sitting and watching (people, plants or sculptures) (15.01, approximately 12%, 14/120) | Single (12/14) | 4-12 years old (approximately 17%) 19-24 years old (approximately 8%) 25-64 years old (approximately 67%) 65+ years old (approximately 8%) | Female (2) Male (1) Female (1), Male (7) Male (1) | |
| | - Sitting with a pram (15.01, approximately 8%, 10/120) | Family (10/10) | 0-3 years old (approximately 40%) 25-64 years old (approximately 60%) | Female (3), Male (1) Female (5), Male (1) | |
| | - Running and playing, using open area (17.01, approximately 30%, 34/112) | Family (34/34) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (8-14), Male (2-3) Female (10-16), Male (2-4) | |
| | - Rehearsing collective activity (17.01, approximately 18%, 20/112) | Friends (20/20) | 19-24 years old (100%) | Female (7), Male (13) | |
| | - Playing with a ball (17.01, approximately 10%, 11/112) | Friends (11/11) | 13-18 years old (100%) | Male (11) | |
| | 17:00 Staying-in | - Sitting with a pram (08.01, approximately 29%, 24/83) | Family (24/24) | 0-3 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (5-9), Male (1-3) Female (6-10), Male (2-3) |
| - Strolling with a pram (08.01, approximately 11%, 9/83) | | Family (9/9) | 0-3 years old (approximately 44%) 25-64 years old (approximately 44%) 65+ years old (approximately 12%) | Female (3), Male (1) Female (2), Male (2) Male (1) | |
| - Running and playing, using open area (08.01, approximately 10%, 8/83) | | Family (8/8) | 0-3 years old (approximately 25%) 4-12 years old (approximately 13%) 25-64 years old (approximately 62%) | Male (2) Female (1) Female (3), Male (2) | |

Table 1.1 The summary of the main usage and their users in Hero Square - weekdays

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|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------|
| 17:00 Staying-in | - Running and playing, using open area (10.01, approximately 26%, 28/109) | Family (28/28) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (5-6), Male (5-7) Female (6-7), Male (6-8) | |
| | - Strolling with a pram (10.01, approximately 13%, 14/109) | Family (14/14) | 0-3 years old (approximately 36%) 4-12 years old (approximately 7%) 25-64 years old (approximately 57%) | Female (3), Male (2) Male (1) Female (6), Male (2) | |
| | - Sitting with a pram (10.01, approximately 10%, 11/109) | Family (11/11) | 0-3 years old (approximately 36%) 25-64 years old (approximately 64%) | Female (4) Female (5), Male (2) | |
| | - Running and playing, using open area (15.01, approximately 34%, 47/140) | Family (47/47) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (12-16), Male (4-6) Female (15-19), Male (5-7) | |
| | - Playing around on bicycle (15.01, approximately 11%, 16/140) | Family (16/16) | 4-12 years old (approximately 38%) 25-64 years old (approximately 56%) 65+ years old (approximately 6%) | Female (3), Male (3) Female (6), Male (3) Male (1) | |
| | - Skateboarding (15.01, approximately 11%, 16/140) | Single (13/16) | 13-17 years old (approximately 15%) 18-24 years old (approximately 85%) | Male (2) Female (2), Male (9) | |
| | - Running and playing, using open area (17.01, approximately 35%, 46/131) | Family (46/46) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (8-12), Male (7-10) Female (10-14), Male (8-12) | |
| | - Rehearsing collective activity (17.01, approximately 15%, 20/131) | Friends (20/20) | 19-24 years old (100%) | Female (5), Male (15) | |
| | - Playing around on bicycle (17.01, approximately 11%, 14/131) | Family (14/14) | 4-12 years old (approximately 50%) 13-18 years old (approximately 7%) 25-64 years old (approximately 43%) | Female (5), Male (2) Male (1) Female (5), Male (1) | |
| | 18:00 Staying-in | - Running and playing, using open area (08.01, approximately 17%, 8/47) | Family (8/8) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (1-3), Male (1-2) Female (1-3), Male (1-2) |
| - Playing around on bicycle (08.01, approximately 11%, 5/47) | | Single (3/5) | 13-18 years old (100%) | Male (3) | |
| - Skateboarding (08.01, approximately 11%, 5/47) | | Single (3/5) | 13-18 years old (approximately 67%) 19-24 years old (approximately 33%) | Male (2) Male (1) | |
| - Running and playing, using open area (10.01, approximately 18%, 13/72) | | Family (13/13) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (1-4), Male (1-2) Female (2-5), Male (1-3) | |
| - Rollerblading (10.01, approximately 15%, 11/72) | | Single (9/11) | 4-12 years old (approximately 11%) 13-18 years old (approximately 11%) 19-24 years old (approximately 78%) | Female (1) Female (1) Female (7) | |
| - Sitting and watching (people, plants or sculptures) (10.01, approximately 14%, 10/72) | Single (6/10) | 25-64 years old (100%) | Female (4), Male (2) | | |

Table 1.1 The summary of the main usage and their users in Hero Square - weekdays

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|------------------|---------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------|
| 18:00 Staying-in | - Skateboarding (15.01, approximately 17%, 17/98) | Single (17/17) | 13-18 years old (approximately 29%) 19-24 years old (approximately 71%) | Male (5) Female (1), Male (11) | |
| | - Sitting and chatting (15.01, approximately 16%, 16/98) | Friends (8/16) | 25-64 years old (100%) | Female (6), Male (2) | |
| | - Running and playing, using open area (15.01, approximately 14%, 14/98) | Family (14/14) | 0-3 years old (approximately 14%) 4-12 years old (approximately 36%) 25-64 years old (approximately 50%) | Male (2) Female (5) Female (6), Male (1) | |
| | - Running and playing, using open area (17.01, approximately 29%, 12/41) | Family (12/12) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (1-3), Male (1-2) Female (2-4), Male (1-3) | |
| | - Sitting and chatting (17.01, approximately 15%, 6/41) | Couple (4/6) | 19-24 years old (approximately 50%) 25-64 years old (approximately 50%) | Female (1), Male (1) Female (1), Male (1) | |
| | - Rollerblading (17.01, approximately 15%, 6/41) | Single (3/6) | 19-24 years old (100%) | Male (3) | |
| 19:00 Staying-in | - Sitting and chatting (08.01, approximately 34%, 16/47) | Friends (8/16) | 25-64 years old (approximately 80%) | Female (2-3), Male (4-5) | - Sitting and chatting |
| | - Strolling with a pram (08.01, approximately 19%, 9/47) | Family (9/9) | 0-3 years old (approximately 33%) 4-12 years old (approximately 22%) 25-64 years old (approximately 45%) | Female (2), Male (1) Male (2) Female (3), Male (1) | - Strolling with a pram |
| | - Sitting and watching (people or plants) (08.01, approximately 11%, 5/47) | Single (5/5) | 25-64 years old (100%) | Male (5) | - Rollerblading |
| | - Rollerblading (10.01, approximately 24%, 14/58) | Family (7/14) | 4-12 years old (approximately 72%) 25-64 years old (approximately 14%) 65+ years old (approximately 14%) | Female (3), Male (2) Male (1) Female (1) | - Skateboarding |
| | - Skateboarding (10.01, approximately 16%, 9/58) | Single (9/9) | 13-18 years old (approximately 56%) 19-24 years old (approximately 44%) | Male (5) Male (4) | - Running and playing, using open area |
| | - Standing and watching (people and plants) (10.01, approximately 12%, 7/58) | Single (5/7) | 25-64 years old (100%) | Female (4), Male (4) | |
| | - Sitting and chatting (15.01, approximately 20%, 11/54) | Family (6/11) | 4-12 years old (approximately 67%) 25-64 years old (approximately 33%) | Male (4) Female (2) | |
| | - Running and playing, using open area (15.01, approximately 19%, 10/54) | Family (10/10) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (1-2), Male (2-3) Female (1-2), Male (3-4) | |
| | - Skateboarding (15.01, approximately 17%, 9/54) | Single (9/9) | 13-18 years old (approximately 56%) 19-24 years old (approximately 44%) | Male (2) Male (7) | |
| | - Rollerblading (17.01, approximately 41%, 20/49) | Family (13/20) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (2-4), Male (1-2) Female (2-4), Male (1-2) | |
| | - Sitting and chatting (17.01, approximately 16%, 8/49) | Friends (6/8) | 25-64 years old (100%) | Male (6) | |
| | - Running and playing, using open area (17.01, approximately 16%, 8/49) | Friends (6/8) | 25-64 years old (100%) | Male (6) | |

Table 1.1 The summary of the main usage and their users in Hero Square - weekdays

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|------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------------|
| 20:00 Staying-in | - Square dancing (in group) (08.01, approximately 31%, 43/138) | Single (40/43) | 25-64 years old (approximately 80%) | Female (24-30), Male (8-10) | - Square dancing (in group) - Standing and watching (people) |
| | - Standing and watching (people) (08.01, approximately 29%, 40/138) | Single (31/40) | 25-64 years old (approximately 80%) | Female (7-9), Male (17-22) | |
| | - Sitting and watching (people) (08.01, approximately 7%, 10/138) | Single (8/10) | 19-24 years old (approximately 13%) 25-64 years old (approximately 74%) 65+ years old (approximately 13%) | Male (1) Female (3), Male (3) Female (1) | |
| | - Square dancing (in group) (10.01, approximately 52%, 113/218) | Single (109/113) | 25-64 years old (approximately 80%) | Female (68-86), Male (18-23) | |
| | - Standing and watching (people) (10.01, approximately 15%, 33/218) | Single (33/33) | 25-64 years old (approximately 80%) | Female (4-6), Male (21-27) | |
| | - Skateboarding (10.01, approximately 11%, 25/218) | Single (25/25) | 13-18 years old (approximately 32%) 19-24 years old (approximately 68%) | Male (8) Male (17) | |
| | - Square dancing (in group) (15.01, approximately 57%, 112/197) | Single (112/112) | 25-64 years old (approximately 80%) | Female (83-104), Male (6-8) | |
| | - Sitting and chatting (15.01, approximately 10%, 20/197) | Friends (12/20) | 25-64 years old (100%) | Female (6), Male (6) | |
| | - Running and playing, using open area (15.01, approximately 9%, 17/197) | Family (17/17) | 4-12 years old (approximately 29%) 25-64 years old (approximately 65%) 65+ years old (approximately 6%) | Female (5) Female (8), Male (3) Female (1) | |
| | - Square dancing (in group) (17.01, approximately 61%, 114/187) | Single (114/114) | 25-64 years old (approximately 80%) | Female (81-102), Male (9-12) | |
| | - Rollerblading (17.01, approximately 10%, 18/187) | Family (11/18) | 4-12 years old (approximately 64%) 25-64 years old (approximately 36%) | Female (7) Female (3), Male (1) | |
| | - Running and playing, using open area (17.01, approximately 5%, 10/187) | Family (10/10) | 0-3 years old (approximately 20%) 4-12 years old (approximately 40%) 25-64 years old (approximately 40%) | Female (2) Female (4) Female (4) | |
| 21:00 Staying-in | - Square dancing (in group) (08.01, approximately 66%, 208/317) | Single (208/208) | 25-64 years old (approximately 80%) | Female (150-192), Male (12-16) | - Square dancing (in group) |
| | - Standing and watching (people) (08.01, approximately 14%, 45/317) | Single (37/45) | 25-64 years old (approximately 80%) | Female (12-15), Male (17-22) | |
| | - Skateboarding (08.01, approximately 5%, 15/317) | Single (15/15) | 4-12 years old (approximately 7%) 13-18 years old (approximately 20%) 19-24 years old (approximately 73%) | Male (1) Male (3) Male (11) | |
| | - Square dancing (in group) (10.01, approximately 71%, 185/261) | Single (185/185) | 25-64 years old (approximately 80%) | Female (120-150), Male (28-35) | |
| | - Standing and watching (people) (10.01, approximately 9%, 23/261) | Single (18/23) | 25-64 years old (approximately 89%) 65+ years old (approximately 11%) | Female (12), Male (4) Male (2) | |
| - Skateboarding (10.01, approximately 7%, 18/261) | Single (15/18) | 13-18 years old (approximately 20%) 19-24 years old (approximately 80%) | Male (3) Male (12) | | |

Table 1.1 The summary of the main usage and their users in Hero Square - weekdays

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|----------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------------|----------------------------------------------------------------------------------|-----------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| 21:00 Staying-in | - Square dancing (in group) (15.01, approximately 71%, 202/286) | Single (200/202) | 25-64 years old (approximately 80%) | Female (139-174), Male (20-26) | | |
| | - Standing and watching (15.01, approximately 6%, 18/286) | Single (10/18) | 25-64 years old (100%) | Female (4), Male (6) | | |
| | - Skateboarding (15.01, approximately 5%, 14/286) | Single (14/14) | 19-24 years old (100%) | Female (3), Male (11) | | |
| | - Square dancing (in group) (17.01, approximately 66%, 176/268) | Single (174/176) | 25-64 years old (approximately 80%) | Female (111-139), Male (28-35) | | |
| | - Skateboarding (17.01, approximately 7%, 18/268) | Single (18/18) | 13-18 years old (approximately 11%) 19-24 years old (approximately 89%) | Male (2) Male (16) | | |
| - Sitting and chatting (17.01, approximately 6%, 17/268) | Friends (11/17) | 25-64 years old (100%) | Female (8), Male (3) | | | |
| 22:00 Staying-in (Except for: 17.01.2013 - similar) | - Square dancing (in group) (08.01, approximately 35%, 27/78) | Single (27/27) | 25-64 years old (approximately 80%) | Female (16-21), Male (4-6) | - Passing through on foot | |
| | - Skateboarding (08.01, approximately 19%, 15/78) | Single (13/15) | 13-18 years old (approximately 38%) 19-24 years old (approximately 62%) | Male (5) Male (8) | - Square dancing (in group) - Skateboarding - Sitting and chatting | |
| | - Standing and watching (people) (08.01, approximately 13%, 10/78) | Single (8/10) | 25-64 years old (100%) | Male (5) | | |
| | - Square dancing (in group) (10.01, approximately 40%, 37/93) | Single (37/37) | 25-64 years old (approximately 80%) | Female (24-31), Male (4-6) | | |
| | - Sitting and chatting (10.01, approximately 15%, 14/93) | Friends (8/14) | 25-64 years old (100%) | Female (2), Male (6) | | |
| | - Skateboarding (10.01, approximately 13%, 12/93) | Single (12/12) | 13-18 years old (approximately 17%) 19-24 years old (approximately 83%) | Male (2) Male (10) | | |
| | - Square dancing (in group) (15.01, approximately 46%, 45/97) | Single (45/45) | 25-64 years old (approximately 80%) | Female (30-38), Male (5-7) | | |
| | - Skateboarding (15.01, approximately 12%, 12/97) | Single (12/12) | 19-24 years old (100%) | Female (2), Male (10) | | |
| | - Sitting and chatting (15.01, approximately 12%, 12/97) | Couple (6/12) | 25-64 years old (100%) | Female (3), Male (3) | | |
| | - Skateboarding (17.01, approximately 16%, 6/37) | Single (6/6) | 19-24 years old (100%) | Male (6) | | |
| | - Sitting and chatting (17.01, approximately 14%, 5/37) | Friends (3/5) | 25-64 years old (100%) | Female (2), Male (1) | | |
| | - Standing and chatting (17.01, approximately 11%, 4/37) | Friends (2/4) | 25-64 years old (100%) | Male (2) | | |
| | 23:00 Staying-in | - Sitting and chatting (08.01, approximately 25%, 3/12) | Friends (3/3) | 25-64 years old (100%) | Female (1), Male (2) | - Sitting and chatting - Sitting and watching (people) - Skateboarding - Playing BMX acrobatics - Standing and chatting |
| | | - Sitting and watching (people) (08.01, approximately 17%, 2/12) | Single (2/2) | 25-64 years old (100%) | Male (2) | |
| - Skateboarding (08.01, approximately 17%, 2/12) | | Single (2/2) | 19-24 years old (100%) | Male (2) | | |
| - Playing BMX acrobatics (10.01, approximately 45%, 10/22) | | Friends (6/8) | 13-18 years old (100%) | Female (2), Male (4) | | |
| - Playing around on bicycle (10.01, approximately 9%, 2/22) | | Family (2/2) | 13-18 years old (approximately 50%) 25-64 years old (approximately 50%) | Male (1) Male (1) | | |
| - Square patrolling (10.01, approximately 9%, 2/22) | Single (2/2) | 25-64 years old (100%) | Male (2) | | | |

Table 1.1 The summary of the main usage and their users in Hero Square - weekdays

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|-----------------------------------------------------------------------|--------------------------------------------------------------|---------------|----------------------------------------------------------------------------------|----------------------------------|------------------------------------------------------------------|
| 23:00 Staying-in | - Standing and chatting (15.01, approximately 31%, 5/16) | Friends (3/5) | 25-64 years old (100%) | Male (3) | |
| | - Sitting and chatting (15.01, approximately 31%, 5/16) | Friends (3/5) | 25-64 years old (100%) | Male (3) | |
| | - Skateboarding (15.01, approximately 13%, 2/16) | Single (2/2) | 19-24 years old (100%) | Male (2) | |
| | - Sitting and chatting (17.01, approximately 44%, 8/18) | Couple (6/8) | 25-64 years old (100%) | Female (3), Male (3) | |
| | - Playing BMX acrobatics (17.01, approximately 17%, 3/18) | Single (3/3) | 13-18 years old (100%) | Male (3) | |
| | - Square patrolling (17.01, approximately 11%, 2/18) | Single (2/2) | 25-64 years old (100%) | Male (2) | |
| 24:00 Staying-in (Except for: 17.01.2013 - passing- through) | - Square patrolling (08.01, 100%, 2/2) | Single (2/2) | 25-64 years old (100%) | Male (2) | - Passing through on foot |
| | - Rollerblading (10.01, approximately 40%, 6/15) | Single (6/6) | 13-18 years old (approximately 50%) 19-24 years old (approximately 50%) | Male (3) Female (1), Male (2) | - Square patrolling - Rollerblading - Sitting and chatting |
| | - Sitting and chatting (10.01, approximately 33%, 5/15) | Friends (3/5) | 25-64 years old (100%) | Male (3) | |
| | - Square patrolling (10.01, approximately 13%, 2/15) | Single (2/2) | 25-64 years old (100%) | Male (2) | |
| | - Sitting and chatting (15.01, approximately 71%, 5/7) | Friends (5/5) | 25-64 years old (100%) | Male (5) | |
| | - Square patrolling (15.01, approximately 29%, 2/7) | Single (2/2) | 25-64 years old (100%) | Male (2) | |
| | | | | | |

Table 1.1 The summary of the main usage and their users in Hero Square - weekdays

| HERO SQUARE - WEEKENDS | | | | | | |
|------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Time | Passing-through Vs Staying-in | Top three main typical staying-in behaviours | Corresponding users by participating group | Corresponding users by age in the participating group | Corresponding users by gender in the participating group | Dominant behaviours |
| 07:00 | Staying-in (on 12.01.2013) Passing-through (on 19.01.2013) | - Doing exercises (morning) (02.02, approximately 69%, 11/16) - Square patrolling (02.02, approximately 13%, 2/16) - Sitting and watching (people, plants or sculptures) (02.02, approximately 13%, 2/16) | Single (11/11) Single (2/2) Single (2/2) | 65+ years old (100%) 25-64 years old (100%) 25-64 years old (approximately 50%) 65+ years old (approximately 50%) | Female (5), Male (6) Male (2) Male (1) Male (1) | - Passing through on foot - Doing exercises (morning) |
| 07:30 | Similar (on 12.01.2013) Passing-through (on 19.01.2013) | - Doing exercises (morning) (02.02, approximately 67%, 12/18) - Square patrolling (02.02, approximately 11%, 2/18) - Standing and watching (people, plants and sculpture) (02.02, approximately 11%, 2/18) | Single (12/12) Single (2/2) Single (2/2) | 65+ years old (100%) 25-64 years old (100%) 25-64 years old (100%) | Female (8), Male (4) Male (2) Male (2) | - Passing through on foot - Doing exercises (morning) |
| 08:00 | Passing-through | | | | | - Passing through on foot |
| 09:00 | Passing-through | | | | | - Passing through on foot |
| 10:00 | Staying-in | - Running and playing, using open area (02.02, approximately 23%, 18/80) - Strolling with a pram (02.02, approximately 10%, 8/80) - Playing around on bicycle (02.02, approximately 9%, 7/80) - Doing maintenance of square's facilities (temporary performance platform) (19.01, approximately 26%, 27/103) - Running and playing, using open area (19.01, approximately 19%, 20/103) - Rehearsing collective activity (19.01, approximately 12%, 12/103) | Family (18/18) Family (8/8) Family (7/7) Single (27/27) Family (20/20) Friends (12/12) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 0-3 years old (approximately 50%) 25-64 years old (approximately 50%) 4-12 years old (approximately 42%) 25-64 years old (approximately 29%) 65+ years old (approximately 29%) 25-64 years old (100%) 4-12 years old (approximately 25%) 25-64 years old (approximately 75%) 19-24 years old (100%) | Female (2-4), Male (3-5) Female (2-4), Male (4-6) Male (4) Male (4) Female (2), Male (1) Female (1), Male (1) Female (1), Male (1) Male (27) Male (5) Female (5), Male (10) Female (5), Male (7) | - Running and playing, using open area - Doing maintenance of square's facilities (temporary performance platform) |
| 11:00 | Staying-in | - Health consulting (special event) (02.02, approximately 33%, 57/172) - Running and playing, using open area (02.02, approximately 27%, 47/172) - Strolling with a pram (02.02, approximately 5%, 8/172) | Family (49/57) Family (47/47) Family (8/8) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 0-3 years old (approximately 28%) 4-12 years old (approximately 28%) 25-64 years old (approximately 43%) 65+ years old (approximately 2%) 0-3 years old (approximately 50%) 25-64 years old (approximately 50%) | Female (5-9), Male (10-15) Female (6-10), Male (12-17) Female (7), Male (6) Female (4), Male (9) Female (13), Male (7) Male (1) Female (2), Male (2) Female (1), Male (3) | - Health consulting (special event) - Running and playing, using open area - Doing maintenance of square's facilities (temporary performance platform) - Playing around on bicycle |

Table 1.2 The summary of the main usage and their users in Hero Square - weekends

| | | | | | |
|------------------|-------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:00 Staying-in | - Doing maintenance of square's facilities (temporary performance platform) (19.01, approximately 15%, 29/196) | Single (29/29) | 25-64 years old (100%) | Male (29) | |
| | - Running and playing, using open area (19.01, approximately 14%, 28/196) | Family (28/28) | 4-12 years old (approximately 50%) 25-64 years old (approximately 43%) 65+ years old (approximately 7%) | Female (8), Male (6) Female (9), Male (3) Female (1), Male (1) | |
| | - Playing around on bicycle (19.01, approximately 14%, 28/196) | Family (28/28) | 4-12 years old (approximately 32%) 25-64 years old (approximately 68%) | Female (4), Male (5) Female (6), Male (13) | |
| 12:00 Staying-in | - Running and playing, using open area (02.02, approximately 30%, 37/122) | Family (34/37) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (5-10), Male (3-5) Female (6-14), Male (3-6) | - Running and playing, using open area - Strolling with a pram - Rehearsing collective activity |
| | - Strolling with a pram (02.02, approximately 17%, 21/122) | Family (21/21) | 0-3 years old (approximately 48%) 25-64 years old (approximately 52%) | Female (8), Male (2) Female (9), Male (2) | |
| | - Sitting with a pram (02.02, approximately 13%, 16/122) | Family (16/16) | 0-3 years old (approximately 38%) 4-12 years old (approximately 13%) 25-64 years old (approximately 49%) | Female (4), Male (2) Female (1), Male (1) Female (5), Male (3) | |
| | - Running and playing, using open area (19.01, approximately 25%, 36/146) | Family (36/36) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (7-10), Male (6-8) Female (9-11), Male (7-10) | |
| | - Rehearsing collective activity (19.01, approximately 18%, 26/146) | Friends (26/26) | 19-24 years old (100%) | Female (12), Male (14) | |
| | - Strolling with a pram (19.01, approximately 9%, 13/146) | Family (13/13) | 0-3 years old (approximately 23%) 4-12 years old (approximately 15%) 25-64 years old (approximately 62%) | Female (3) Female (1), Male (1) Female (7), Male (1) | |
| 13:00 Staying-in | - Sitting and chatting (02.02, approximately 19%, 15/77) | Friends (10/15) | 25-64 years old (approximately 90%) 65+ years old (approximately 10%) | Female (5), Male (4) Female (1) | - Sitting and chatting - Doing maintenance of square's facilities (temporary performance platform) - Sitting with a pram - Rehearsing collective activity - Rollerblading - Running and playing, using open area |
| | - Running and playing, using open area (02.02, approximately 13%, 10/77) | Family (10/10) | 0-3 years old (approximately 10%) 4-12 years old (approximately 30%) 25-64 years old (approximately 60%) | Male (1) Female (1), Male (2) Female (5), Male (1) | |
| | - Rollerblading (02.02, approximately 12%, 9/77) | Family (9/9) | 0-3 years old (approximately 22%) 4-12 years old (approximately 45%) 25-64 years old (approximately 33%) | Female (1), Male (1) Female (3), Male (1) Female (2), Male (1) | |
| | - Doing maintenance of square's facilities (temporary performance platform) (19.01, approximately 24%, 13/55) | Single (13/13) | 25-64 years old (100%) | Male (13) | |
| | - Sitting with a pram (19.01, approximately 22%, 12/55) | Family (12/12) | 0-3 years old (approximately 50%) 25-64 years old (approximately 50%) | Female (4), Male (2) Female (1), Male (5) | |
| | - Rehearsing collective activity (19.01, approximately 15%, 8/55) | Friends (8/8) | 19-24 years old (100%) | Male (8) | |

93 Table 1.2 The summary of the main usage and their users in Hero Square - weekends

| | | | | | |
|------------------|----------------------------------------------------------------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 14:00 Staying-in | - Running and playing, using open area (02.02, approximately 20%, 21/103) | Family (21/21) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (2-5), Male (2-5) Female (3-6), Male (2-6) | - Running and playing, using open area - Sitting and chatting |
| | - Sitting with a pram (02.02, approximately 14%, 14/103) | Family (14/14) | 0-3 years old (approximately 29%) 4-12 years old (approximately 14%) 25-64 years old (approximately 57%) | Female (1), Male (3) Female (2) Female (8) | |
| | - Rollerblading (02.02, approximately 12%, 12/103) | Family (12/12) | 4-12 years old (approximately 41%) 13-18 years old (approximately 17%) 25-64 years old (approximately 42%) | Female (4), Male (1) Male (2) Female (5) | |
| | - Running and playing, using open area (19.01, approximately 23%, 35/151) | Family (35/35) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (5-10), Male (4-7) Female (5-10), Male (5-8) | |
| | - Sitting and chatting (19.01, approximately 18%, 27/151) | Couple (14/27) | 25-64 years old (100%) | Female (7), Male (7) | |
| | - Doing maintenance of square's facilities (19.01, approximately 12%, 18/151) | Single (18/18) | 25-64 years old (100%) | Male (18) | |
| 15:00 Staying-in | - Sitting with a pram (02.02, approximately 21%, 36/172) | Family (36/36) | 0-3 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (7-10), Male (3-7) Female (7-10), Male (4-7) | - Sitting with a pram - Running and playing, using open area - Sitting and chatting |
| | - Running and playing, using open area (02.02, approximately 17%, 29/172) | Family (29/29) | 0-3 years old (approximately 7%) 4-12 years old (approximately 41%) 25-64 years old (approximately 48%) 65+ years old (approximately 4%) | Female (1), Male (1) Female (3), Male (9) Female (8), Male (6) Male (1) | |
| | - Sitting and chatting (02.02, approximately 12%, 20/172) | Couple (10/20) | 25-64 years old (approximately 50%) 65+ years old (approximately 50%) | Female (4), Male (4) Female (1), Male (1) | |
| | - Sitting and chatting (19.01, approximately 19%, 42/218) | Couple (24/42) | 25-64 years old (100%) | Female (12), Male (12) | |
| | - Running and playing, using open area (19.01, approximately 17%, 36/218) | Family (36/36) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (4-7), Male (7-10) Female (5-8), Male (8-11) | |
| | - Sitting with a pram (19.01, approximately 14%, 30/218) | Family (30/30) | 0-3 years old (approximately 33%) 25-64 years old (approximately 63%) 65+ years old (approximately 4%) | Female (6), Male (4) Female (14), Male (5) Female (1) | |
| 16:00 Staying-in | - Rollerblading (02.02, approximately 18%, 38/206) | Family (37/38) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (8-15), Male (1-6) Female (10-16), Male (1-6) | - Rollerblading - Sitting and chatting - Running and playing, using open area |
| | - Sitting and chatting (02.02, approximately 17%, 35/206) | Friends (18/35) | 19-24 years old (approximately 7%) 25-64 years old (approximately 78%) 65+ years old (approximately 15%) | Male (1) Female (7), Male (7) Female (3) | |
| | - Strolling with a pram (02.02, approximately 11%, 23/206) | Family (23/23) | 0-3 years old (approximately 39%) 25-64 years old (approximately 61%) | Female (6), Male (3) Female (12), Male (2) | |

Table 1.2 The summary of the main usage and their users in Hero Square - weekends

| | | | | | |
|------------------|-------------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 16:00 Staying-in | - Running and playing, using open area (19.01, approximately 18%, 41/234) | Family (41/41) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (3-7), Male (8-13) Female (4-8), Male (10-15) | |
| | - Rollerblading (19.01, approximately 13%, 30/234) | Family (30/30) | 4-12 years old (approximately 33%) 25-64 years old (approximately 67%) | Female (5), Male (5) Female (15), Male (5) | |
| | - Sitting with a pram (19.01, approximately 10%, 24/234) | Family (24/24) | 0-3 years old (approximately 17%) 4-12 years old (approximately 17%) 25-64 years old (approximately 66%) | Female (2), Male (2) Female (2), Male (2) Female (10), Male (6) | |
| 17:00 Staying-in | - Running and playing, using open area (02.02, approximately 21%, 39/188) | Family (39/39) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (5-10), Male (4-9) Female (6-12), Male (5-9) | - Running and playing, using open area - Rollerblading - Sitting and chatting |
| | - Rollerblading (02.02, approximately 17%, 32/188) | Family (32/32) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (8-12), Male (2-6) Female (10-14), Male (3-6) | |
| | - Sitting with a pram (02.02, approximately 10%, 18/188) | Family (18/18) | 0-3 years old (approximately 33%) 25-64 years old (approximately 67%) | Female (4), Male (2) Female (7), Male (5) | |
| | - Running and playing, using open area (19.01, approximately 16%, 39/246) | Family (39/39) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (5-10), Male (4-9) Female (6-10), Male (5-10) | |
| | - Sitting and chatting (19.01, approximately 15%, 38/246) | Friends (20/38) | 25-64 years old (100%) | Female (9), Male (11) | |
| | - Skateboarding (19.01, approximately 10%, 25/246) | Single (20/25) | 19-24 years old (100%) | Male (20) | |
| 18:00 Staying-in | - Rollerblading (02.02, approximately 15%, 10/67) | Family (9/10) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (2-4), Male (0-1) Female (3-5), Male (0-1) | - Rollerblading - Skateboarding |
| | - Sitting and chatting (02.02, approximately 13%, 9/67) | Friends (7/9) | 13-18 years old (approximately 29%) 19-24 years old (approximately 29%) 25-64 years old (approximately 42%) | Female (2) Male (2) Female (2), Male (1) | |
| | - Skateboarding (02.02, approximately 13%, 9/67) | Single (6/9) | 19-24 years old (100%) | Male (6) | |
| | - Skateboarding (19.01, approximately 16%, 24/151) | Single (24/24) | 19-24 years old (approximately 80%) | Female (1-2), Male (17-22) | |
| | - Playing BMX acrobatics (19.01, approximately 11%, 17/151) | Single (17/17) | 13-18 years old (100%) | Female (1), Male (16) | |
| | - Rollerblading (19.01, approximately 11%, 16/151) | Family (16/16) | 4-12 years old (approximately 44%) 25-64 years old (approximately 56%) | Female (4), Male (3) Female (7), Male (2) | |
| 19:00 Staying-in | - Running and playing, using open area (02.02, approximately 33%, 16/49) | Family (16/16) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (2-3), Male (2-4) Female (3-4), Male (3-5) | - Running and playing, using open area - Sitting and watching (people, plants or sculptures) - Sitting and chatting - Skateboarding |
| | - Sitting and watching (people, plants or sculptures) (02.02, approximately 16%, 8/49) | Single (6/8) | 25-64 years old (100%) | Female (1), Male (5) | |
| | - Sitting and chatting (02.02, approximately 12%, 6/49) | Friends (3/6) | 19-24 years old (approximately 67%) 25-64 years old (approximately 33%) | Male (2) Male (1) | |

Table 1.2 The summary of the main usage and their users in Hero Square - weekends

| | | | | | |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 19:00 Staying-in | <ul style="list-style-type: none"> - Sitting and chatting (19.01, approximately 22%, 19/86) - Skateboarding (19.01, approximately 15%, 13/86) - Sitting and watching (people, plants or sculptures) (19.01, approximately 14%, 12/86) | <ul style="list-style-type: none"> Friends (11/19) Single (13/13) Single (8/12) | <ul style="list-style-type: none"> 25-64 years old (100%) 19-24 years old (100%) 25-64 years old (100%) | <ul style="list-style-type: none"> Female (5), Male (6) Female (3), Male (10) Female (1), Male (7) | |
| 20:00 Staying-in | <ul style="list-style-type: none"> - Square dancing (in group) (02.02, approximately 58%, 113/196) - Standing and watching (people) (02.02, approximately 14%, 28/196) - Street dancing (in group) (02.02, approximately 11%, 21/196) - Square dancing (in group) (19.01, approximately 47%, 105/225) - Rollerblading (19.01, approximately 9%, 21/225) - Skateboarding (19.01, approximately 8%, 17/225) | <ul style="list-style-type: none"> Single (111/113) Single (13/28) Friends (21/21) Single (103/105) Family (20/21) Single (16/17) | <ul style="list-style-type: none"> 25-64 years old (approximately 80%) 25-64 years old (100%) 13-18 years old (100%) 25-64 years old (approximately 80%) 0-3 years old (approximately 5%) 4-12 years old (approximately 50%) 25-64 years old (approximately 45%) 19-24 years old (100%) | <ul style="list-style-type: none"> Female (71-89), Male (17-22) Female (5), Male (8) Female (3), Male (18) Female (71-89), Male (11-14) Male (1) Female (8), Male (2) Female (7), Male (2) Male (16) | - Square dancing (in group) |
| 21:00 Staying-in | <ul style="list-style-type: none"> - Square dancing (in group) (02.02, approximately 57%, 183/320) - Standing and watching (people) (02.02, approximately 13%, 41/320) - Street dancing (in group) (02.02, approximately 7%, 21/320) - Square dancing (in group) (19.01, approximately 59%, 192/324) - Standing and watching (people) (19.01, approximately 8%, 26/324) - Running and playing, using open area (19.01, approximately 5%, 17/324) | <ul style="list-style-type: none"> Single (183/183) Single (35/41) Friends (21/21) Single (192/192) Single (19/26) Family (17/17) | <ul style="list-style-type: none"> 25-64 years old (approximately 80%) 25-64 years old (approximately 80%) 13-18 years old (100%) 25-64 years old (approximately 80%) 25-64 years old (100%) 0-3 years old (approximately 24%) 4-12 years old (approximately 24%) 25-64 years old (approximately 52%) | <ul style="list-style-type: none"> Female (120-151), Male (25-32) Female (10-13), Male (17-22) Female (4), Male (17) Female (140-176), Male (12-16) Female (11), Male (8) Female (1), Male (3) Female (3), Male (1) Female (6), Male (3) | - Square dancing (in group) |
| 22:00 Staying-in | <ul style="list-style-type: none"> - Running and playing, using open area (02.02, approximately 20%, 16/82) - Street dancing (in group) (02.02, approximately 17%, 14/82) - Skateboarding (02.02, approximately 13%, 11/82) - Square dancing (in group) (19.01, approximately 28%, 31/110) - Skateboarding (19.01, approximately 18%, 20/110) - Sitting and chatting (19.01, approximately 16%, 18/110) | <ul style="list-style-type: none"> Family (16/16) Friends (14/14) Single (11/11) Single (31/31) Single (20/20) Couple (10/18) | <ul style="list-style-type: none"> 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 13-18 years old (100%) 19-24 years old (100%) 25-64 years old (approximately 80%) 19-24 years old (100%) 25-64 years old (100%) | <ul style="list-style-type: none"> Female (1-2), Male (2-5) Female (1-2), Male (3-6) Female (3), Male (11) Female (3), Male (8) Female (18-23), Male (6-8) Female (2), Male (18) Female (10), Male (10) | <ul style="list-style-type: none"> - Running and playing, using open area - Street dancing (in group) - Square dancing (in group) - Skateboarding - Sitting and chatting |

Table 1.2 The summary of the main usage and their users in Hero Square - weekends

| | | | | | |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------|----------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| 23:00 Staying-in | - Street dancing (in group) (02.02, approximately 68%, 15/22) | Friends (15/15) | 13-18 years old (100%) | Female (4), Male (11) | - Street dancing (in group) - Playing BMX acrobatics - Skateboarding - Sitting and chatting |
| | - Square patrolling (02.02, approximately 9%, 2/22) | Single (2/2) | 25-64 years old (100%) | Male (2) | |
| | - Rollerblading (02.02, approximately 9%, 2/22) | Family (2/2) | 4-12 years old (approximately 50%) 25-64 years old (approximately 50%) | Female (1) Female (1) | |
| | - Playing BMX acrobatics (19.01, approximately 22%, 15/67) | Single (15/15) | 13-18 years old (approximately 90%) | Male (14-15) | |
| | - Skateboarding (19.01, approximately 21%, 14/67) | Single (14/14) | 19-24 years old (100%) | Female (10), Male (4) | |
| - Sitting and chatting (19.01, approximately 16%, 11/67) | Couple (4/11) | 25-64 years old (100%) | Female (2), Male (2) | | |
| 24:00 Staying-in | - Square patrolling (02.02, approximately 50%, 2/4) | Single (2/2) | 25-64 years old (100%) | Male (2) | - Square patrolling - Sitting and chatting - Playing BMX acrobatics - Using/playing with phone or personal business - Rollerblading |
| | - Using/playing with phone or personal business (02.02, approximately 25%, 1/4) | Single (1/1) | 25-64 years old (100%) | Male (1) | |
| | - Rollerblading (02.02, approximately 25%, 1/4) | Single (1/1) | 25-64 years old (100%) | Male (1) | |
| | - Playing BMX acrobatics (19.01, approximately 38%, 9/24) | Single (9/9) | 13-18 years old (approximately 44%) 19-24 years old (approximately 56%) | Male (4) Male (5) | |
| | - Rollerblading (19.01, approximately 21%, 5/24) | Single (5/5) | 13-18 years old (100%) | Female (2), Male (3) | |
| - Sitting and chatting (19.01, approximately 17%, 4/24) | Couple (4/4) | 25-64 years old (100%) | Female (2), Male (2) | | |

Table 1.2 The summary of the main usage and their users in Hero Square - weekends

**TABLES OF THE MAIN
USAGE AND THEIR USERS
- WATER FOUNTAIN SQUARE**

| WATER FOUNTAIN SQUARE - WEEKDAYS | | | | | | |
|---------------------------------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Time | Passing-through Vs Staying-in | Top three main typical staying-in behaviours | Corresponding users by participating group | Corresponding users by age in the participating group | Corresponding users by gender in the participating group | Dominant behaviours |
| 07:00 | Passing-through | | | | | - Passing through on foot |
| 07:30 | Passing-through | | | | | - Passing through on foot |
| 08:00 | Passing-through | | | | | - Passing through on foot |
| 09:00 | Passing-through | | | | | - Passing through on foot |
| 10:00 | Passing-through | | | | | - Passing through on foot |
| 11:00 | Staying-in (Except for: 31.01.2013 similar) | - Strolling with a pram (22.01, approximately 28%, 5/18) | Family (5/5) | 0-3 years old (approximately 40%) 25-64 years old (approximately 60%) | Female (2) Female (2), Male (1) | - Passing through on foot |
| | | - Sitting with a pram (22.01, approximately 22%, 4/18) | Family (4/4) | 0-3 years old (approximately 25%) 25-64 years old (approximately 75%) | Male (1) Female (1), Male (2) | - Strolling with a pram - Sitting with a pram - Running and playing, using open area - Doing maintenance of square's facilities |
| | | - Running and playing, using open area (22.01, approximately 22%, 4/18) | Family (4/4) | 4-12 years old (approximately 50%) 25-64 years old (approximately 50%) | Female (1), Male (1) Female (1), Male (1) | |
| | | - Running and playing, using open area (24.01, approximately 39%, 9/23) | Family (9/9) | 4-12 years old (approximately 50%) 25-64 years old (approximately 50%) | Female (1-3), Male (2-3) Female (1-2), Male (2-4) | |
| | | - Doing maintenance of square's facilities (24.01, approximately 17%, 4/23) | Single (4/4) | 25-64 years old (100%) | Male (4) | |
| | | - Strolling with a pram (24.01, approximately 17%, 4/23) | Family (4/4) | 0-3 years old (approximately 25%) 4-12 years old (approximately 25%) 25-64 years old (approximately 50%) | Male (1) Female (1) Female (1), Male (1) | |
| | | - Sitting with a pram (29.01, approximately 53%, 9/17) | Family (9/9) | 0-3 years old (approximately 50%) 25-64 years old (approximately 50%) | Female (2-3), Male (1-2) Female (2-4), Male (1-2) | |
| | | - Doing maintenance of square's facilities (29.01, approximately 18%, 3/17) | Single (3/3) | 25-64 years old (100%) | Male (3) | |
| | | - Sitting and chatting (29.01, approximately 12%, 2/17) | Couple (2/2) | 25-64 years old (100%) | Female (1), Male (1) | |
| | | - Sitting with a pram (31.01, approximately 93%, 13/14) | Family (13/13) | 0-3 years old (approximately 50%) 25-64 years old (approximately 50%) | Female (2-3), Male (1-3) Female (2-4), Male (2-4) | |
| - Square cleaning by sanitation worker (31.01, approximately 7%, 1/14) | Single (1/1) | 25-64 years old (100%) | Male (1) | | | |
| 12:00 | Passing-through | | | | | - Passing through on foot |
| 13:00 | Passing-through | | | | | - Passing through on foot |

Table 2.1 The summary of the main usage and their users in Water Fountain Square - weekdays

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| 14:00 | Passing-through (Except for: 31.01.2013 staying-in) | <ul style="list-style-type: none"> - Rehearsing collective activity (31.01, approximately 53%, 35/66) - Standing and chatting (31.01, approximately 12%, 8/66) - Running and playing with space (31.01, approximately 9%, 6/66) | <ul style="list-style-type: none"> Friends (20/35) Friends (8/8) Family (6/6) | <ul style="list-style-type: none"> 25-64 years old (100%) 25-64 years old (100%) 0-3 years old (approximately 17%) 4-12 years old (approximately 33%) 25-64 years old (approximately 50%) | <ul style="list-style-type: none"> Female (20) Female (5), Male (3) Female (1) Female (1), Male (1) Female (3) | <ul style="list-style-type: none"> - Passing through on foot - Rehearsing collective activity |
| 15:00 | Passing-through (Except for: 31.01.2013 staying-in) | <ul style="list-style-type: none"> - Rehearsing collective activity (31.01, approximately 63%, 42/66) - Sitting and watching (people or plants) (31.01, approximately 9%, 6/66) - Running and playing with space (31.01, approximately 6%, 4/66) | <ul style="list-style-type: none"> Friends (20/42) Single (6/6) Single (4/4) | <ul style="list-style-type: none"> 25-64 years old (100%) 25-64 years old (100%) 0-3 years old (approximately 50%) 4-12 years old (approximately 25%) 25-64 years old (approximately 25%) | <ul style="list-style-type: none"> Female (20) Female (2), Male (4) Female (1), Male (1) Male (1) Female (1) | <ul style="list-style-type: none"> - Passing through on foot - Rehearsing collective activity |
| 16:00 | Similar | <ul style="list-style-type: none"> - Running and playing, using open area (22.01, approximately 60%, 26/43) - Sitting and chatting (22.01, approximately 12%, 5/43) - Sitting with a pram (22.01, approximately 5%, 4/43) - Running and playing, using open area (24.01, approximately 35%, 15/43) - Standing and chatting (24.01, approximately 14%, 6/43) - Sitting with a pram (24.01, approximately 12%, 5/43) - Sitting and watching (people or plants) (29.01, approximately 28%, 12/43) - Running and playing, using open area (29.01, approximately 26%, 11/43) - Sitting with a pram (29.01, approximately 14%, 6/43) | <ul style="list-style-type: none"> Family (26/26) Friends (5/5) Family (4/4) Family (15/15) Friends (2/6) Family (5/5) Family (10/12) Family (11/11) Family (6/6) | <ul style="list-style-type: none"> 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 25-64 years old (100%) 0-3 years old (approximately 50%) 25-64 years old (approximately 50%) 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 25-64 years old (100%) 0-3 years old (approximately 40%) 25-64 years old (approximately 40%) 65+ years old (approximately 20%) 4-12 years old (approximately 60%) 25-64 years old (approximately 40%) 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 0-3 years old (approximately 33%) 25-64 years old (approximately 67%) | <ul style="list-style-type: none"> Female (2-8), Male (3-5) Female (3-10), Male (4-6) Female (3), Male (2) Female (1), Male (1) Female (1), Male (1) Female (1-2), Male (3-5) Female (1-3), Male (4-6) Female (1), Male (1) Female (2) Female (2) Female (1) Female (3), Male (3) Female (3), Male (1) Female (1-2), Male (1-3) Female (1-3), Male (2-4) Female (2) Female (2), Male (2) | <ul style="list-style-type: none"> - Passing through on foot - Running and playing, using open area - Sitting and watching (people or plants) - Sitting and chatting |

Table 2.1 The summary of the main usage and their users in Water Fountain Square - weekdays

| | | | | | | |
|---------------------|------------|-----------------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| 16:00 | Similar | - Running and playing, using open area (31.01, approximately 32%, 15/47) | Family (15/15) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (1-2), Male (3-5) Female (1-3), Male (4-6) | |
| | | - Sitting and chatting (31.01, approximately 21%, 10/47) | Family (4/10) | 25-64 years old (100%) | Female (1), Male (3) | |
| | | - Sitting with a pram (31.01, approximately 11%, 5/47) | Family (5/5) | 0-3 years old (approximately 40%) 25-64 years old (approximately 40%) 65+ years old (approximately 20%) | Female (2) Female (2) Female (1) | |
| 16:05 - 16:15 | Staying-in | - Standing and watching (performance of music fountain) (22.01, approximately 48%, 81/168) | Friends (25/81) | 19-24 years old (approximately 20%) 25-64 years old (approximately 80%) | Female (1-2), Male (2-4) Female (5-7), Male (12-16) | - Standing and watching (performance of music fountain) |
| | | - Sitting and watching (performance of music fountain) (22.01, approximately 29%, 48/168) | Friends (20/48) | 25-64 years old (approximately 90%) | Female (10-12), Male (7-8) | - Sitting and watching (performance of music fountain) |
| | | - Taking personal photos (22.01, approximately 13%, 22/168) | Friends (9/22) | 25-64 years old (approximately 56%) | Female (3), Male (6) | |
| | | - Sitting and watching (performance of music fountain) (24.01, approximately 61%, 94/154) | Friends (30/94) | 25-64 years old (approximately 80%) | Female (13-17), Male (10-13) | |
| | | - Standing and watching (performance of music fountain) (24.01, approximately 25%, 38/154) | Family (13/38) | 19-24 years old (approximately 40%) 25-64 years old (approximately 60%) | Female (2-4), Male (2-4) Female (4-7), Male (4-7) | |
| | | - Taking personal photos (24.01, approximately 6%, 10/154) | Friends (7/10) | 25-64 years old (100%) | Female (4), Male (3) | |
| | | - Sitting and watching (performance of music fountain) (29.01, approximately 60%, 89/149) | Family (32/89) | 4-12 years old (approximately 40%) 25-64 years old (approximately 60%) | Female (5-8), Male (3-8) Female (7-9), Male (4-9) | |
| | | - Standing and watching (performance of music fountain) (29.01, approximately 26%, 38/149) | Friends (11/38) | 13-18 years old (approximately 18%) 19-24 years old (approximately 18%) 25-64 years old (approximately 64%) | Male (2) Female (2) Female (4), Male (3) | |
| | | - Taking personal photos (29.01, approximately 7%, 10/149) | Friends (7/10) | 13-18 years old (approximately 29%) 25-64 years old (approximately 71%) | Female (2) Female (2), Male (3) | |
| | | - Sitting and watching (performance of music fountain) (31.01, approximately 47%, 68/144) | Family (31/68) | 4-12 years old (approximately 40%) 25-64 years old (approximately 60%) | Female (3-8), Male (3-8) Female (4-9), Male (4-9) | |
| | | - Standing and watching (performance of music fountain) (31.01, approximately 38%, 54/144) | Family (32/54) | 0-3 years old (approximately 3%) 4-12 years old (approximately 28%) 13-18 years old (approximately 6%) 19-24 years old (approximately 6%) 25-64 years old (approximately 57%) | Female (1) Female (4), Male (5) Female (1), Male (1) Male (2) Female (10), Male (8) | |
| | | - Taking personal photos (31.01, approximately 5%, 7/144) | Friends (4/7) | 25-64 years old (100%) | Female (2), Male (2) | |

Table 2.1 The summary of the main usage and their users in Water Fountain Square - weekdays

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| 16:20 | Passing-through (Except for 24.01.2013 staying- in) | <ul style="list-style-type: none"> - Running and playing, using open area (24.01, approximately 33%, 14/42) - Sitting and watching (people or plants) (24.01, approximately 21%, 9/42) - Strolling with a pram (24.01, approximately 14%, 6/42) | <ul style="list-style-type: none"> Family (14/14) Single (6/9) Family (6/6) | <ul style="list-style-type: none"> 4-12 years old (approximately 40%) 25-64 years old (approximately 60%) 25-64 years old (100%) 0-3 years old (approximately 50%) 25-64 years old (approximately 50%) | <ul style="list-style-type: none"> Female (2-4), Male (2-4) Female (2-5), Male (2-5) Female (3), Male (3) Male (3) Female (1), Male (2) | <ul style="list-style-type: none"> - Passing through on foot - Running and playing, using open area - Sitting and watching (people or plants) - Strolling with a pram |
| 17:00 | Passing-through | | | | | <ul style="list-style-type: none"> - Passing through on foot |
| 18:00 | Passing-through | | | | | <ul style="list-style-type: none"> - Passing through on foot |
| 19:00 | Passing-through | | | | | <ul style="list-style-type: none"> - Passing through on foot |
| 20:00 | Staying-in | <ul style="list-style-type: none"> - Running and playing, using open area (22.01, approximately 41%, 24/59) - Sitting and chatting (22.01, approximately 32%, 19/59) - Sitting and watching (people) (22.01, approximately 14%, 8/59) - Running and playing, using open area (24.01, approximately 33%, 24/72) - Sitting and chatting (24.01, approximately 32%, 23/72) - Sitting and watching (people) (24.01, approximately 15%, 11/72) - Running and playing, using open area (29.01, approximately 32%, 21/66) - Sitting and chatting (29.01, approximately 29%, 19/66) - Sitting and watching (people) (29.01, approximately 18%, 12/66) - Running and playing, using open area (31.01, approximately 35%, 19/55) - Sitting and chatting (31.01, approximately 22%, 12/55) - Standing and chatting (31.01, approximately 18%, 10/55) | <ul style="list-style-type: none"> Family (24/24) Friends (10/19) Couple (4/8) Family (24/24) Friends (12/23) Single (4/11) Family (21/21) Friends (12/19) Friends (4/12) Family (19/19) Couple (12/26) Friends (3/10) | <ul style="list-style-type: none"> 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 25-64 years old (approximately 90%) 25-64 years old (100%) 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 25-64 years old (100%) 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 25-64 years old (100%) 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 19-24 years old (approximately 35%) 25-64 years old (approximately 65%) 25-64 years old (approximately 80%) | <ul style="list-style-type: none"> Female (5-7), Male (3-5) Female (5-8), Male (4-6) Female (6-7), Male (2-3) Female (2), Male (2) Female (5-7), Male (3-4) Female (5-8), Male (3-5) Female (7), Male (5) Male (4) Female (5-6), Male (3-4) Female (5-7), Male (3-5) Female (6-7), Male (4-5) Male (4) Female (3-6), Male (3-4) Female (4-6), Male (3-5) Female (6), Male (6) Male (3) Female (10-17), Male (9-14) Female (12-18), Male (10-15) Female (8-12), Male (9-13) Female (15-22), Male (17-23) Female (4-5), Male (4-6) | <ul style="list-style-type: none"> - Running and playing, using open area - Sitting and chatting - Sitting and watching (people) Standing and chatting - Running and playing, using open area - Sitting and chatting - Sitting and watching (people) - Running and playing, using open area - Sitting and chatting - Sitting and watching (people) - Standing and chatting - Sitting and watching (performance of music fountain) - Standing and watching (performance of music fountain) - Taking personal photos - Sitting and watching (performance of music fountain) - Standing and watching (performance of music fountain) |
| 20:05 - 20:15 | Staying-in | <ul style="list-style-type: none"> - Sitting and watching (performance of music fountain) (22.01, approximately 50%, 176/350) - Standing and watching (performance of music fountain) (22.01, approximately 35%, 121/350) - Taking personal photos (22.01, approximately 7%, 23/350) | <ul style="list-style-type: none"> Family (63/176) Friends (51/121) Friends (11/23) | <ul style="list-style-type: none"> 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 19-24 years old (approximately 35%) 25-64 years old (approximately 65%) 25-64 years old (approximately 80%) | <ul style="list-style-type: none"> Female (10-17), Male (9-14) Female (12-18), Male (10-15) Female (8-12), Male (9-13) Female (15-22), Male (17-23) Female (4-5), Male (4-6) | <ul style="list-style-type: none"> - Sitting and watching (performance of music fountain) - Standing and watching (performance of music fountain) |

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| | | | | | |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------|
| 20:05 - Staying-in 20:15 | - Sitting and watching (performance of music fountain) (24.01, approximately 47%, 164/350) | Friends (64/164) | 25-64 years old (approximately 80%) | Female (21-27), Male (29-37) | |
| | - Standing and watching (performance of music fountain) (24.01, approximately 40%, 139/350) | Friends (48/139) | 19-24 years old (approximately 35%) 25-64 years old (approximately 65%) | Female (3-7), Male (8-12) Female (10-14), Male (20-24) | |
| | - Taking personal photos (24.01, approximately 7%, 25/350) | Friends (16/25) | 25-64 years old (approximately 80%) | Female (8-10), Male (4-6) | |
| | - Sitting and watching (performance of music fountain) (29.01, approximately 54%, 195/363) | Friends (74/195) | 25-64 years old (approximately 80%) | Female (30-38), Male (28-36) | |
| | - Standing and watching (performance of music fountain) (29.01, approximately 34%, 125/363) | Friends (44/125) | 13-18 years old (approximately 9%) 19-24 years old (approximately 9%) 25-64 years old (approximately 82%) | Male (4) Male (4) Female (10), Male (26) | |
| | - Taking personal photos (29.01, approximately 4%, 13/363) | Single (9/13) | 25-64 years old (100%) | Female (1), Male (8) | |
| | - Sitting and watching (performance of music fountain) (31.01, approximately 51%, 176/346) | Friends (71/176) | 25-64 years old (approximately 80%) | Female (31-39), Male (25-32) | |
| | - Standing and watching (performance of music fountain) (31.01, approximately 38%, 132/346) | Friends (45/132) | 19-24 years old (approximately 22%) 25-64 years old (approximately 78%) | Female (4), Male (6) Female (13), Male (22) | |
| | - Taking personal photos (31.01, approximately 6%, 20/346) | Single (10/20) | 25-64 years old (approximately 80%) | Male (10) | |
| | 20:20 Passing-through | | | | - Passing through on foot |
| 21:00 Passing-through | | | | - Passing through on foot | |
| 21:05 - Staying-in 21:15 | - Sitting and watching (performance of music fountain) (22.01, approximately 54%, 103/191) | Family (44/103) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (6-12), Male (8-10) Female (6-13), Male (10-12) | - Sitting and watching (performance of music fountain) |
| | - Standing and watching (performance of music fountain) (22.01, approximately 27%, 51/191) | Friends (17/51) | 19-24 years old (approximately 35%) 25-64 years old (approximately 65%) | Female (2-4), Male (3-5) Female (4-6), Male (8-11) | - Standing and watching (performance of music fountain) |
| | - Taking personal photos (22.01, approximately 12%, 23/191) | Couple (17/23) | 19-24 years old (approximately 35%) 25-64 years old (approximately 65%) | Female (2-4), Male (3-5) Female (4-6), Male (8-11) | |
| | - Sitting and watching (performance of music fountain) (24.01, approximately 52%, 102/195) | Friends (39/102) | 25-64 years old (approximately 70%) | Female (17-25), Male (10-14) | |
| | - Standing and watching (performance of music fountain) (24.01, approximately 43%, 83/195) | Friends (19/83) | 19-24 years old (approximately 25%) 25-64 years old (approximately 65%) | Male (2) Female (2), Male (15) | |
| | - Sitting and watching (performance of music fountain) (24.01, approximately 3%, 6/195) | Friends (4/6) | 25-64 years old (100%) | Female (2), Male (2) | |
| | - Sitting and watching (performance of music fountain) (29.01, approximately 64%, 116/182) | Family (40/116) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (6-8), Male (8-12) Female (6-9), Male (10-14) | |
| | - Standing and watching (performance of music fountain) (29.01, approximately 26%, 48/182) | Friends (19/48) | 19-24 years old (approximately 35%) 25-64 years old (approximately 65%) | Female (5-8), Male (3-6) Female (12-15), Male (7-10) | |
| - Sitting and chatting (29.01, approximately 3%, 6/182) | Couple (4/6) | 25-64 years old (100%) | Female (2), Male (2) | | |

Table 2.1 The summary of the main usage and their users in Water Fountain Square - weekdays

| | | | | | | |
|---------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| 21:05 - 21:15 | Staying-in | <ul style="list-style-type: none"> - Sitting and watching (performance of music fountain) (31.01, approximately 60%, 120/200) - Standing and watching (performance of music fountain) (31.01, approximately 34%, 68/200) - Taking personal photos (31.01, approximately 4%, 7/200) | <ul style="list-style-type: none"> Family (43/120) Couple (24/68) Single (7/7) | <ul style="list-style-type: none"> 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 19-24 years old (approximately 20%) 25-64 years old (approximately 80%) 25-64 years old (100%) | <ul style="list-style-type: none"> Female (6-9), Male (8-12) Female (8-11), Male (10-14) Female (2-4), Male (2-4) Female (8-12), Male (8-12) Female (4), Male (3) | |
| 21:20 | Passing-through | | | | | - Passing through on foot |
| 22:00 | Passing-through (Except for: 29.01.2013 similar) | <ul style="list-style-type: none"> - Playing BMX acrobatics (29.01, approximately 35%, 6/17) - Sitting and chatting (29.01, approximately 24%, 4/17) - Sitting and watching (people) (29.01, approximately 12%, 2/17) | <ul style="list-style-type: none"> Friends (6/6) Friends (4/4) Single (2/2) | <ul style="list-style-type: none"> 13-18 years old (100%) 25-64 years old (100%) 25-64 years old (100%) | <ul style="list-style-type: none"> Female (1), Male (5) Male (4) Male (2) | <ul style="list-style-type: none"> - Passing through on foot - Playing BMX acrobatics - Sitting and chatting |
| 23:00 | Passing-through | | | | | - Passing through on foot |
| 24:00 | Passing-through | | | | | - Passing through on foot |

Table 2.1 The summary of the main usage and their users in Water Fountain Square - weekdays

| WATER FOUNTAIN SQUARE - WEEKENDS | | | | | | |
|----------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Time | Passing-through Vs Staying-in | Top three main typical staying-in behaviours | Corresponding users by participating group | Corresponding users by age in the participating group | Corresponding users by gender in the participating group | Dominant behaviours |
| 07:00 | Passing-through | | | | | - Passing through on foot |
| 07:30 | Passing-through | | | | | - Passing through on foot |
| 08:00 | Passing-through | | | | | - Passing through on foot |
| 09:00 | Passing-through (on 26.01.2013) Similar (on 02.02.2013) | - Doing maintenance of square's facilities (temporary sculpture of lightings) (02.02, approximately 50%, 3/6) - Using/playing with phone or personal business (02.02, approximately 17%, 1/6) - Sitting and watching (people) (02.02, approximately 17%, 1/6) | Single (3/3) Single (1/1) Single (1/1) | 25-64 years old (100%) 25-64 years old (100%) 25-64 years old (100%) | Male (3) Male (1) Male (1) | - Passing through on foot - Doing maintenance of square's facilities (temporary sculpture of lightings) |
| 10:00 | Passing-through (on 26.01.2013) Staying-in (on 02.02.2013) | - Doing maintenance of square's facilities (temporary sculpture of lightings) (02.02, approximately 50%, 13/26) - Sitting and watching (people or plants) (02.02, approximately 12%, 3/26) - Standing and watching (people or plants) (02.02, approximately 12%, 3/26) | Single (13/13) Family (3/3) Family (3/3) | 25-64 years old (100%) 4-12 years old (approximately 33%) 25-64 years old (approximately 67%) 4-12 years old (approximately 33%) 25-64 years old (approximately 67%) | Female (2), Male (11) Male (1) Female (1), Male (1) Male (1) Female (1), Male (1) | - Passing through on foot - Doing maintenance of square's facilities (temporary sculpture of lightings) |
| 11:00 | Staying-in (on 26.01.2013) Passing-through (on 02.02.2013) | - Taking group photos (26.01, approximately 81%, 30/37) - Strolling with a pram (26.01, approximately 8%, 3/37) - Sitting and chatting (26.01, approximately 5%, 2/37) | Friends (30/30) Family (3/3) Friends (2/2) | 25-64 years old (100%) 0-3 years old (approximately 33%) 25-64 years old (approximately 67%) 25-64 years old (100%) | Female (9), Male (21) Female (1) Female (1), Male (1) Male (2) | - Passing through on foot - Taking group photos |
| 12:00 | Passing-through | | | | | - Passing through on foot |
| 13:00 | Passing-through | | | | | - Passing through on foot |
| 14:00 | Passing-through | | | | | - Passing through on foot |
| 15:00 | Passing-through | | | | | - Passing through on foot |
| 16:00 | Passing-through (26.01.2013, few users due to the rain) Similar (02.02.2013) | - Running and playing, using open area (02.02, approximately 64%, 27/42) - Sitting and chatting (02.02, approximately 17%, 7/42) - Taking personal photos (02.02, approximately 10%, 4/42) | Family (27/27) Friends (5/7) Friends (4/4) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 25-64 years old (100%) 25-64 years old (100%) | Female (4-7), Male (4-6) Female (4-8), Male (4-7) Male (5) Female (2), Male (2) | - Passing through on foot - Running and playing, using open area - Sitting and chatting |
| 16:05 | Passing-through (26.01.2013, few users due to the rain) | - Standing and watching (performance of music fountain) (02.02, approximately 50%, 81/161) - Taking personal photos (02.02, approximately 16%, 26/161) | Friends (25/81) Friends (11/26) | 25-64 years old (approximately 80%) 19-24 years old (approximately 20%) 25-64 years old (approximately 80%) | Female (9-12), Male (10-13) Female (1-2), Male (1-2) Female (4-6), Male (3-5) | - Passing through on foot - Standing and watching (performance of music fountain) |
| 16:15 | Staying-in (02.02.2013) | - Sitting and watching (performance of music fountain) (02.02, approximately 15%, 24/161) | Family (8/24) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (1-3), Male (1-3) Female (2-4), Male (2-4) | - Taking personal photos - Sitting and watching (performance of music fountain) |

Table 2.2 The summary of the main usage and their users in Water Fountain Square - weekends

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|------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16:20 | Passing-through | | | | | - Passing through on foot |
| 17:00 | Passing-through | | | | | - Passing through on foot |
| 18:00 | Passing-through | | | | | - Passing through on foot |
| 19:00 | Passing-through (26.01.2013, few users due to the rain) Staying-in (02.02.2013) | - Sitting and chatting (02.02, approximately 33%, 18/54) - Running and playing, using open area (02.02, approximately 22%, 12/54) - Sitting and watching (people or plants) (02.02, approximately 15%, 8/54) | Friends (12/18) Family (12/12) Family (5/8) | 25-64 years old (100%) 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 4-12 years old (approximately 20%) 25-64 years old (approximately 80%) | Female (6), Male (6) Female (2-4), Male (1-2) Female (3-5), Male (2-3) Female (1) Female (4) | - Passing through on foot - Sitting and chatting - Running and playing, using open area - Sitting and watching (people or plants) |
| 20:00 | Passing-through (26.01.2013, few users due to the rain) Staying-in (02.02.2013) | - Sitting and chatting (02.02, approximately 28%, 17/61) - Sitting and watching (people) (02.02, approximately 26%, 16/61) - Running and playing, using open area (02.02, approximately 20%, 12/61) | Couple (14/17) Friends (7/16) Family (12/12) | 25-64 years old (100%) 25-64 years old (100%) 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (7), Male (7) Female (4), Male (3) Female (2-4), Male (1-2) Female (2-4), Male (1-2) | - Passing through on foot - Sitting and chatting - Sitting and watching (people) - Running and playing, using open area |
| 20:05 - 20:15 | Passing-through (26.01.2013, few users due to the rain) Staying-in (02.02.2013) | - Standing and watching (performance of music fountain) (02.02, approximately 51%, 190/376) - Sitting and watching (performance of music fountain) (02.02, approximately 41%, 155/376) - Taking personal photos (02.02, approximately 15%, 19/376) | Friends (66/190) Friends (66/155) Single (9/19) | 25-64 years old (approximately 80%) 25-64 years old (approximately 80%) 25-64 years old (approximately 80%) | Female (14-18), Male (38-48) Female (26-33), Male (26-33) Female (4-5), Male (3-4) | - Passing through on foot - Standing and watching (performance of music fountain) - Sitting and watching (performance of music fountain) - Taking personal photos |
| 20:20 | Passing-through (26.01.2013, few users due to the rain) Similar (02.02.2013) | - Running and playing, using open area (02.02, approximately 40%, 17/42) - Sitting and chatting (02.02, approximately 24%, 10/42) - Standing and chatting (02.02, approximately 10%, 4/42) | Family (17/17) Couple (10/10) Friends (2/4) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 19-24 years old (approximately 20%) 25-64 years old (approximately 80%) 25-64 years old (100%) | Female (2-4), Male (3-4) Female (2-4), Male (3-5) Female (1), Male (1) Female (4), Male (4) Male (2) | - Passing through on foot - Running and playing, using open area - Sitting and chatting |
| 21:00 | Passing-through | | | | | - Passing through on foot |
| 21:05 - 21:15 | Passing-through (26.01.2013, few users due to the rain) Staying-in (02.02.2013) | - Sitting and watching (performance of music fountain) (02.02, approximately 68%, 134/196) - Standing and watching (performance of music fountain) (02.02, approximately 15%, 30/196) - Taking personal photos (02.02, approximately 10%, 19/196) | Friends (40/134) Family (13/30) Friends (13/19) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 4-12 years old (approximately 40%) 25-64 years old (approximately 60%) 25-64 years old (approximately 80%) | Female (8-11), Male (8-11) Female (9-11), Male (9-11) Female (4) Female (2), Male (7) Female (4-5), Male (6-8) | - Passing through on foot - Sitting and watching (performance of music fountain) - Standing and watching (performance of music fountain) |
| 21:20 | Passing-through | | | | | - Passing through on foot |
| 22:00 | Passing-through (26.01.2013, few users due to the rain) Staying-in (02.02.2013) | - Sitting and chatting (02.02, approximately 70%, 16/23) - Standing and chatting (02.02, approximately 9%, 2/23) - Using/playing with phone or personal business (02.02, approximately 9%, 2/23) | Friends (6/16) Couple (2/2) Single (2/2) | 25-64 years old (100%) 25-64 years old (100%) 25-64 years old (100%) | Female (2), Male (4) Female (1), Male (1) Male (2) | - Passing through on foot - Sitting and chatting |

Table 2.2 The summary of the main usage and their users in Water Fountain Square - weekends

| | | | | | | |
|-------|---------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------|---------------------------|----------------------|---------------------------|
| 23:00 | Passing-through (26.01.2013, few users due to the rain) | - Sitting and chatting (02.02, approximately 67%, 4/6) | Couple (2/4) | 25-64 years old (100%) | Female (1), Male (1) | - Passing through on foot |
| | Staying-in (02.02.2013) | - Using/playing with phone or personal business (02.02, approximately 33%, 2/6) | Single (2/2) | 25-64 years old (100%) | Male (2) | - Sitting and chatting |
| 24:00 | Passing-through (26.01.2013, few users due to the rain) | - Sitting and chatting (02.02, approximately 57%, 4/7) | Couple (2/4) | 25-64 years old (100%) | Female (1), Male (1) | - Passing through on foot |
| | | - Using/playing with phone or personal business (02.02, approximately 29%, 2/7) | Single (2/2) | 25-64 years old (100%) | Male (2) | - Sitting and chatting |
| | Staying-in (02.02.2013) | - Sitting and watching (people) (02.02, approximately 14%, 1/7) | Single (1/1) | 25-64 years old (100%) | Male (1) | |

Table 2.2 The summary of the main usage and their users in Water Fountain Square - weekends

**TABLES OF THE MAIN
USAGE AND THEIR USERS
- LIGHTING SQUARE**

| LIGHTING SQUARE - WEEKDAYS | | | | | | |
|----------------------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Time | Passing-through Vs Staying-in | Top three main typical staying-in behaviours | Corresponding users by participating group | Corresponding users by age in the participating group | Corresponding users by gender in the participating group | Dominant behaviours |
| 07:00 | Passing-through | | | | | - Passing through on foot |
| 07:30 | Passing-through (Except for: 29.01.2013 - similar) | <ul style="list-style-type: none"> - Playing badminton (29.01, approximately 36%, 4/11) - Square cleaning by sanitation worker (29.01, approximately 18%, 2/11) - Sitting and watching (people or plants) (29.01, approximately 18%, 2/11) | <ul style="list-style-type: none"> Friends (4/4) Single (2/2) Single (2/2) | <ul style="list-style-type: none"> 25-64 years old (100%) 25-64 years old (100%) 25-64 years old (100%) | <ul style="list-style-type: none"> Female (2), Male (2) Female (1), Male (1) Male (2) | <ul style="list-style-type: none"> - Passing through on foot - Playing badminton |
| 08:00 | Passing-through (Except for: 29.01.2013 - staying-in) | <ul style="list-style-type: none"> - Playing badminton (29.01, approximately 27%, 4/15) - Square cleaning by sanitation worker (29.01, approximately 20%, 3/15) - Using/playing with phone or personal business (29.01, approximately 7%, 1/15) | <ul style="list-style-type: none"> Friends (4/4) Single (3/3) Single (1/1) | <ul style="list-style-type: none"> 25-64 years old (100%) 25-64 years old (100%) 25-64 years old (100%) | <ul style="list-style-type: none"> Female (2), Male (2) Female (1), Male (2) Male (1) | <ul style="list-style-type: none"> - Passing through on foot - Playing badminton - Square cleaning by sanitation worker |
| 09:00 | Passing-through (Except for: 29.01.2013 - similar, 31.01.2013 - staying-in) | <ul style="list-style-type: none"> - Sitting and reading (29.01, approximately 30%, 7/23) - Sitting and watching (people or plants) (29.01, approximately 13%, 3/23) - Sitting and chatting (29.01, approximately 13%, 3/23) - Sitting and chatting (31.01, approximately 24%, 6/25) - Using/playing with phone or personal business (31.01, approximately 8%, 2/25) - Running and playing, using open area (31.01, approximately 8%, 2/25) | <ul style="list-style-type: none"> Single (7/7) Single (3/3) Friends (3/3) Couple (6/9) Single (2/2) Family (2/2) | <ul style="list-style-type: none"> 25-64 years old (approximately 71%) 65+ years old (approximately 29%) 25-64 years old (100%) 25-64 years old (100%) 19-24 years old (approximately 33%) 25-64 years old (approximately 66%) 25-64 years old (100%) 4-12 years old (approximately 50%) 25-64 years old (approximately 50%) | <ul style="list-style-type: none"> Female (2), Male (3) Male (2) Male (3) Male (3) Female (1), Male (1) Female (2), Male (2) Female (1), Male (1) Male (1) Female (1) | <ul style="list-style-type: none"> - Passing through on foot - Sitting and reading - Sitting and chatting |
| 10:00 | Staying-in (Except for: 29.01.2013 - similar) | <ul style="list-style-type: none"> - Running and playing, using open area (22.01, approximately 44%, 18/41) - Sitting and watching (sculptures, plants or people) (22.01, approximately 15%, 6/41) - Standing and chatting (22.01, approximately 12%, 5/41) - Sitting and chatting (24.01, approximately 28%, 15/53) - Running and playing, using open area (24.01, approximately 26%, 14/53) - Sitting and reading (24.01, approximately 11%, 6/53) | <ul style="list-style-type: none"> Family (18/18) Single (4/6) Family (3/5) Friends (8/15) Family (14/14) Single (6/6) | <ul style="list-style-type: none"> 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 25-64 years old (100%) 25-64 years old (100%) 25-64 years old (approximately 75%) 65+ years old (approximately 25%) 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 25-64 years old (approximately 50%) 65+ years old (approximately 50%) | <ul style="list-style-type: none"> Female (2-3), Male (3-5) Female (3-4), Male (3-6) Female (1), Male (3) Female (2), Male (1) Male (4-6) Male (2-3) Female (2-3), Male (1-3) Female (3-4), Male (2-4) Female (1-2), Male (2-3) Female (1-2), Male (2-3) | <ul style="list-style-type: none"> - Passing through on foot - Running and playing, using open area - Sitting and watching (sculptures, plants or people) - Sitting and chatting - Standing and chatting |

Table 3.1 The summary of the main usage and their users in Lighting Square - weekdays

| | | | | | |
|--------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| 10:00 Staying-in (Except for: 29.01.2013 - similar) | - Sitting and chatting (29.01, approximately 21%, 9/42) | Friends (5/9) | 19-24 years old (approximately 60%) 25-64 years old (approximately 40%) | Female (2), Male (1) Male (2) | |
| | - Running and playing, using open area (29.01, approximately 17%, 7/42) | Family (7/7) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (0-1), Male (1-2) Female (1-2), Male (1-2) | |
| | - Standing and chatting (29.01, approximately 17%, 7/42) | Family (5/7) | 25-64 years old (100%) | Female (3), Male (2) | |
| | - Running and playing, using open area (31.01, approximately 38%, 19/50) | Family (19/19) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (1-3), Male (1-5) Female (2-4), Male (2-6) | |
| | - Sitting and chatting (31.01, approximately 20%, 10/50) | Friends (8/10) | 25-64 years old (100%) | Female (4), Male (4) | |
| | - Using/playing with phone or personal business (31.01, approximately 10%, 5/50) | Single (5/5) | 25-64 years old (100%) | Male (3) | |
| 11:00 Staying-in | - Running and playing, using open area (22.01, approximately 36%, 24/66) | Family (24/24) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (2-5), Male (3-7) Female (3-6), Male (3-8) | - Running and playing, using open area - Taking group photos - Sitting and chatting - Inspecting and studying (in tour) |
| | - Sitting and chatting (22.01, approximately 14%, 9/66) | Family (4/9) | 4-12 years old (approximately 25%) 25-64 years old (approximately 75%) | Female (1) Female (2), Male (1) | |
| | - Sitting and watching (sculptures, plants or people) (22.01, approximately 8%, 5/66) | Single (5/5) | 25-64 years old (approximately 80%) 65+ years old (approximately 20%) | Female (1), Male (3) Female (1) | |
| | - Running and playing, using open area (24.01, approximately 24%, 25/104) | Family (25/25) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (1-3), Male (6-8) Female (2-4), Male (8-10) | |
| | - Taking group photos (24.01, approximately 22%, 23/104) | Friends (23/23) | 25-64 years old (100%) | Female (11), Male (12) | |
| | - Sitting and watching (people or plants) (24.01, approximately 12%, 12/104) | Single (5/12) | 25-64 years old (approximately 80%) 65+ years old (approximately 20%) | Female (1), Male (3) Male (1) | |
| | - Running and playing, using open area (29.01, approximately 43%, 24/56) | Family (24/24) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (2-5), Male (3-6) Female (3-6), Male (4-7) | |
| | - Sitting and chatting (29.01, approximately 23%, 13/56) | Friends (9/13) | 25-64 years old (100%) | Male (9) | |
| | - Strolling with a pram (29.01, approximately 7%, 4/56) | Family (4/4) | 0-3 years old (approximately 25%) 25-64 years old (approximately 75%) | Female (1) Female (2), Male (1) | |
| | - Running and playing, using open area (31.01, approximately 36%, 30/83) | Family (30/30) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (6-8), Male (4-6) Female (7-10), Male (5-8) | |
| | - Inspecting and studying (in tour) (31.01, approximately 24%, 20/83) | Friends (20/20) | 25-64 years old (100%) | Female (2), Male (18) | |
| | - Sitting and chatting (31.01, approximately 17%, 14/83) | Friends (10/14) | 25-64 years old (100%) | Female (1), Male (9) | |

Table 3.1 The summary of the main usage and their users in Lighting Square - weekdays

| | | | | | | |
|-------------------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| 12:00 | Staying-in (Except for: 31.01.2013 - passing-through) | - Sitting with a pram (22.01, approximately 26%, 15/58) | Family (15/15) | 0-3 years old (approximately 45%) 25-64 years old (approximately 55%) 4-12 years old (approximately 45%) | Female (4-5), Male (1-2) Female (4-6), Male (1-3) | - Passing through on foot |
| | | - Running and playing, using open area (22.01, approximately 16%, 9/58) | Family (9/9) | 25-64 years old (approximately 55%) | Female (1-2), Male (1-2) Female (2-3), Male (2-4) | - Sitting with a pram - Running and playing, using open area - Sitting and chatting |
| | | - Sitting and chatting (22.01, approximately 16%, 9/58) | Friends (8/9) | 25-64 years old (100%) | Female (4), Male (4) | |
| | | - Running and playing, using open area (24.01, approximately 26%, 18/68) | Family (18/18) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (2-5), Male (2-4) Female (3-5), Male (2-4) | |
| | | - Standing and chatting (24.01, approximately 13%, 9/68) | Friends (9/9) | 19-24 years old (approximately 11%) 25-64 years old (approximately 89%) | Male (1) Female (3), Male (5) | |
| | | - Taking personal photos (24.01, approximately 9%, 6/68) | Friends (6/6) | 25-64 years old (100%) | Female (3), Male (3) | |
| | | - Running and playing, using open area (29.01, approximately 37%, 23/63) | Family (23/23) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (2-5), Male (3-6) Female (3-5), Male (4-7) | |
| | | - Sitting and chatting (29.01, approximately 27%, 17/63) | Friends (13/17) | 25-64 years old (100%) | Female (4), Male (9) | |
| - Sitting and eating (29.01, approximately 10%, 6/63) | Friends (2/6) | 19-24 years old (100%) | Female (2) | | | |
| 13:00 | Similar | - Sitting and chatting (22.01, approximately 27%, 14/51) | Friends (11/14) | 19-24 years old (approximately 36%) 25-64 years old (approximately 64%) | Female (4) Female (1), Male (6) | - Passing through on foot |
| | | - Using/playing with phone or personal business (22.01, approximately 10%, 5/51) | Single (5/5) | 19-24 years old (approximately 20%) 25-64 years old (approximately 80%) | Female (1) Female (1), Male (3) | - Sitting and chatting - Sitting and watching (people or plants) - Running and playing, using open area - Sitting and eating |
| | | - Strolling with a pram (22.01, approximately 10%, 5/51) | Family (5/5) | 0-3 years old (approximately 40%) 25-64 years old (approximately 60%) | Female (1), Male (1) Female (2), Male (1) | |
| | | - Sitting and chatting (24.01, approximately 34%, 18/53) | Friends (9/18) | 19-24 years old (approximately 33%) 25-64 years old (approximately 67%) | Female (2), Male (1) Female (1), Male (5) | |
| | | - Sitting and watching (people or plants) (24.01, approximately 17%, 9/53) | Single (7/9) | 25-64 years old (100%) | Female (1), Male (6) | |
| | | - Running and playing, using open area (24.01, approximately 11%, 6/53) | Family (6/6) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (1-2), Male (2-3) Female (1-2), Male (2-3) | |
| | | - Running and playing, using open area (29.01, approximately 34%, 16/47) | Family (16/16) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (2-4), Male (2-3) Female (2-5), Male (2-4) | |
| | | - Sitting and chatting (29.01, approximately 26%, 12/47) | Friends (6/12) | 25-64 years old (approximately 83%) 65+ years old (approximately 17%) | Female (1), Male (4) Male (1) | |
| - Doing maintenance of square's facilities (29.01, approximately 9%, 4/47) | Single (4/4) | 25-64 years old (100%) | Female (1), Male (3) | | | |

Table 3.1 The summary of the main usage and their users in Lighting Square - weekdays

| | | | | | | |
|-------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 13:00 | Similar | <ul style="list-style-type: none"> - Running and playing, using open area (31.01, approximately 29%, 14/49) - Sitting and chatting (31.01, approximately 24%, 12/49) - Sitting and eating (31.01, approximately 16%, 8/49) | <ul style="list-style-type: none"> Family (14/14) Couple (6/12) Family (4/8) | <ul style="list-style-type: none"> 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 19-24 years old (approximately 33%) 25-64 years old (approximately 67%) 25-64 years old (100%) | <ul style="list-style-type: none"> Female (2-3), Male (2-3) Female (2-3), Male (2-4) Female (1), Male (1) Female (2), Male (2) Female (2) Female (1), Male (1) | |
| 14:00 | Passing-through | | | | | - Passing through on foot |
| 15:00 | Passing-through (Except for: 31.01.2013 - similar) | <ul style="list-style-type: none"> - Running and playing, using open area (31.01, approximately 42%, 32/76) - Sitting and chatting (31.01, approximately 29%, 22/76) - Sitting and watching (people or plants) (31.01, approximately 8%, 6/76) | <ul style="list-style-type: none"> Family (32/32) Friends (16/22) Single (3/6) | <ul style="list-style-type: none"> 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 19-24 years old (approximately 13%) 25-64 years old (approximately 87%) 25-64 years old (100%) | <ul style="list-style-type: none"> Female (5-8), Male (4-7) Female (5-9), Male (4-8) Female (1), Male (1) Female (7), Male (7) Female (2), Male (1) | <ul style="list-style-type: none"> - Passing through on foot - Running and playing, using open area - Sitting and chatting |
| 16:00 | Staying-in | <ul style="list-style-type: none"> - Sitting and chatting (22.01, approximately 25%, 16/65) - Standing and chatting (22.01, approximately 17%, 11/65) - Strolling with a pram (22.01, approximately 14%, 9/65) - Running and playing, using open area (24.01, approximately 40%, 27/67) - Sitting and chatting (24.01, approximately 30%, 20/67) - Using/playing with phone or personal business (24.01, approximately 7%, 5/67) - Running and playing, using open area (29.01, approximately 36%, 27/75) - Sitting and chatting (29.01, approximately 27%, 20/75) - Standing and chatting (29.01, approximately 9%, 7/75) - Sitting and chatting (31.01, approximately 28%, 27/96) - Running and playing, using open area (31.01, approximately 27%, 26/96) - Rehearsing collective activity (31.01, approximately 9%, 9/96) | <ul style="list-style-type: none"> Couple (8/16) Friends (9/11) Family (9/9) Family (27/27) Friends (14/20) Single (5/5) Family (27/27) Friends (12/20) Friends (7/7) Friends (18/27) Family (26/26) Family (9/9) | <ul style="list-style-type: none"> 19-24 years old (approximately 50%) 25-64 years old (approximately 50%) 25-64 years old (100%) 0-3 years old (approximately 45%) 25-64 years old (approximately 55%) 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 19-24 years old (approximately 24%) 25-64 years old (approximately 76%) 19-24 years old (approximately 67%) 25-64 years old (approximately 33%) 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 25-64 years old (approximately 92%) 25-64 years old (approximately 8%) 19-24 years old (approximately 57%) 25-64 years old (approximately 43%) 19-24 years old (approximately 28%) 25-64 years old (approximately 72%) 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | <ul style="list-style-type: none"> Female (2), Male (2) Female (2), Male (2) Female (3), Male (6) Female (2-4), Male (0-1) Female (2-4), Male (0-1) Female (3-7), Male (3-6) Female (4-8), Male (4-7) Female (4), Male (2) Female (2), Male (6) Male (1) Female (2), Male (2) Female (3-7), Male (3-5) Female (4-8), Male (4-6) Female (3), Male (8) Female (1) Female (3), Male (1) Male (3) Male (5) Female (9), Male (4) Female (4-8), Male (2-4) Female (5-9), Male (3-5) Female (2-4), Male (0-1) Female (3-5), Male (0-1) | <ul style="list-style-type: none"> - Sitting and chatting - Standing and chatting - Running and playing, using open area - Strolling with a pram |

Table 3.1 The summary of the main usage and their users in Lighting Square - weekdays

| | | | | | |
|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 17:00 Staying-in | - Sitting and chatting (22.01, approximately 39%, 34/87) | Friends (20/34) | 19-24 years old (approximately 25%) 25-64 years old (approximately 70%) 65+ years old (approximately 5%) | Female (2), Male (3) Female (8), Male (6) Male (1) | - Sitting and chatting - Running and playing, using open area - Standing and watching (young children dancing performance) (rehearsing collective activity) |
| | - Running and playing, using open area (22.01, approximately 21%, 18/87) | Family (18/18) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (2-4), Male (4-5) Female (3-5), Male (5-7) | |
| | - Sitting and watching (people or plants) (22.01, approximately 14%, 12/87) | Single (10/12) | 19-24 years old (approximately 30%) 25-64 years old (approximately 70%) | Male (3) Female (4), Male (3) | |
| | - Running and playing, using open area (24.01, approximately 34%, 32/95) | Family (32/32) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (3-6), Male (7-9) Female (4-7), Male (8-10) | |
| | - Sitting and chatting (24.01, approximately 27%, 26/95) | Friends (16/26) | 19-24 years old (approximately 50%) 25-64 years old (approximately 50%) | Female (7), Male (1) Female (3), Male (5) | |
| | - Sitting and watching (people or plants) (24.01, approximately 14%, 13/95) | Single (8/13) | 13-18 years old (approximately 25%) 19-24 years old (approximately 13%) 25-64 years old (approximately 62%) | Female (2) Male (1) Female (1), Male (4) | |
| | - Sitting and chatting (29.01, approximately 31%, 23/75) | Friends (13/23) | 19-24 years old (approximately 70%) 25-64 years old (approximately 15%) 65+ years old (approximately 15%) | Male (2) Female (5), Male (4) Male (2) | |
| | - Running and playing, using open area (29.01, approximately 29%, 22/75) | Family (22/22) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (3-6), Male (2-4) Female (4-7), Male (3-5) | |
| | - Sitting and watching (people or plants) (29.01, approximately 8%, 6/75) | Single (6/6) | 25-64 years old (approximately 83%) 65+ years old (approximately 17%) | Female (1), Male (4) Female (1) | |
| | - Standing and watching (young children's Rehearsing collective activity) (31.01, approximately 66%, 179/270) | Family (66/179) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (13-18), Male (12-18) Female (15-20), Male (15-20) | |
| - Rehearsing collective activity (31.01, approximately 13%, 36/270) | Friends (36/36) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (10-13), Male (3-4) Female (12-15), Male (4-6) | | |
| - Sitting and chatting (31.01, approximately 6%, 15/270) | Couple (10/15) | 25-64 years old (100%) | Female (5), Male (5) | | |
| 18:00 Staying-in (Except for: 22.01.2013 - passing-through) | - Sitting and chatting (24.01, approximately 30%, 20/67) | Friends (14/20) | 19-24 years old (approximately 50%) 25-64 years old (approximately 50%) | Female (2), Male (5) Female (6), Male (1) | - Passing through on foot |
| | - Running and playing, using open area (24.01, approximately 25%, 17/67) | Family (17/17) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (3-5), Male (2-3) Female (4-6), Male (2-3) | - Sitting and chatting - Running and playing, using open area - Sitting and watching (people or plants) |
| | - Sitting and watching (people or plants) (24.01, approximately 13%, 9/67) | Couple (4/9) | 19-24 years old (approximately 50%) 25-64 years old (approximately 50%) | Female (1), Male (1) Female (1), Male (1) | |

Table 3.1 The summary of the main usage and their users in Lighting Square - weekdays

| | | | | | | | |
|--------------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------|
| 18:00 | Staying-in (Except for: 22.01.2013 - passing-through) | - Running and playing, using open area (29.01, approximately 29%, 20/69) | Family (20/20) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (1-3), Male (3-6) Female (2-4), Male (4-7) | | |
| | | - Sitting and chatting (29.01, approximately 19%, 13/69) | Friends (13/25) | 19-24 years old (approximately 31%) 25-64 years old (approximately 69%) | Female (4) Female (6), Male (3) | | |
| | | - Sitting and watching (people or plants) (29.01, approximately 6%, 4/69) | Single (4/4) | 25-64 years old (100%) | Male (4) | | |
| | | - Running and playing, using open area (31.01, approximately 31%, 22/71) | Family (22/22) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (3-6), Male (3-4) Female (4-7), Male (4-5) | | |
| 19:00 | Passing-through | - Sitting and watching (people or plants) (31.01, approximately 23%, 16/71) | Family (7/16) | 13-18 years old (approximately 29%) 19-24 years old (approximately 29%) 25-64 years old (approximately 42%) | Female (1), Male (1) Female (1), Male (1) Female (2), Male (1) | | |
| | | - Sitting and chatting (31.01, approximately 11%, 8/71) | Couple (4/8) | 19-24 years old (100%) | Female (2), Male (2) | | |
| | | | | | | | - Passing through on foot |
| | | - Running and playing, using open area (22.01, approximately 44%, 36/88) | Family (36/36) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (5-9), Male (4-8) Female (6-10), Male (5-9) | - Running and playing, using open area - Standing and chatting - Sitting and chatting | |
| 20:00 | Staying-in | - Standing and chatting (22.01, approximately 18%, 16/88) | Friends (12/16) | 25-64 years old (100%) | Female (5), Male (7) | | |
| | | - Sitting and chatting (22.01, approximately 18%, 16/88) | Friends (10/16) | 25-64 years old (100%) | Female (4), Male (6) | | |
| | | - Sitting and chatting (24.01, approximately 34%, 29/85) | Friends (16/29) | 25-64 years old (approximately 90%) | Male (14-16) | | |
| | | - Standing and chatting (24.01, approximately 18%, 15/85) | Family (8/15) | 0-3 years old (approximately 25%) 19-24 years old (approximately 25%) 25-64 years old (approximately 50%) | Female (1), Male (1) Female (2) Female (1), Male (3) | | |
| | | - Running and playing, using open area (24.01, approximately 16%, 14/85) | Family (14/14) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (2-3), Male (2-3) Female (3-4), Male (3-4) | | |
| | | - Running and playing, using open area (29.01, approximately 46%, 37/80) | Family (37/37) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (9-11), Male (4-7) Female (8-12), Male (5-8) | | |
| | | - Sitting and chatting (29.01, approximately 31%, 25/80) | Couple (12/25) | 25-64 years old (100%) | Female (6), Male (6) | | |
| | | - Sitting and watching (people or plants) (29.01, approximately 5%, 4/80) | Single (4) | 25-64 years old (approximately 75%) 65+ years old (approximately 25%) | Female (1), Male (2) Female (1) | | |
| | | - Running and playing, using open area (31.01, approximately 32%, 29/90) | Family (29/29) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (3-5), Male (4-8) Female (4-6), Male (5-9) | | |
| | | - Sitting and chatting (31.01, approximately 27%, 24/90) | Friends (10/24) | 19-24 years old (approximately 20%) 25-64 years old (approximately 60%) 65+ years old (approximately 20%) | Female (2) Female (2), Male (4) Male (2) | | |
| - Standing and chatting (31.01, approximately 11%, 10/90) | Family (6/10) | 4-12 years old (approximately 17%) 25-64 years old (approximately 83%) | Male (1) Female (3), Male (2) | | | | |

Table 3.1 The summary of the main usage and their users in Lighting Square - weekdays

| | | | | | | |
|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| 21:00 Staying-in | - Running and playing, using open area (22.01, approximately 29%, 22/76) | Family (22/22) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (2-4), Male (4-6) Female (3-5), Male (5-7) | - Running and playing, using open area - Sitting and chatting - Standing and chatting | |
| | - Sitting and chatting (22.01, approximately 24%, 18/76) | Friends (10/18) | 25-64 years old (100%) | Female (6), Male (4) | | |
| | - Standing and chatting (22.01, approximately 18%, 14/76) | Family (7/14) | 4-12 years old (approximately 14%) 25-64 years old (approximately 86%) | Female (1) Female (3), Male (3) | | |
| | - Sitting and chatting (24.01, approximately 42%, 28/67) | Friends (18/28) | 19-24 years old (approximately 11%) 25-64 years old (approximately 89%) | Male (2) Female (10), Male (6) | | |
| | - Running and playing, using open area (24.01, approximately 34%, 23/67) | Family (23/23) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (3-6), Male (4-6) Female (4-7), Male (5-7) | | |
| | - Using/playing with phone or personal business (24.01, approximately 4%, 3/67) | Couple (3/3) | 25-64 years old (100%) | Female (1), Male (2) | | |
| | - Running and playing, using open area (29.01, approximately 45%, 33/73) | Family (33/33) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (3-6), Male (7-9) Female (4-7), Male (8-10) | | |
| | - Sitting and chatting (29.01, approximately 34%, 25/73) | Friends (17/25) | 25-64 years old (100%) | Female (5), Male (12) | | |
| | - Doing intimate interaction (29.01, approximately 5%, 4/73) | Couple (4/4) | 25-64 years old (100%) | Female (2), Male (2) | | |
| | - Running and playing, using open area (31.01, approximately 43%, 40/93) | Family (38/40) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (4-10), Male (4-6) Female (5-12), Male (5-7) | | |
| | - Sitting and chatting (31.01, approximately 27%, 25/93) | Friends (15/25) | 25-64 years old (100%) | Female (7), Male (8) | | |
| | - Using/playing with phone or personal business (31.01, approximately 11%, 10/93) | Single (8/10) | 19-24 years old (approximately 25%) 25-64 years old (approximately 75%) | Female (1), Male (1) Female (4), Male (3) | | |
| | 22:00 Similar | - Running and playing, using open area (22.01, approximately 29%, 15/51) | Family (15/15) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (2-4), Male (2-3) Female (3-5), Male (3-4) | - Passing through on foot - Running and playing, using open area - Standing and chatting - Sitting and chatting |
| | | - Standing and chatting (22.01, approximately 27%, 14/51) | Friends (10/14) | 25-64 years old (100%) | Female (6), Male (4) | |
| - Sitting and chatting (22.01, approximately 16%, 8/51) | | Family (4/8) | 25-64 years old (100%) | Female (2), Male (2) | | |
| - Running and playing, using open area (24.01, approximately 41%, 11/27) | | Family (11/11) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (2-3), Male (2-3) Female (2-3), Male (2-3) | | |
| - Sitting and chatting (24.01, approximately 30%, 8/27) | Family (4/8) | 25-64 years old (100%) | Female (2), Male (2) | | | |
| - Doing maintenance of square's facilities (24.01, approximately 11%, 3/27) | Single (3/3) | 25-64 years old (100%) | Male (3) | | | |

Table 3.1 The summary of the main usage and their users in Lighting Square - weekdays

| | | | | | | |
|-------|------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------|---------------------------------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 22:00 | Similar | - Running and playing, using open area (29.01, approximately 44%, 23/52) | Family (23/23) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (2-6), Male (2-5) Female (3-6), Male (3-6) | |
| | | - Sitting and chatting (29.01, approximately 23%, 12/52) | Friends (6/12) | 25-64 years old (100%) | Female (2), Male (4) | |
| | | - Taking personal photos (29.01, approximately 12%, 6/52) | Friends (4/6) | 25-64 years old (100%) | Female (1), Male (3) | |
| | | - Sitting and chatting (31.01, approximately 38%, 16/42) | Friends (10/16) | 25-64 years old (100%) | Female (4), Male (6) | |
| | | - Running and playing, using open area (31.01, approximately 36%, 15/42) | Family (15/15) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (1-3), Male (2-4) Female (2-4), Male (3-5) | |
| | | - Sitting and watching (people) (31.01, approximately 14%, 6/42) | Single (6/6) | 25-64 years old (100%) | Female (2), Male (4) | |
| 23:00 | Similar (Except for: 22.01.2013 passing- through) | - Doing intimate interaction (24.01, approximately 29%, 4/14) | Couple (4/4) | 25-64 years old (100%) | Female (2), Male (2) | <ul style="list-style-type: none"> - Passing through on foot - Doing intimate interaction - Running and playing, using open area - Standing and chatting - Sitting and watching (people) - Sitting and chatting |
| | | - Running and playing, using open area (24.01, approximately 21%, 3/14) | Family (3/3) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) | Female (1-2) Female (1-2) | |
| | | - Standing and chatting (24.01, approximately 21%, 3/14) | Friends (3/3) | 25-64 years old (100%) | Female (1), Male (2) | |
| | | - Doing intimate interaction (29.01, approximately 33%, 4/12) | Couple (4/4) | 25-64 years old (100%) | Female (2), Male (2) | |
| | | - Sitting and watching (people) (29.01, approximately 25%, 3/12) | Single (3/3) | 25-64 years old (100%) | Female (1), Male (2) | |
| | | - Sitting and chatting (29.01, approximately 17%, 2/12) | Friends (2/2) | 25-64 years old (100%) | Male (2) | |
| | | - Doing intimate interaction (31.01, approximately 29%, 4/14) | Couple (4/4) | 25-64 years old (100%) | Female (2), Male (2) | |
| | | - Sitting and chatting (31.01, approximately 29%, 4/14) | Couple (2/4) | 25-64 years old (100%) | Female (1), Male (1) | |
| | | - Sitting and watching (people) (31.01, approximately 21%, 3/14) | Single (3/3) | 25-64 years old (100%) | Male (3) | |
| | | | | | | |
| 24:00 | Passing-through | | | | | - Passing through on foot |

Table 3.1 The summary of the main usage and their users in Lighting Square - weekdays

| LIGHTING SQUARE - WEEKENDS | | | | | | |
|----------------------------|------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Time | Passing-through Vs Staying-in | Top three main typical staying-in behaviours | Corresponding users by participating group | Corresponding users by age in the participating group | Corresponding users by gender in the participating group | Dominant behaviours |
| 07:00 | Staying-in | - Doing exercises (morning) (26.01, approximately 50%, 4/8) | Single (4/4) | 25-64 years old (100%) | Female (4) | - Doing exercises (morning) |
| | | - Sitting and reading (26.01, approximately 25%, 2/8) | Single (2/2) | 25-64 years old (100%) | Male (1) | |
| 07:30 | Similar | - Strolling with a dog (26.01, approximately 13%, 1/8) | Single (1/1) | 25-64 years old (100%) | Female (1) | - Passing through on foot - Doing exercises (morning) |
| | | - Doing exercises (morning) (02.02, approximately 55%, 6/11) | Single (6/6) | 25-64 years old (100%) | Female (4), Male (2) | |
| | | - Standing and watching (people or plants) (02.02, approximately 18%, 2/11) | Single (2/2) | 25-64 years old (100%) | Male (2) | |
| | | - Sitting and reading (02.02, approximately 18%, 2/11) | Single (2/2) | 25-64 years old (100%) | Female (1), Male (1) | |
| 08:00 | Similar (on 26.01.2013) Passing-through (on 02.02.2013) | - Doing exercises (morning) (26.01, approximately 66%, 4/6) | Single (4/4) | 25-64 years old (100%) | Female (4) | - Passing through on foot - Doing exercises (morning) |
| | | - Square cleaning by sanitation worker (26.01, approximately 17%, 1/6) | Single (1/1) | 25-64 years old (100%) | Male (1) | |
| | | - Sitting and reading (26.01, approximately 17%, 1/6) | Single (1/1) | 25-64 years old (100%) | Female (1) | |
| | | - Doing exercises (morning) (02.02, approximately 70%, 7/10) | Single (7/7) | 25-64 years old (100%) | Female (5), Male (2) | |
| 09:00 | Similar (on 26.01.2013) Staying-in (on 02.02.2013) | - Sitting and watching (people or plants) (02.02, approximately 10%, 1/10) | Single (1/1) | 25-64 years old (100%) | Male (1) | - Doing maintenance of square's facilities - Standing and chatting |
| | | - Sitting and reading (02.02, approximately 10%, 1/10) | Single (1/1) | 25-64 years old (100%) | Male (1) | |
| | | - Doing exercises (morning) (26.01, approximately 27%, 4/15) | Friends (4/4) | 25-64 years old (100%) | Female (1), Male (3) | |
| | | - Doing maintenance of square's facilities (26.01, approximately 20%, 3/15) | Single (3/3) | 25-64 years old (100%) | Female (1), Male (2) | |
| | | - Standing and chatting (26.01, approximately 20%, 3/15) | Friends (3/3) | 25-64 years old (100%) | Female (1), Male (2) | |
| | | - Taking personal photos (26.01, approximately 38%, 11/29) | Friends (9/11) | 25-64 years old (100%) | Female (5), Male (4) | |
| 09:00 | Similar (on 26.01.2013) Staying-in (on 02.02.2013) | - Sitting and chatting (26.01, approximately 17%, 5/29) | Friends (5/5) | 19-24 years old (approximately 40%) 25-64 years old (approximately 60%) | Male (2) Male (3) | - Passing through on foot - Taking personal photos - Sitting and chatting - Standing and chatting |
| | | - Doing maintenance of square's facilities (26.01, approximately 10%, 3/29) | Single (3/3) | 25-64 years old (100%) | Female (1), Male (2) | |
| | | - Standing and chatting (02.02, approximately 29%, 5/17) | Friends (5/5) | 25-64 years old (100%) | Female (2), Male (3) | |
| | | - Running and playing with space (02.02, approximately 18%, 3/17) | Friends (3/3) | 4-12 years old (approximately 33%) 25-64 years old (approximately 33%) 65+ years old (approximately 33%) | Female (1) Female (1) Female (1) | |
| | | - Sitting and watching (people or plants) (02.02, approximately 18%, 3/17) | Single (3/3) | 25-64 years old (100%) | Female (1), Male (2) | |

Table 3.2 The summary of the main usage and their users in Lighting Square - weekends

| | | | | | | |
|-------|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10:00 | Passing-through (on 26.01.2013) Similar (on 02.02.2013) | <ul style="list-style-type: none"> - Running and playing, using open area (02.02, approximately 28%, 13/46) - Sitting and chatting (02.02, approximately 26%, 12/46) - Strolling with a pram (02.02, approximately 15%, 7/46) | <ul style="list-style-type: none"> Family (13/13) Friends (8/12) Family (7/7) | <ul style="list-style-type: none"> 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 25-64 years old (100%) 0-3 years old (approximately 45%) 25-64 years old (approximately 55%) | <ul style="list-style-type: none"> Female (1-3), Male (2-4) Female (2-4), Male (3-5) Female (2), Male (6) Female (1-2), Male (1-2) Female (1-2), Male (2-3) | <ul style="list-style-type: none"> - Passing through on foot - Running and playing, using open area - Sitting and chatting - Strolling with a pram |
| 11:00 | Staying-in | <ul style="list-style-type: none"> - Running and playing, using open area (26.01, approximately 42%, 25/59) - Sitting and chatting (26.01, approximately 19%, 11/59) - Playing around on bicycle (26.01, approximately 12%, 7/59) - Running and playing, using open area (02.02, approximately 33%, 17/51) - Sitting and chatting (02.02, approximately 25%, 13/51) - Sitting and watching (people or plants) (02.02, approximately 8%, 4/51) | <ul style="list-style-type: none"> Family (25/25) Friends (4/11) Family (7/7) Family (17/17) Friends (7/13) Single (4/4) | <ul style="list-style-type: none"> 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 19-24 years old (approximately 50%) 25-64 years old (approximately 50%) 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 25-64 years old (100%) 25-64 years old (100%) | <ul style="list-style-type: none"> Female (4-6), Male (2-5) Female (5-7), Male (3-6) Male (2) Male (2) Female (1-2), Male (1-2) Female (2-3), Male (1-2) Female (1-2), Male (4-6) Female (1-3), Male (5-8) Female (3), Male (4) Female (1), Male (3) | <ul style="list-style-type: none"> - Running and playing, using open area - Sitting and chatting - Running and playing, using open area - Sitting and chatting |
| 12:00 | Staying-in | <ul style="list-style-type: none"> - Running and playing, using open area (26.01, approximately 41%, 34/82) - Sitting and chatting (26.01, approximately 16%, 13/82) - Standing and chatting (26.01, approximately 10%, 8/82) - Running and playing, using open area (02.02, approximately 51%, 28/55) - Sitting and chatting (02.02, approximately 20%, 11/55) - Doing maintenance of square's facilities (02.02, approximately 7%, 4/55) | <ul style="list-style-type: none"> Family (34/34) Family (7/13) Friends (3/8) Family (28/28) Friends (9/11) Single (2/4) | <ul style="list-style-type: none"> 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 25-64 years old (100%) 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 19-24 years old (approximately 44%) 25-64 years old (approximately 56%) 25-64 years old (100%) | <ul style="list-style-type: none"> Female (5-7), Male (7-9) Female (7-9), Male (8-10) Female (2-4) Female (3-5) Male (3) Female (3-6), Male (6-8) Female (4-7), Male (7-9) Female (4) Female (5) Male (2) | <ul style="list-style-type: none"> - Running and playing, using open area - Sitting and chatting - Running and playing, using open area - Sitting and chatting - Running and playing, using open area - Sitting and chatting |
| 13:00 | Similar | <ul style="list-style-type: none"> - Sitting and chatting (26.01, approximately 32%, 19/59) - Sitting with a pram (26.01, approximately 14%, 8/59) - Running and playing, using open area (26.01, approximately 10%, 6/59) | <ul style="list-style-type: none"> Friends (10/19) Family (8/8) Family (6/6) | <ul style="list-style-type: none"> 25-64 years old (100%) 0-3 years old (approximately 38%) 25-64 years old (approximately 62%) 4-12 years old (approximately 67%) 25-64 years old (approximately 33%) | <ul style="list-style-type: none"> Female (3), Male (7) Female (2), Male (1) Female (3), Male (2) Female (3), Male (1) Female (1), Male (1) | <ul style="list-style-type: none"> - Passing through on foot - Sitting and chatting - Running and playing, using open area - Sitting with a pram |

Table 3.2 The summary of the main usage and their users in Lighting Square - weekends

| | | | | | | |
|-------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 13:00 | Similar | <ul style="list-style-type: none"> - Running and playing, using open area (02.02, approximately 34%, 16/47) - Sitting with a pram (02.02, approximately 15%, 7/47) - Using/playing with phone or personal business (02.02, approximately 13%, 6/47) | <ul style="list-style-type: none"> Family (16/16) Family (7/7) Single (4/6) | <ul style="list-style-type: none"> 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 0-3 years old (approximately 45%) 25-64 years old (approximately 55%) 19-24 years old (approximately 50%) 25-64 years old (approximately 50%) | <ul style="list-style-type: none"> Female (1-3), Male (2-4) Female (2-4), Male (3-5) Female (1-2), Male (1-2) Female (1-2), Male (1-3) Female (1), Male (1) Female (1), Male (1) | |
| 14:00 | Passing-through | | | | | - Passing through on foot |
| 15:00 | Passing-through | | | | | - Passing through on foot |
| 16:00 | Passing-through (26.01.2013, few users due to the rain) Staying-in (02.02.2013) | <ul style="list-style-type: none"> - Running and playing, using open area (02.02, approximately 27%, 23/85) - Sitting and chatting (02.02, approximately 22%, 19/85) - Standing and chatting (02.02, approximately 20%, 17/85) | <ul style="list-style-type: none"> Family (23/23) Friends (15/19) Friends (13/17) | <ul style="list-style-type: none"> 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 19-24 years old (approximately 33%) 25-64 years old (approximately 67%) 25-64 years old (100%) | <ul style="list-style-type: none"> Female (2-5), Male (4-6) Female (3-6), Male (5-7) Male (5) Female (3), Male (7) Female (1), Male (12) | <ul style="list-style-type: none"> - Passing through on foot - Running and playing, using open area - Sitting and chatting - Standing and chatting |
| 17:00 | Passing-through (26.01.2013, few users due to the rain) Staying-in (02.02.2013) | <ul style="list-style-type: none"> - Sitting and chatting (02.02, approximately 38%, 39/104) - Running and playing, using open area (02.02, approximately 14%, 15/104) - Sitting with a pram (02.02, approximately 10%, 10/104) | <ul style="list-style-type: none"> Friends (20/39) Family (15/15) Family (10/10) | <ul style="list-style-type: none"> 19-24 years old (approximately 35%) 25-64 years old (approximately 65%) 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 0-3 years old (approximately 45%) 25-64 years old (approximately 55%) | <ul style="list-style-type: none"> Female (2), Male (1) Female (8), Male (9) Female (2-3), Male (2-4) Female (3-4), Male (3-5) Female (2-3), Male (1-2) Female (3-4), Male (1-2) | <ul style="list-style-type: none"> - Passing through on foot - Sitting and chatting - Running and playing, using open area |
| 18:00 | Passing-through (26.01.2013, few users due to the rain) Staying-in (02.02.2013) | <ul style="list-style-type: none"> - Sitting and chatting (02.02, approximately 32%, 24/76) - Running and playing, using open area (02.02, approximately 21%, 16/76) - Strolling (02.02, approximately 16%, 12/76) | <ul style="list-style-type: none"> Friends (14/24) Family (16/16) Family (12/12) | <ul style="list-style-type: none"> 4-12 years old (approximately 13%) 25-64 years old (approximately 87%) 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 4-12 years old (approximately 42%) 25-64 years old (approximately 58%) | <ul style="list-style-type: none"> Male (2) Female (6), Male (6) Female (1-2), Male (2-5) Female (2-3), Male (3-6) Female (2), Male (3) Female (5), Male (2) | <ul style="list-style-type: none"> - Passing through on foot - Sitting and chatting - Running and playing, using open area - Strolling |
| 19:00 | Passing-through | | | | | - Passing through on foot |
| 20:00 | Passing-through (26.01.2013, few users due to the rain) Staying-in (02.02.2013) | <ul style="list-style-type: none"> - Running and playing, using open area (02.02, approximately 36%, 36/100) - Sitting and chatting (02.02, approximately 24%, 24/100) - Standing and chatting (02.02, approximately 11%, 11/100) | <ul style="list-style-type: none"> Family (36/36) Couple (16/24) Friends (6/11) | <ul style="list-style-type: none"> 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 19-24 years old (approximately 31%) 25-64 years old (approximately 69%) 25-64 years old (100%) | <ul style="list-style-type: none"> Female (7-9), Male (5-8) Female (8-10), Male (6-9) Female (3), Male (2) Female (5), Male (6) Female (2), Male (4) | <ul style="list-style-type: none"> - Passing through on foot - Running and playing, using open area - Sitting and chatting |

Table 3.2 The summary of the main usage and their users in Lighting Square - weekends

| | | | | | | |
|-------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 21:00 | Passing-through (26.01.2013, few users due to the rain) Staying-in (02.02.2013) | <ul style="list-style-type: none"> - Sitting and chatting (02.02, approximately 40%, 49/124) - Running and playing, using open area (02.02, approximately 21%, 26/124) - Taking personal photos (02.02, approximately 9%, 11/124) | Friends (21/49) Family (26/26) Friends (4/11) | 19-24 years old (approximately 5%) 25-64 years old (approximately 95%) 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 25-64 years old (100%) | Female (1) Female (10), Male (10) Female (2-3), Male (5-9) Female (3-4), Male (6-10) Female (3), Male (1) | <ul style="list-style-type: none"> - Passing through on foot - Sitting and chatting - Running and playing, using open area |
| 22:00 | Passing-through (26.01.2013, few users due to the rain) Similar (02.02.2013) | <ul style="list-style-type: none"> - Running and playing, using open area (02.02, approximately 24%, 12/51) - Sitting and chatting (02.02, approximately 20%, 10/51) - Standing and chatting (02.02, approximately 12%, 6/51) | Family (12/12) Couple (10/20) Family (4/6) | 4-12 years old (approximately 45%) 25-64 years old (approximately 55%) 25-64 years old (100%) 25-64 years old (100%) | Female (2-3), Male (2-3) Female (3-4), Male (3-4) Female (5), Male (5) Female (2), Male (2) | <ul style="list-style-type: none"> - Passing through on foot - Running and playing, using open area - Sitting and chatting |
| 23:00 | Passing-through (26.01.2013, few users due to the rain) Similar (02.02.2013) | <ul style="list-style-type: none"> - Sitting and chatting (02.02, approximately 52%, 12/23) - Running and playing, using open area (02.02, approximately 22%, 5/23) - Sitting and watching (people) (02.02, approximately 17%, 4/23) | Couple (8/12) Family (5/5) Single (4/4) | 19-24 years old (approximately 25%) 25-64 years old (approximately 75%) 4-12 years old (approximately 60%) 25-64 years old (approximately 40%) 25-64 years old (100%) | Female (1), Male (1) Female (3), Male (3) Male (3) Male (2) Male (4) | <ul style="list-style-type: none"> - Passing through on foot - Sitting and chatting - Running and playing, using open area - Sitting and watching (people) |
| 24:00 | Passing-through | | | | | <ul style="list-style-type: none"> - Passing through on foot |

Table 3.2 The summary of the main usage and their users in Lighting Square - weekends

APPENDIX D
- SEMI-STRUCTURED INTERVIEW
SURVEY

Semi-structure Interview

Type: Recreation Square

Label No.

Place:

Time:

Interviewer code:

Hello. My name is Dawei Li, and I am currently a PhD student in Landscape Department of the University of Sheffield, England. Today, I am doing some research on: *how to increase the social value of urban squares and wondered if you could spare 30-45minutes to answer a few questions.*

THEME 1 The users' usage experiences, usage purposes, and satisfactions of urban squares in Guangzhou

Q1.1.1 In your mind, do the squares you saw in China currently have similar appearances and characteristics or diverse appearances and characteristics? (Please tick one box from below)

- 1) Similar 2) Diverse

Q1.1.2 If you think diverse, can you please explain the differences you perceive?

Q1.1.3 How many different types of urban squares categorised below in Guangzhou have you used? (Choose as many as appropriate)

- 1) Landmark Square 2) Civic Square 3) Recreation Square 4) Commercial Square

Landmark Square:

The prominent or well-known urban square, which is universally recognized as the significant public space, helps shape the identity of entire cities.



Civic Square:

The urban square, which is bounded by municipal facilities or buildings, is regarded as service place for public pedestrians' traffic gathering and moving.



Recreation Square:

The urban square, which is bounded by diverse functional buildings or the other urban forms, provides citizens a public space mainly for their outdoor social life and relaxation.



Commercial Square:

The urban square, which is bounded by commercial buildings, is recognized as the accessory of the buildings surround.



Q1.1.4 Are you aware of any differences amongst different types of urban squares? (Please tick one box from below)

- 1) Yes 2) Not sure 3) No

Q1.1.5 How often do you usually use urban squares in Guangzhou? (Please tick one box from below)

- Daily More than once a week Weekly Fortnightly Monthly Occasionally

Q1.1.6 Normally what is the main purpose lead you using the squares?

Q1.1.7 Do you like to make new friends in squares? (Please tick one box from below)

- 1) Yes 2) I don't mind 3) No

Q1.1.8 Do you have a favourite urban square in Guangzhou?

- 1) Yes 2) No

If yes, which is it?

Q1.1.9 If your response to Q1.1.8 is yes, how do you evaluate the degree of your favourite square's friendly atmosphere if you have? (Please tick one box from below)

- 1) Very well 2) Good 3) OK 4) Bad 5) Fairly bad

Q1.2.0 If your response to Q1.1.9 is 1 or 2, which features make your favourite square are friendly to you?

THEME 2 The users' satisfactions, thoughts, and suggestions on recreation squares in Guangzhou

Q2.1 In general, how do you evaluate the degree of squares' friendly atmosphere of urban recreation squares in Guangzhou? (Please tick one box from below)

- 1) Very well 2) Good 3) OK 4) Bad 5) Fairly bad

Q2.2 If your response to Q2.1 is 1 or 2, which features make urban recreation squares are friendly to you?

Q2.3 If your response to Q2.1 is 3, 4 or 5, how to increase friendly atmosphere of urban recreation squares in this time in your mind?

Q2.4 Can you please rank the following types of layout out of a **recreation square** according to your preference for use?

1) Isolated Type

2) Passable Type

3) Corner Type

4) Absorptive Type



Please rank them by the degree of your preference **from high-low**:

Q2.5 Can you please evaluate how the following factors affect your usage of the type of **“Recreation Square”** based on your usage habits and needs? (Please tick one for each criterion)

| | | | | | |
|--------------------------------------------------------|----------------|-----------|----------------|--------------------|---------------|
| Near home | Very important | Important | Some important | Slightly important | Not important |
| Near office | Very important | Important | Some important | Slightly important | Not important |
| Near commercial buildings (e.g. shopping mall) | Very important | Important | Some important | Slightly important | Not important |
| Near cultural buildings (e.g. museum, opera, and etc.) | Very important | Important | Some important | Slightly important | Not important |
| Easy to get to on foot | Very important | Important | Some important | Slightly important | Not important |
| Easy to get to by bus/ underground | Very important | Important | Some important | Slightly important | Not important |
| Easy to get by car and have a car parking nearby | Very important | Important | Some important | Slightly important | Not important |
| Visual permeability | Very important | Important | Some important | Slightly important | Not important |
| Good access/ linkage to its' surroundings | Very important | Important | Some important | Slightly important | Not important |
| Prosperous edge of the square | Very important | Important | Some important | Slightly important | Not important |

| | | | | | |
|-----------------------------------------------------------------------------------------------------------------------------|----------------|-----------|----------------|--------------------|---------------|
| Safety | Very important | Important | Some important | Slightly important | Not important |
| Security | Very important | Important | Some important | Slightly important | Not important |
| Human scale (Not too big or small) | Very important | Important | Some important | Slightly important | Not important |
| Has specific and defined features | Very important | Important | Some important | Slightly important | Not important |
| Has good photographic features | Very important | Important | Some important | Slightly important | Not important |
| Appropriate and clear signs | Very important | Important | Some important | Slightly important | Not important |
| The shape of square | Very important | Important | Some important | Slightly important | Not important |
| Playful | Very important | Important | Some important | Slightly important | Not important |
| Plants available | Very important | Important | Some important | Slightly important | Not important |
| Water features available | Very important | Important | Some important | Slightly important | Not important |
| Landforms and level changes available | Very important | Important | Some important | Slightly important | Not important |
| Stone features available | Very important | Important | Some important | Slightly important | Not important |
| Illumination available | Very important | Important | Some important | Slightly important | Not important |
| Appropriate paving available | Very important | Important | Some important | Slightly important | Not important |
| Seating available | Very important | Important | Some important | Slightly important | Not important |
| Sunshade(s)/ rain shelter(s) or similar structure(s) available | Very important | Important | Some important | Slightly important | Not important |
| Sculpture(s)/ art available | Very important | Important | Some important | Slightly important | Not important |
| Big screen(s) for rebroadcasting significant information available | Very important | Important | Some important | Slightly important | Not important |
| Electronic facilities for searching information (e.g. local map, social events and the other information of city) available | Very important | Important | Some important | Slightly important | Not important |
| Outdoor retail kiosk(s) available | Very important | Important | Some important | Slightly important | Not important |

| | | | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------|----------------|--------------------|---------------|
| Newspaper selling kiosk(s) available | Very important | Important | Some important | Slightly important | Not important |
| Newspaper bulletin board(s) available | Very important | Important | Some important | Slightly important | Not important |
| City volunteers' stop(s) available | Very important | Important | Some important | Slightly important | Not important |
| Fitness facilities available | Very important | Important | Some important | Slightly important | Not important |
| Stage(s) for group events/ activities available | Very important | Important | Some important | Slightly important | Not important |
| Preferred shows or performances mainly for watching rather than participation available (e.g. dancing show, singing show, skateboarding show) are available | Very important | Important | Some important | Slightly important | Not important |
| Preferred activities which can participate in available | Very important | Important | Some important | Slightly important | Not important |
| Commercial promotion events available | Very important | Important | Some important | Slightly important | Not important |
| Good atmosphere for friends' gathering and recreation | Very important | Important | Some important | Slightly important | Not important |
| Good atmosphere for family users' recreation | Very important | Important | Some important | Slightly important | Not important |
| Good atmosphere for single users' recreation | Very important | Important | Some important | Slightly important | Not important |
| The equity available (across education background, wealth, health and ethic) | Very important | Important | Some important | Slightly important | Not important |
| Robustness available | Very important | Important | Some important | Slightly important | Not important |
| Management available | Very important | Important | Some important | Slightly important | Not important |

The others (if there are, please state):

THEME 3 The users' usage features and suggestions on a particular recreation square in Guangzhou

Q3.1 When do you usually come to use **THIS** square? (When is your preferred time to use this square?) (Please tick as many boxes as you need to)

6-8am 8-10am 10-12am 12-14pm 14-16pm
16-18pm 18-20pm 20-22pm 22-24pm 24pm-6am

Q3.2 How do you come to this square? (Please tick one box from below)

By walk By bus By underground By bicycle By car

Q3.3 Normally how much time do you spend in this square?

Less 5 minutes 5-15 minutes 15-30 minutes 30-60 minutes
 1-2 hours 2-3 hours Over 3 hours

Q3.4 What do you usually do in this square?

Q3.5 Can you please evaluate the quality of this urban square you are using?

Very good Good OK Bad Fairly bad

Q3.6 Can you please state your attitude if the behaviours as follows occur in the square?

| | | | |
|------------------------------------------------------------------------------------------------------|------|----------------|---------|
| Pedestrians crossing the square hurriedly | Like | Doesn't matter | Dislike |
| People crossing the square by bicycle | Like | Doesn't matter | Dislike |
| Single lady reading alone | Like | Doesn't matter | Dislike |
| Single lady using/ playing with her phone or her personal business | Like | Doesn't matter | Dislike |
| Single lady strolling | Like | Doesn't matter | Dislike |
| Single lady people sitting and watching | Like | Doesn't matter | Dislike |
| Single man sitting and reading | Like | Doesn't matter | Dislike |
| Single man picking/ playing his phone or his personal matter | Like | Doesn't matter | Dislike |
| Single man strolling | Like | Doesn't matter | Dislike |
| Single man smoking | Like | Doesn't matter | Dislike |
| Single man people watching | Like | Doesn't matter | Dislike |
| Intimate interaction behaviour between couples | Like | Doesn't matter | Dislike |
| Families strolling | Like | Doesn't matter | Dislike |
| Parents/ Grandparents staying with their infants (0-3 years old) to enjoy the fresh air and sunshine | Like | Doesn't matter | Dislike |
| Children (3-6 years old) running and playing with the space | Like | Doesn't matter | Dislike |

| | | | |
|-------------------------------------------------------------------|------|----------------|---------|
| Children (3-6 years old) playing around on bicycle | Like | Doesn't matter | Dislike |
| Child(7+ years old)/ Young people rollerblading | Like | Doesn't matter | Dislike |
| Young people skateboarding | Like | Doesn't matter | Dislike |
| Yong people playing on bicycles (BMX acrobatics) | Like | Doesn't matter | Dislike |
| Group dance by young people | Like | Doesn't matter | Dislike |
| Group dance by old people | Like | Doesn't matter | Dislike |
| Karaoke | Like | Doesn't matter | Dislike |
| Group playing with chess | Like | Doesn't matter | Dislike |
| Friends chatting | Like | Doesn't matter | Dislike |
| Interactivity physical trainings between friends / family members | Like | Doesn't matter | Dislike |
| People eating | Like | Doesn't matter | Dislike |
| People playing with/flying kites | Like | Doesn't matter | Dislike |
| Groups watching news or TV programme by TV screen | Like | Doesn't matter | Dislike |
| Police patrol | Like | Doesn't matter | Dislike |
| Publicity activities for health | Like | Doesn't matter | Dislike |
| Square's cleaning by sanitation worker | Like | Doesn't matter | Dislike |
| Handing out free newspapers (fliers) | Like | Doesn't matter | Dislike |
| Commercial promotional activities | Like | Doesn't matter | Dislike |
| Street performance art | Like | Doesn't matter | Dislike |
| Homeless people strolling and staying | Like | Doesn't matter | Dislike |

The others (if there are, please state):

Q3.7 How would you like to see this urban square improved?

THEME 4 Interviewees' background and additional information

Finally, could I ask you:

Q4.1 Gender Male Female

Q4.2 Age _____

Q4.3 Ethnicity and identify background

Chinese

If you are Chinese: Guangzhou Citizen Non-Guangzhou Citizen

Other nationality

If you are another nationality, please state: _____

Q4.4 Do you mind to take another 10-20mins to talk more about your personal desires and needs of urban square?

1) Yes 2) No

Thanks for your assistance

Notes from interview: