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THE MEANING OF 'SOCIAL' IN MEXICAN SOCIAL HOUSING

A STUDY OF INFONAVIT HOUSING DEVELOPMENTS IN MAZATLAN, MEXICO

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To my mum, who taught me to see the best in myself

A mi mamá, quién me enseñó a ver lo mejor en mí

To my nan, who taught me to see the best in others

A mi abuelita, quién me enseñó a ver lo mejor en los demás

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P.S. Radmila and Wu-Long: it's way nicer on the other side…

ABSTRACT

This thesis explores the social housing process in Mexico, which is mainly defined by the planning, construction and provision of housing, and ends with the delivery of the dwellings, overlooking the post-occupational stage of housing. This research focuses first on INFONAVIT, a Mexican institution in charge of administering a housing fund for workers since 1972 that has received many critiques because of its disconnection from the housing process since the late 1980s, when law reforms delegated the construction of housing to the private sector. Secondly, on private actors such as developers and construction companies, who have been critiqued due to the decreasing material quality and size of the houses. Finally, on social housing residents' experiences with their houses and the built environment's impact on their everyday life.

Through an extensive qualitative approach, 19 actors involved in the housing design, planning and production process, and 50 residents in four housing projects in the city of Mazatlán, Mexico, were interviewed during a two-stage visit to Mexico City and Mazatlán. Along with the development of semi-structured interviewing, the architectural design of social housing units and the housing policies and regulations behind its production were analysed, making use of a multi-methods strategy combining direct observation, document analysis, analysis of secondary sources, and the use of photographs, architectural layouts and sketches.

The findings of this research contribute to a deeper understanding of the meaning of 'social' in social housing, while acknowledging the need for a socially responsible planning and architectural design process. Due to the multi-disciplinary theoretical basis of this study, this thesis aims to be of interest not only to researchers, but also to inform practitioners in their decisions, including planners, architects, and policy makers.

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ACRONYMS AND ABREVIATIONS

AFORE Retirement Fund Administrators

Administradoras de Fondo para el Retiro

ECUVE Qualitative Assessment of the House and its Environment

Evaluación Cualitativa de la Vivienda y su Entorno

CIDOC Centre of Documentation and Research of the House

Centro de Investigación y Documentación de la Casa

CTM Confederation of Mexican Workers

Confederación de Trabajadores de México

FOVI Housing Operation and Finance Fund

Fondo de Operación y Financiamiento Bancario a la Vivienda

CONAVI National Housing Commission

Comisión Nacional de Vivienda

Fondo de Operación y Financiamiento Bancario a la Vivienda

FOVIMI Military Housing Fund

Fondo de la Vivienda Militar

iH Habita Index

Índice Habita

IMSS Mexican Institute of Social Security

Instituto Mexicano del Seguro Social

FOVISSSTE ISSSTE's Housing Fund

Fondo de la Vivienda del ISSSTE

INFONAVIT Workers' National Housing Fund Institute

Instituto del Fondo Nacional de la Vivienda para los Trabajadores

ISA   Housing Beneficiary's Satisfaction Index

Índice de Satisfacción del Acreditado

ISSFAM   Institute of Social Security for the Armed Forces

Instituto de Seguridad Social para las Fuerzas Armadas

ISSSTE   Institute of Security and Social Services for the State's Workers

Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado

SAR   Retirement Savings System

Sistemas de Ahorro para el Retiro

SEDESOL   Ministry of Social Development

Secretaría de Desarrollo Social

SHF   Federal Mortgage Society

Sociedad Hipotecaria Federal

GLOSSARY

Colonia Minimal administrative dividisons or neighbourhoods in Mexican cities with no juridictional autonomy or representation.

Colonia popular Settlements developed through direct public or private intervention or emerged from an informal occupation, with or in process of obtaining services and urban infrastructure.[1]

Colonia residencial media Planned settlements emerged from a private or public intervention, designed and built complying with the regulations in force at the time of their completion, and including urban infrastructure and services, targeting the middle- and high-income population.[2]

Compadrazgo The reciprocal relationship in government or businesses for appointing friends or relatives to government posts sometimes without proper regard to their qualifications.

Ejido A communal piece of land and society formed by farmers. Each *ejido* had a general assembly that elects its own representatives to run and administer the farm.[3]

Ejidal Relative to *ejido*.

Fraccionamiento Literally "the act of dividing or breaking-up", which in the context of this research refers to the division and sub-division of *ejidos* acquired by private developers. Colloquially used as a noun, it is a synonym of developments built by one constructor or private developer showing a repetitive and monotonous architectural style, regardless of the income of the targeted population.

Hacienda Large landed estate used for plantations, mines or factories.

Malecón A walkway that runs along the seashore.

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[1] Connolly, P. (2005). *Tipos de poblamiento en la Ciudad de México.* Observatorio Urbano de la Ciudad de México. Departamento de Sociología Área de Sociología Urbana.
[2] *Ibidem.*
[3] Briggs, D. C., & Alisky, M. (1981). Historical dictionary of Mexico. *London: Scarecrow Press.*

Profesionista   Term used in Mexico for referring to people who have obtained a bachelor degree. A professional.

CHAPTER 1

INTRODUCTION

PREFACE

I grew up in Mexico City in the *colonia* Industrial, a *colonia residencial media* or middle-class neighbourhood founded in the late 1920s where my mum lives. She got her house after I was born and was proud of having her own home; spacious and well located in the north of the city, furnished and decorated according to her taste, always ready for organising a gathering in the living room or birthday party games in the garage. A large patio window opens from the T.V. room to the back patio where I used to play countless hours with my dog. Seventeen steps take you to the upper floor where as an only child I enjoyed the benefits of having my own bedroom and studio. Whenever my mum could she would improve something; try a new paint in the façade, change the carpet, or as she did recently, indulged herself completely refurbishing her old kitchen after she retired.

As a kid, every year we used to visit my nan in Mazatlán and stay at her huge three-story house in the city centre, where my mum and all her siblings were born. Although born in 1912, my nan's early childhood memories about the late years of the 1910 Mexican Revolution fascinated me as much as her personal history inspired me. She became widowed while pregnant and had to adapt the ground floor of the two-storey house my granddad was building for them as a restaurant to ensure an income for her and her six children. To compensate for the space utilised for the restaurant, she built a third floor that in a hot and humid city that reaches over 35 Celsius in the summer was the best place for sleeping with the windows open, keeping the bedrooms cool without the need for air conditioning. If you climbed to the top roof, which I recklessly did many times following my older cousins, you could actually see the sea and get the smell of salt and seaweed.

My auntie Chava was the first of my mum's sisters still living in Mazatlán getting a FOVISSSTE housing credit in 1988, and moving out from my nan's home with her two teenage sons and her husband, who suffered a stroke right after their eldest child was born. It was an adventure to travel for more than half an hour from the city centre to check on the new house in my auntie's yellow pick-up truck box. Since my uncle could not work, my auntie made herself an extra income selling cakes to gradually pay a freelance construction worker for building a second storey. Without missing the opportunity, my cousins and I climbed the

scaffolding to reach the top of the construction. Instead of the salty smell of the coast you got the delicious aroma of freshly baked bread from the BIMBO[4] factory located right aside the development, and instead of the sea in the distance, you could see dozens of one- and two-storey houses in a development still under construction and surrounded by *ejidal* land.

I asked my mum once, why her sisters' houses were so small in comparison to ours or my uncle's, who also lived in Mexico City, all identical even when they lived in different parts of Mazatlán, and why the internal distribution was just like in Patricia's, a cousin living in an INFONAVIT house in Ensenada, a city close to the border with the United States. Because it is 'social housing', and 'social housing' is always the same everywhere, monotonous, reduced, far from the city centre and sadly, the only choice for a lot of people who cannot afford any other type of housing. And that included many members of my family.

Many years later, I got my first job as an architect graduate in a small construction firm in Mexico City, where I was in charge of drawing the architectural layouts of every project. Even when other high-end projects were designed, social housing was the main investment, done in land owned by the firm's director and his family in a state located east to the capital. On paper, construction quantifications and estimates were 'fitted' into the firm's profit expectations. In practice, 'savings' were made swapping branded construction materials required by INFONAVIT's regulations such as paint, for made-in-site mixtures of lime and water. Residents' complaints about the quality of the houses after occupying them were dismissed as 'picky', and *compadrazgos* and 'economic agreements' made with the council's authorities, bragged as medals of honour.

Around the same time, one of the cousins with whom I used to climb up to the roof with, got a social housing unit in Mazatlán. Although smaller and farther from the city centre than our auntie's, she was thrilled to have a house of her own, proud to become independent, and relieved to stop living with her mum in another FOVISSSTE house where she and her baby daughter had to share a bedroom with her younger sister. All that joy, despite the fact she was not able to drill a hole for hanging a frame or fitting a cupboard in her tiny kitchen, since the walls were made with solid prefabricated concrete walls.

The history of every house is linked to the history of its inhabitants. Changes in people's lives, the fulfilment of their needs, tastes and aspirations, require changes or improvements in their physical surroundings many times, and when affordable, the

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[4] *The largest Mexican-owned baking company in Latin America.*

modification of their built environment can represent for some a once in a life time investment. Architecture frames those lives and its physical quality and characteristics can facilitate the adaptation and modification process, or dramatically hinder it, particularly for those with limited income.

Just as the history of a house is linked to the personal history of its inhabitants, the history of social housing is linked to the history of modern Mexico. After the 1910 Mexican Revolution, the first 'social' revolution of the 20th century, housing as a right of workers became an avant-garde revolutionary conquest decades before becoming a right of every Mexican family, or being considered in any other constitution in the world. Although thought to be an employers' obligation in the 1917 Mexican Constitution, housing for workers built with private capital did not happen until many decades later after the foundation of INFONAVIT in 1972.

Housing financed with a solidarity fund administered and constructed by INFONAVIT, aimed to benefit the most vulnerable parts of the private sector's working population at a national scale. Nevertheless, the solidarity character of the housing fund was lost less than two decades later after the implementations of neoliberal recommendations made by the Washington Consensus. Since 1992, INFONAVIT moved away from its socially committed character to become something closer to a banking organisation. It delegated the physical production of social housing to the private sector who playing along with the rules of the free market, maximised profits by pushing the physical quality of housing for workers to the minimum, and completely disregarded the post-occupation process of housing.

This work is about those two histories. The one linked to the lives of people with limited choices, income and power over their physical surrounding, who live in a built environment commoditised and measured in numbers by governmental institutions and private developers. And the other one, linked to the legacy of a 'social' movement that has gradually faded out after decades of bad practices in housing policy and implementation, disregarding the actual needs in regards to housing of those the revolutionary movement was supposed to bring 'social' justice in the first place.

1.1 RESEARCH FOCUS

This research focuses on three main topics, which will be chapter specific and that will be detailed in Section 1.3. The three main topics will be the definition of 'social' in social

housing in Mexico, the translation of 'social' into the built environment, and the experience of that built environment by social housing beneficiaries in the city of Mazatlán, Mexico.

First, for the definition of 'social', a historical perspective will be taken for the analysis of housing policies and regulations that have their basis in the 1917 Mexican Constitution. The historical approach for this topic is necessary since the 'social' character of the 1910 Mexican Revolution was embedded in many of the institutions created during the first half of the 20th century, which also sets the basis of social housing bodies such as INFONAVIT. Therefore, for an understanding of the current state of social housing policies and regulations, it is necessary to acknowledge the precedent institutions, laws and political actors.

Second, for the translation of 'social' into the built environment, a similar historical perspective will be used, analysing the workers' housing typologies implemented since the 1917 Mexican Constitution, as well as the factors that dictate the characteristics of the built environment, which in the case of the analysis of the housing and its architecture, were not considered to be limited to those emerged from housing policies and regulations.

Finally, the experience of the built environment by social housing program beneficiaries will be done focusing on the role of INFONAVIT, an institution that since its foundation in 1972 stood out from other housing institutions due to the large amount of credits provided and houses constructed for the working population. INFONAVIT moved after the 1992 neoliberal reforms, from constructing social housing financed with a solidarity fund that aimed to benefit low-income workers, to a mere housing facilitator detached from the construction of housing developments and the administering of the workers' credit accounts. The latter is the focus of this third topic, analysing how this transformation had an impact on the physical characteristics of the social housing provided before and after 1992, and on the everyday lives of residents during the post-occupation stage of housing.

The final topic, the analysis of the relation between people and their built environment, will be done avoiding a determinist approach. This research is based on the idea that people's actions and decisions are not dictated by their physical surroundings but instead, hindered or facilitated by the physical, spatial and material characteristics of their built environment, and implicitly by the decisions of policy makers, planners and designers.

The social housing typology that is of interest of this study is the one that refers to one-story single-family dwellings in reach of low-income workers, available to them for homeownership through an INFONAVIT credit. Although other typologies were available after

the creation of INFONAVIT, such as middle-rise multifamily or duplex housing, one-story single-family dwellings became the archetypical social housing unit since the late 1980s. Meant to represent a stepping point for further physical modifications in accordance to residents' needs, tastes, and aspirations, the physical, spatial and material characteristics and quality of these houses are the key issues in which this research focuses when referring to the built environment.

For the study, four social housing developments were chosen in the city of Mazatlan, one built in 1988 by INFONAVIT, and three built in 2000, 2007, and 2009 each, by private developers. For the analysis, a qualitative multi-methods approach was taken developing 69 semi-structured interviews, document analysis, direct observation in each housing project, and photographs and sketches taken and developed by the researcher for capturing the physical characteristics of the dwellings and their modifications.

This research aims to take a step back from the present approach to social housing where the design, construction and provision of housing look for satisfying the quantitative demand for housing, based on an interdisciplinary approach that acknowledges the need for a deeper understanding of the complexity of housing (Kemeny, 1992; Weber, 1992), of its multi-dimensional nature (Villavicencio, 1996, 1997; Villavicencio & Durán, 2003), and of the temporal dimension of the housing process (Stokols, 1982; Turner, 1976).

1.2 AIM AND RESEARCH QUESTIONS

The aim of this research is to understand the meaning of 'social' in the regulation, production and experience of social housing, in order to analyse the social impact of the built environment in the everyday lives of the residents of housing developments. This understanding will be done through the analysis of the values and assumptions behind the regulation, design, construction, and provision of social housing, and the identification of residents' needs, tastes and aspirations in regards to their homes. For the latter, the proposed research questions and sub questions are:

1. **What does 'social' mean in 'social housing'?**

    ~ **What was / is the definition of 'social' in housing policies and regulations?**

    ~ **How has the concept of 'social' addressed workers' needs with regards to housing?**

2. **How is 'social' being translated into the built environment in social housing?**

~ **What have been the main social housing typologies available to workers?**

~ **How has the physical production of social housing been impacted by economic and political reforms?**

~ **What were / are officials', planners', and designers' assumptions behind the production of the built environment in social housing?**

3. **How is social being experienced by residents in social housing developments?**

~ **What are the physical, spatial and material characteristics of the houses provided?**

~ **How is the built environment meeting residents' needs, tastes, and aspirations?**

~ **How do officials', planners', and designers' assumptions behind the production of the built environment in social housing compare or not to residents' needs, tastes, and aspirations?**

1.3 STRUCTURE OF THE THESIS

Following on from the introduction, the next chapter will explain the overall context of the subject of this research and the aims of this proposal. The historical evolution of social housing in Mexico will be explained from a political and economic point of view and the architectural and urban design historical perspective.

Chapter 3 will present a review of the history of 'housing for workers' and its eventual transformation to 'social housing' in Mexico, with an overview of the historical events and policy changes that had an impact in the physical production of housing. The historic review of social housing conducted for this research does not attempt to exclusively set the context for this work. This chapter will also attempt to highlight the historical events that determined the concepts, policies, and actors involved in the production of housing for workers that currently prevails in Mexico, which have not existed in a social, political, economic, historical and human void isolated from each other, but relate, overlap and have effect on each other.

Chapter 4 will present the methodological justification on which this research is based as well as the approach that has guided the research design and methods. It will explain the selection of a case study methodology and a qualitative mix-methods strategy, which will include semi-structured interviews, document analysis, photographs, sketches as well as direct observation for the collection of data. Triangulation analysis will be explained, in order to

verify and validate the qualitative analysis. This section will also address the ethical and safety issues and the power and positionality factors that were involved during the development of the research.

Chapter 5 will address Research Question One, 'What does 'social' mean in social housing?' It will analyse how the social character in the provision of housing for workers has changed since the creation of INFONAVIT in 1972. It will include an analysis of the first definitions of housing for workers and the social character of housing in policy documents prior to 1972. The considerations of housing in policy and legal documents that refer to the physical characteristics of housing will be also addressed, analysing how they have changed in relation to policy reforms.

Chapter 6 will address Research Question Two, 'How is 'social' being translated into the built environment in social housing?' by analysing the materialisation of the concept of 'housing for workers' and the concept of 'social' into the built environment. The basis of the argument for this chapter follows the chronological analysis of chapter 5 since for this research, the analysis of the built environment cannot be done without linking it to the historical political and economic context shaping the built environment. It will argue that the translation of policies and ideologies into the built environment did not always reflect the intentions of policy documents and housing regulations and that in some cases, the role of some actors in the housing production managed to imbue housing policies and housing design with individual actors' ideologies and interests.

Chapter 7 will address Research Question Three, 'How is the built environment in social housing shaping the everyday lives of residents?', exploring the dimensions of housing during the habitation process, relying upon three of the five dimensions of housing identified by Villavicencio (1996) and Villavicencio and Durán (2003) as part of their methodological proposal. It will elaborate on those dimensions exploring and analysing the different layers identified in each dimension as a result of the empirical data analysis, focusing on the residents' experiences of the four case studies selected for this research and arguing for the importance of the study of the post-occupancy process of housing.

Chapter 8 will present the conclusions of this thesis, outlining the concluding findings of Chapters 5, 6, and 7. Each research question will be reviewed and be answered with the empirical findings of this research. The theoretical, policy and methodological implications will be also addressed, as well as the recommendations for further research.

CHAPTER 2

SOCIAL HOUSING AND HOUSING FOR WORKERS: THE CONTEXT

INTRODUCTION

This context chapter will present a review of the history of 'housing for workers' and its eventual transformation to 'social housing' in Mexico, overviewing the historical events and policy changes that had an impact on the regulation and physical production of housing. The historical review of social housing made for this research does not just attempt to exclusively set the context for this work, but also highlight the historical events that determined the concepts, policies, and actors involved in the production of housing for workers that currently prevails in Mexico. These have not existed in a social, political, economic, historical and human void isolated from each other, but relate, overlap and affect one other.

Section 2.1 will cover the history of the first state housing provision programs, emerged from the need for housing of a very specific part or the population that supported the 1910 Mexican Revolution: labourers.

Section 2.2 will review the attempts for modernising the Mexican working class through architectural and urban design developed by Mexican architects, influenced by international architectural ideologies.

Section 2.3 will follow the creation of INFONAVIT in 1972 up until the neoliberal reforms implemented in 1992. During this time the housing typologies offered by the institute changed, following not only external policy influences, but also internal changes that impacted the way social housing was produced.

Section 2.4 will cover the first decade that followed the implementation of neoliberal housing policies until the moment this research was done, reviewing the impact of the 1992 reforms on the conception of social housing, and on the typologies offered.

2.1 THE FIRST ATTEMPTS AT STATE HOUSING PROVISION

By the end of the 19th century and the beginning of the 20th century, the industrialisation of western countries represented a shift in their demographics due to increasing migration from rural population to urban areas. The shift represented a constantly increasing demand for housing that, in the case of industrialised European countries, was

frequently administrated by local public institutions in charge of the production of renting public housing, which became important for the growth of the capitalist and industrial sectors. At the same time, the system of homeownership inexistent before this stage was developed (Ball, 1983) turning out to be the core element of the capitalist organization since it meant an important source of income for all the parties involved in the housing production.

In Mexico, however, the situation evolved in a different way, going through a late stage of industrialisation compared to western countries in Europe. Mexico's industrialisation evolved through an interrupted process; first during a volatile post-Colonial century that culminated with thirty-four years of President Porfirio Díaz's dictatorship, and second, after the consolidation of the 1910 Mexican Revolution. Since its independence from Spain in 1810, Mexico struggled to become a socially, politically and economically stable nation. Even though the Mexican Revolution has been considered to be the first social revolution of the 20th century that provoked economic growth, it was an achievement at the expense of the less privileged social groups (Vázquez, 1989a). These underprivileged groups were the same sectors of the population that provided support and inspired the revolutionary movement: rural workers and industrial labourers.

The Revolution brought in the creation of the 1915 Agrarian Law and, in 1917, a reformed constitution as the result of a social compromise directed at the modernisation of the state and of the capitalist economic structure in Mexico (García Peralta, 2010). Attempting to leave behind the previous 1857 post-colonial constitutional document, the reforms presented in the 1917 constitution aimed to reflect the social character of the revolutionary movement and to benefit the supporting sectors of the population, establishing the basis of agrarian reform, labour and secular education rights, and the right to housing of workers.

In relation to land, the new Agrarian Law and article 27 of the Constitution aimed to benefit the rural population and indigenous communities who, before the Mexican Revolution, were deprived of the right to own land (Vázquez-Castillo, 2004). Both documents attempted to deal with the extremely unequal distribution of land implemented during the post-Colonial era, allowing farmers to work their own land, and transferring the overall administration of land to the state, which would decide when, how, and whom it should take from or provide with land. The 1917 Constitution stated that the redistributed land, although under the control of the state, should be organised into groups of farmers, who would hold communal land known as *ejidos*. This constitutional declaration aimed to provide the members of these groups (*ejidatarios*) "individual usage rights over plots and land, contingent on cultivation",

sometimes "hereditary but [that] were not guaranteed by any form of official title, nor were the rights divisible" (Castañeda Dower & Pfutze, 2013, p. 16). The exclusive control of the state over the administering of land did not always respond to the urgent needs of urbanisation around emerging and developing cities, leading over time to an illegal sale and distribution of land by the ejidatarios, and the creation of irregular settlements around some cities (Olivera Lozano, 2005), as will be analysed in Chapter 6.

In regards to housing, article 123 of the new constitution stated housing was a right of workers from any industry or business, delegating the responsibility of providing labourers' accommodation to their employers (CPEUM, 1917). This article set the precedents of a social security and social provision system that would endure and be inherited in further documents and policies until the second half of the 20th century.

Despite the constitutional basis of the right to housing of workers provided by their employers however, there are no records of article 123 being enforced in practice (Ruiz Massieu, 1975), a situation that lasted until the early 1970s. In relation to state housing programs, Mexico's post-revolutionary stabilisation stage struggled with a deeply damaged economy where most of the governmental budget was used for the army's support, resulting in the absence of effective housing programs that satisfied the demand for labourers' housing and of the rural population's movement to urban areas (Perló Cohen, 1979). Despite the latter absence of housing programs, there were some isolated examples of state housing in Mexico City that started during President Álvaro Obregón's term (1920-1924), in an attempt to fulfil the governmental social compromise of the working class groups that supported the revolutionary movement.

The Mexican Revolution ensured the right to the creation of unions, which became first the representatives of workers, but second, governmental tools for maintaining popular support amongst the working class in a still weakened political system (Perló Cohen, 1979). Facing a lack of housing provision, union organisations and working class groups demanded financial tools to build new houses, resulting in the first attempts at creating a housing system through which the state would be able to promote accommodation to low-income sectors of the population. Nevertheless, the financial aid the government could provide was limited, and unclear about how financial resources would be distributed and to whom.

Therefore, although the legal basis for the modernisation process of the social and economic structure of the country were given in fundamental legal documents such as the

Constitution, the modernisation process was contaminated with contradictions. The discourse created by a 'social' revolution did not match with the reality of a country that pretended to embody itself in the international capitalist system, hoping to satisfy the needs of the still young industrial sector and of the general population at the same time (García Peralta, 2010). Despite the contradictions during Obregón's term, Mexico managed to go through an economic reactivation that accelerated urban growth, mainly due to migration from rural areas to cities, consequently increasing the housing demand in urban areas (Perló Cohen, 1979).

Until this point in the history of post-revolutionary Mexico, the social achievements of the movement implied in policy documents, were still under construction in practice. Despite what was stated in the Mexican Constitution in relation to the creation of a social provision system that included housing and retirement programs, it was not until 1926 during president Plutarco Elías Calles' term (1924-1928) when the first social security organisation was created. The Civil Pension Administration Law was founded as an institution for benefiting federal workers by providing credits for the acquisition of existing accommodations or the construction of new houses, a system that prevailed until President Lázaro Cárdenas' term (1934-1940), during which time the government tried to respond to the increasing housing need by building *colonias,* or working class neighbourhoods.

At this point, and in regards to the type of housing, it is not possible to write about a specific standardised typology of dwellings or housing developments provided by the state (Perló Cohen, 1979). It is possible however to observe the type of neighbourhoods and different housing typologies created during the first decades of the 20th century, since such neighbourhoods still exist. The main characteristic of some of the *colonias*, particularly those constructed during Calles' and Cárdenas' terms, was that initially these were initially informal settlements created after illegal appropriation of land, and were eventually formalised by the state. Other *colonias* were created after the expropriation of land by the government, which distributed it for the construction of new housing (Perló Cohen, 1979). The result was more than thirty *colonias* targeting the low- and middle-income working population emerged from the industrial activity in different parts of Mexico City (Reza & Covarrubias, 2013), such as the *colonia* 'Ex Hipódromo de Peralvillo' (1925), *colonia* 'Portales' (ca. 1930) or *colonia* 'Industrial' (1928).

Although failed or limited attempts of modernising workers' housing design and provision, the *colonias* built until the 1940s happened to be isolated cases of housing provision in Mexico City. Housing for workers' programs at a large scale were still absent in Mexican

housing policy and practice. The most important cities at that time, Mexico City and Monterrey, had a demographic growth above 6%; Mexico City's population was close to 2.9 million inhabitants (Garza, 2003). Until 1947, the Civil Pension Administration created by President Plutarco Elías Calles was the only state institution that financed housing for labourers not managing to satisfy the quantitative demand (Perló Cohen, 1979).

A construction sector emerged along with the idea of a modern political and economic system, the same modernity that also hit the design proposals in regards to new housing developments starting a new era in urban and architectural design in Mexico. In 1948, multifamily housing development 'Presidente Miguel Alemán' built in Mexico City and designed by Mario Pani, was inspired by Le Corbusier's principles of modernism expressed in the Ville Radieuse, in France (Adriá, 2005), becoming an example of modern housing and inspiration for architects around the world. The modernist era of housing developments ended with the construction of Nonoalco-Tlatelolco in 1964; modernism received many critiques due to its disconnection from the social and human scale. Nevertheless, the end of high-rise housing developments also happened due to the lack of a strategy at a national scale that efficiently satisfied the quantitative demand for housing.

2.3 THE CREATION OF INFONAVIT

As a response to the inability of housing organisations on responding to the demand for housing, in June 1970 a meeting of the Board for the Study of Housing was carried out in order to ascertain the views of the representatives of business and working sectors in relation to the demand for housing of workers. The Board of the Study of Housing was formed by representatives of the public sector, private sector, and workers' organisations interested in satisfying the demand for housing. The outcome of the latter meeting was a reform to the article 123 of the Constitution, modifications to the 1970 Federal Labour Law and the issuance of a law that would create a housing fund at a national scale.

The Mexican government made reforms to the constitution establishing that all employers should contribute to 5% of their worker salary for the creation of a solidarity housing fund. For administrating these resources, the Workers' National Housing Fund (INFONAVIT, *Instituto del Fondo Nacional de la Vivienda para los Trabajadores*) was founded in 1972 for working as a joint fund where workers would receive credits facilitated by the contributions of higher income workers (García Peralta, 2010). Although by 1972 there were other institutions providing credits and housing to workers, INFONAVIT immediately stood out as the most important housing and credit facilitator at a national level.

Plate 1. Facade of one of the buildings in housing development "El Rosario".

Source: www.ingenieriacivil.ws

The first housing developments built right after the creation of INFONAVIT, and financed, constructed and supervised by the institute, were located in Mexico City. 'INFONAVIT Iztacalco' (1973-1978), 'El Rosario' (1974-1985) and housing project 'Los Culhuacanes' (1975-1990) followed the same Corbusian housing model, although at a smaller scale than the modernist urban complexes designed by Mario Pani. These developments had common use and service areas, such as schools, hospitals, nurseries, commercial zones (Esquivel & Durán, 2006) and became a popular typology during the 1970s and 1980s (Villavicencio & Durán, 2003).

Housing settlement 'El Rosario' (Plate 1), in the north of Mexico City with a 237Ha extension (Duhau & Giglia, 2008, p. 207) stood out at that time as the biggest housing settlement in Latin America. 'El Rosario' was strategically planned with primary schools, secondary schools, and high-schools, as well as a public university campus, public transport, green areas, sports and leisure facilities (Villavicencio & Durán, 2003). Its design involved the participation of Mexican architects Teodoro González de León and Pedro Ramírez Vázquez.

Not all the social housing stock was being contained in housing developments as big as 'El Rosario'; there were smaller housing developments in which the outdoor and green areas became progressively smaller and the social and public facilities were eliminated (Villavicencio & Durán, 2003). Some of these housing developments were allocated in the centre of Mexico

City and some of them were part of recovery housing programs created after the 1985 earthquake in the capital of the country.

Plate 2. Buildings of housing development in Dalias street, in Mexico City.

Source: García Peralta, B. (2010)

In 1988, after President Miguel de la Madrid's term (1982-1988), Mexico was going through a political and economic crisis. Between 1988 and 1992, structural reforms anticipated the implementation of neoliberal policies that would impact on the role of the state in the production of goods and services, particularly in relation to the participation of the private sector in this process that, until this time, had been an exclusive responsibility of the state (Villavicencio & Durán, 2003).

Despite the latter, some of the housing settlements built by INFONAVIT until 1988 in Mexico City still showed a good architectural and construction quality, such as the case of housing settlement in Dalias street (Plate 2) in Mexico City (García Peralta, 2010). With regard to social housing, the transition meant changes in the scope and aims of the housing programmes being applied; on one hand, the participation of the private sector into housing production arguably turned social housing in a business, losing the social character that characterised it since 1972 (Villavicencio & Durán, 2003). On the other hand, Mexican society began a democratic transformation in which the provision of housing lost its importance since it was not seen any more as a political tool for obtaining votes (García Peralta, 2010). In

relation to housing typologies, although middle-rise housing developments kept being built around the country, low-rise single-family dwellings appeared as a new social housing model, a phenomenon analysed in Chapter 6 of this research.

2.4 THE NEOLIBERALISATION OF SOCIAL HOUSING 1992-2005

The year of 1992 represented the transference of the production of goods and services to the private sector and this included the provision of housing following the recommendations of the World Bank to developing countries through the Washington Consensus (Pugh, 2001). Public entities in charge of housing promotion like INFONAVIT still operated at this time but their role was reduced to provide credits with preferential rates that have to be complemented with bank credits and financing societies for affordable housing in order to allow workers to obtain a house. Therefore, the role of INFONAVIT and other institutions like FOVISSSTE changed from housing promoter to a housing facilitator agent; it also stopped being a joint housing fund for workers and became a source of economic resources for real estate businesses (García Peralta, 2010), as will be discussed in Chapter 5.

After 1992, the characteristics of the housing stock provided reflected the reforms in housing policies giving birth to the "INFONAVIT house" typology[5]. Large single-family housing projects or *fraccionamientos* located on the outskirts of the cities became a marketable trend due to the availability of cheap land available through free market. Private developers made much use of the single-family typology which for Mexican workers represented the opportunity of owning a home and their own piece of land (Villavicencio & Durán, 2003), since in Mexico homeownership includes owning the plot in which the house is built. The private construction sector was seen as an important source of employment during this transition, which would allow a reactivation of the national economy through a free and efficient real estate market (Harvey, 2005).

The latter change in the typology and size of the developments happened mainly because of the changes in land policies that allowed private housing promoters to buy large extensions of *ejidal* land on the outskirts of Mexico City. The reforms made in 1992 to the article 27 of the Constitution allowed the sale of *ejidal* land, thus gradually substituting its illegal acquisition, with an ordered and legal incorporation into urban development plans. Nevertheless, this reform only created an open market for real estate companies with little

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[5] *A term that not necessarily refers to houses that have been provided by INFONAVIT, but in a colloquial way expresses the visual impact these developments had in the population's perception of the growing urban areas.*

participation from public institutions (Olivera Lozano, 2005), allowing private companies to maximise the use of areas, build large amounts of houses and sell them at affordable prices while making considerable profits, with urban and social consequences that will be analysed in Chapter 6 and Chapter 7.

Plate 3. Aerial view of 'INFONAVIT houses' developments in Ixtapaluca, Mexico.

Source: www.liviacorona.com

A representative example of "INFONAVIT houses" is the urban complex 'San Buenaventura' (Plate 3), built by private developer 'Casas Geo' and located in Ixtapaluca, a municipality connected to the metropolitan area of Mexico City. Containing almost 20,000 duplex dwellings of 45 square metre and 60 square metre of area constructed for each family (Villavicencio & Durán, 2003), 'San Buenaventura' would become the largest social housing development in Latin America just like 'El Rosario' had been in the 1980s.

A direct outcome of the delegation of the production of social housing to the private sector was the detachment of INFONAVIT from the supervision of the construction of housing projects. This had consequences for the physical characteristics of the developments, gradually reducing the material quality of the housing stock, provoking increasing complaints from residents and critiques from the academic sector during the 1990s. As a result of the critiques received until the year 2000, INFONAVIT initiated a transformation process in 2001 in order to

change the way developers, housing providers and social housing beneficiaries related, turning this into a more transparent process (Ramírez de la Cruz & Arellano Gault, 2014). The latter mainly represented the creation of a register accessible to the public at a national level in 2004; a "technologic platform" and "statistical tool" for "improving housing market efficiency and urban planning, increasing the housing sector productivity, and to contribute to the creation of housing policies [...] in accordance to beneficiaries' requirements" (RUV, 2015).

For assessing quality, INFONAVIT requested J. D. Power in 2009 to create an evaluating tool for the post-occupational stage. J. D. Power, a United States company known for its consumers' satisfaction surveys in the automotive industry, designed an assessing tool for evaluating the quality of social housing at a national level called the Housing Beneficiary's Satisfaction Index (ISA, *Índice de Satisfacción del Acreditado*). This assessment is realised during the first months after the housing developments' occupation in the form of a survey, which considers four groups of characteristics with regards to the house. First, there are the physical characteristics of the dwelling at the time of delivery, the quality of the construction materials and the design of the house. Secondly, the characteristics of the settlement's infrastructure and urban and social facilities are assessed as well as the attention provided by the real estate company, in a third group. Finally, impressions about the price of the house are asked (INFONAVIT, 2011).

ISA helps INFONAVIT to maintain a database of the quality of the social housing developments nationwide and available to the general public on INFONAVIT's website. According to the institute's web page, the aim of this evaluating tool is to keep informed the present and future beneficiaries of its credits about what is being offered on the market. Every month, around 3,000 residents of different housing developments throughout the country are interviewed and the results of the survey are updated monthly. This way, those interested in acquiring a house through an INFONAVIT credit are able to know the opinion of residents of existing housing developments (INFONAVIT, 2011). In its description, INFONAVIT states that ISA also helps developers and planner to improve the quality of the houses and housing developments. However, it does not clarify how private construction and developer companies use these results or if they are obliged or not to give a solution to the problems found in the survey. The index only considers the physical characteristics of the dwellings as the aspects that compose housing, asking about the public services and urban infrastructure provided and the price of the building. It was not possible to access a transcription of the questionnaire used by INFONAVIT for this survey however, a list of the different elements considered for the

evaluation and published in 2012 are listed in Appendix A, and will be part of the discussion presented in Chapter 6.

Apart from the assessment made by INFONAVIT, there is the Centre for Investigation and Documentation of the House (CIDOC, *Centro de Investigación y Documentación de la Casa*), a civil organisation that since the year 2004 has been dedicated to keeping track of the development of housing production. This is an organisation created with the support of public institutions like INFONAVIT and the Federal Mortgage Society (SHF, *Sociedad Hipotecaria Federal*), and works in collaboration with Mexican private housing developers and construction companies such as Consorcio Ara, Casas Geo, SARE Holding or CEMEX, the latter a global leader in the building materials industry (CIDOC, 2008). CIDOC's main objective is to keep track of the development of housing production and to develop and promote research done in regards to housing so the public institutions and private organisations involved in the housing production can access and use better tools for the design and decision making process (CIDOC, 2008).

Since its creation, CIDOC has published an assessment of national housing production, expressing in its 2010 report the challenges of the present private sector. This report considers challenges in regards to environmental sustainability, financial advisory services to the residents, regulation of the provision of land and housing, urban infrastructure, and funding reforms. CIDOC also considers the complexity of the housing problem, recognising not only the necessity for finding better construction methods and financial tools, but for understanding housing at a community and individual level (Fundación CIDOC & SHF, 2010). The concepts included in CIDOC analyses acknowledge the complexity of the housing problem, considering both the material and practical aspect of housing and the social and human aspect of it. Nevertheless, in CIDOC's reports there are no analyses that address the social dimension of the built environment or the implications of the architectural design of social housing for the everyday life of people.

It is worth highlighting however the creation of another assessment tool in September 2011, the Qualitative Assessment of the House and its Environment (ECUVE, *Evaluación Cualitativa de la Vivienda y su Entorno)*. ECUVE is a 'qualitative' assessment of housing created by INFONAVIT, working along the National Housing Commission (CONAVI, *Comisión Nacional de Vivienda*) and the Ministry of Social Development (SEDESOL, *Secretaría de Desarrollo Social*) that looks to evaluate through the residents' perceptions not only the physical characteristics of the house but the opportunities the house has represented in terms

of quality of life improvement (INFONAVIT, 2011). Similarly to ISA, it was not possible to have access to detailed information about the number of interviewees, how often they are being made, or to specific information about the survey. Still, a list of the elements covered in ECUVE are shown in Appendix B as they were available on INFONAVIT's webpage until 2011, and impossible to find online at the time of writing. Assessing housing from a broader social perspective is a growing tendency in Mexico but it is necessary to argue for a deeper understanding of the relationship between people and their built environment and the social implications of architecture in social housing. The lack of consideration to these concepts in the present evaluations of housing could be attributed to the recent appearance of these evaluation tools.

At present, the construction and promotion of social housing is still dominated by private actors that constitute the Índice Habita (iH) that is listed in the Mexican Stock Market (BMV). The iH is a stock unit composed in 2012 by private companies such as Corporación GEO, Desarrolladora HOMEX, URBI, Consorcio ARA, SARE Holding and Consorcio Hogar. At the moment of the completion of this thesis, only Consorcio ARA, Consorcio Hogar and SARE Holding constitute the iH, since the other developers have had financial difficulties that stopped them from achieving the BMV's standards since 2014 (BMV, 2014). These are actors that still produce social housing at a large scale, determining both the architectural and urban design of the housing developments, limited however, by INFONAVIT's and other housing institutions' credits, which dictate construction costs.

Finally, the concept of 'social housing' appears to be fading out in recent years since the creation of a new Housing Law in 2006, where the concept of housing for workers and its link to 'social housing' has disappeared. The term 'social' shifted to the 'social production of housing', a concept that although it prioritises the satisfaction of the demand for housing from the most vulnerable parts of the general population through self-help and auto-construction programs. This continues with a selective character, now delegating the responsibility of the production of housing not to the private sector, but to the population itself. Housing for workers or 'social housing' has been merged into the real estate market and completely turned into a commodity, as will be discussed in Chapter 5.

CONCLUSION

This chapter has broadly presented the historical, economic, political and social context of this research, highlighting events that occurred before and after the limits of this

research, which are considered to have an impact on the way housing for workers and social housing has been conceived, produced and designed since the beginning of the 20th century.

This chapter has reviewed the first attempts of housing for workers, which revealed the European influence in the design of company towns, an influence that continued during the first half of the 20th century, as part of the functionalist and modernist architectural movement, which will be discussed in Chapter 6. It also highlighted the importance of the Mexican Revolution and its 'social' spirit on building the basis of a modern and industrialised nation, which took pride in labourers and farmers as part of the new governmental system's 'social discourse' in the following decades, a topic discussed in Chapter 5. Finally, it reviewed the history of INFONAVIT; its creation in 1972 and the policy reforms related to land and housing that in 1992 transformed and translated the concept of 'social housing' and 'housing for workers' into the monotonous and repetitive housing projects, whose urban and social consequences have been poorly understood by designers, planners and developers, as argued further in Chapter 7.

The next chapter will present a literature review of the topics that are relevant for this research will be presented; overviewing the academic discussions about the meaning of 'social, the socio-spatial dialectic, and the relevance of a historical perspective and the consideration of temporality in housing research.

CHAPTER 3

THE DIMENSIONS OF HOME, HOUSE AND HOUSING

INTRODUCTION: AN INTERDISCIPLINARY APPROACH

Housing policy, the house, and the home occur at different scales and in different dimensions involving the study of the institutions that regulate it, the people who inhabit it, and the built environment that frames it. Housing policy research has focused on public or social housing regulations (Donnison & Ungerson, 1982; Malpass & Murie, 1994; Priemus & Dieleman, 2002), social mix and social exclusion (Galster, 2007; Musterd & Andersson, 2005), housing market and real estate (Carn, 1988; Goodman & Thibodeau, 1998) and residential choice (Ærø, 2006; Bhat & Guo, 2007; van Ham & Manley, 2009). In relation to the home, studies have focused on a phenomenological perspective (Dupuis & Thorns, 1998; Pallasmaa, 1995; Sixsmith, 1986) meaning of home, place attachment, and identity (Altman & Low, 2012; Moore, 2000; Proshansky, Fabian, & Kaminoff, 1983), or the meaning of home from the analysis of the absence of it (Kellett & Moore, 2003; Somerville, 1992; Tomas & Dittmar, 1995; Watson & Austerberry, 1986). The analysis of the production and design of the house has been approached from the mass production process and standardisation point of view (Ahadzie, Proverbs, & Olomolaiye, 2008; Hooper & Nicol, 1999; Noguchi & Hernández-Velasco, 2005), and construction materials, construction methods and costs, and sustainability (Bourassa, Hoesli, & Sun, 2006; Monahan & Powell, 2011; Osmani & O'Reilly, 2009).

The variety of topics covered at different scales shows that framing the study of housing in one field or discipline is a difficult if not impossible task. Nevertheless, calls for integrating different points of views and approaches in housing studies have been present since the late 1960s (Weber, 1992). Since then, it has been argued the study of t housing require the involvement of disciplines such as social psychology, planning and design, home management, interior design, finance, and economic disciplines. Despite Weber's acknowledgement of the multidisciplinary nature of housing, his review responded to the rapidly urbanisation the world was going through during the second half of the 20th century. Therefore, Weber's review mainly focused on high residential mobility, home ownership, quality of the environment and residential sprawl, and environmental pollution. Private market and public policy interfaces, technologies applied to housing, environmental and safety issues, behavioural and consumption issues were identified in Weber's review, being

behavioural studies with a sociological emphasis the dominant subject of study since the late 1960s.

In another review but with a similar approach, Kemeny (1992) underlined the growing concern over housing shortages and supply, housing policies and housing markets, but highlighted that debates in regards to the study of housing from the social sciences field, have been neglected. In this regard, he stated the need to "consciously re-integrate housing into broader issues of social structure" (1992, p. xvii), and to acknowledge the relationship of housing with other disciplines and more sense of reflexivity when examining the epistemological grounds of what it is being done. By integrating housing into other disciplines it will be possible to contribute to a richer and deeper understanding of housing issues. Kemeny's proposed definition of housing studies considered the social, political, economic and cultural relationships that constitute the provision and utilisation of dwellings. Therefore, the narrow approach to housing as a material structure made with brick and mortar has to be avoided and the interaction between spatial and social dimensions have to be taken into account.

This interaction between the spatial and social dimension in housing, is also highlighted as necessary to study by Franklin (2001), who agreed with the possibility of involving other disciplines that could help to understand the "more amorphous level at which people experience, relate to, and dwell in their environments" (Franklin, 2001, p. 79). Franklin suggests to revaluate the discourses on housing from a policy, urban and architectural design, and a sense of place perspectives detached from a purely positivist approach. The amorphous level considered by Franklin (2001) includes the study of the subjective perception and experience of housing, which can be included in housing studies while criticising the valorisation of prescriptive policy studies and the areas of housing practice firmly rooted in positivist analysis (Jacobs, 2002). For Jacobs, there is a need in the realm of housing to conceptualise housing as the scenario in which residents interact, recognising that "people have the unique capacity to interpret, create and subvert aspects of planned development envisaged by policy makers" (Jacobs, 2002, p. 103).

The abovementioned approaches hold in common the acknowledgement of the need for a multidisciplinary approach to the study of housing, in order to obtain a deeper and holistic understanding of it. An understanding that acknowledges housing as the outcome of policies and regulations that materialise in houses that frame the everyday life of people, for whom homes have meanings beyond the provision of shelter. Based on the latter, this

literature review will present an overview of the different approaches found in the literature for understanding and studying the concepts that are the base of this research, which relies on a multidisciplinary approach.

Section 3.1 will present a review of the definition of the 'social dimension' of housing, and of 'social' in social housing. For both terms, this review will focus on the one hand, on the definition of housing as a 'social' right available through employment. Second, the concept of 'social' will be reviewed as linked to the human and subjective aspect of housing, exploring the meaning of home and everyday day life.

Section 3.2 will provide an overview of the literature related to the relationship between people and their built environment. First, it will review the different approaches to the understanding the latter relationship, beginning with an overview of environmental determinism and possibilism, and following with a review of the literature about probabilism and the socio-spatial dialectic. Second, it will review the study of the impact of architecture on the everyday life of people, and the values and assumptions behind the architectural design process.

The review of the literature for Section 3.3 will refer to the concept of temporality in housing. It will start with an overview of the arguments related to the inclusion of historical perspectives in housing studies at a macro scale, for understanding the social, political and economic processes in the planning, regulation and production of the built environment. It will follow with a review of temporality at a micro scale, considering the post-occupational stage of housing during which people modify and adapt their homes in accordance to their needs, tastes and aspirations. In this second part of the review, the focus will be on post-occupational housing studies, the personalisation of housing, and design and spatial flexibility.

3.1 THE 'SOCIAL' AND THE 'SOCIAL DIMENSION'

The lack of a definition of 'social' in the literature in relation to social housing is due to the diversity of approaches through which is regulated, planned and implemented around the world, as well due to the ambiguous nature of the term. This review does not attempt to establish an ultimate definition of 'social' in social housing; instead, it attempts to highlight that in order of improving housing regulations and policies, a deeper understanding of the meaning of 'social' in social housing is necessary (Cowan & McDermont, 2006; Norris & Fahey, 2011).

Bruno Latour (Latour, 2007) suggested that within the discussion of 'social', it is necessary to understand the complexity of the term, since it does not refer to an absolute definition. 'Social' is not a "homogeneous thing" (Latour, 2007, p. 5), but the link between a sequence of elements that per se, are not considered strictly 'social' (Latour, 2007), just like the three-part focus of this research, which includes not only people and their expectations, but objects and their physical characteristics, and regulations and their consequences on the built environment. These three elements that resonate with Henri Lefebvre's (Lefebvre, 1991) ideas of the "perceived-conceived-lived" triad, materialise in the type of housing of interest in this research, that works as the place of assemblage for the associations between the heterogeneous elements "glued together" by many other types of connectors" (Latour, 2007, p. 5), such as residents' needs and aspirations, professionals' values and assumptions, and the political and historical events.

Nevertheless, the elusive nature of 'social' can also be understood from a context dependent analysis of how social housing has been regulated, implemented and put into practice. This was an approach taken by Priemus (1997), who identified the 'social' attributes of the European rented housing sector from what was provided in practice; from an analysis of the social housing financing programs, market trends and the characteristics of the targeted population, Priemus considered that for rented housing to be 'social' its rent level should be considered to be below the market prices, for example. Following the latter approach, for this research the concept of 'social' in social housing will be reviewed focusing first, on the nature of social housing as 'social right'. The importance of this characteristic relies on the link between 'social' and 'social housing' in the Mexican context emerges from the nature of housing as a 'social right' since it is a right accessible through employment benefits and social provision programs.

3.1.1 THE 'SOCIAL' AND 'SOCIAL HOUSING'

As above-mentioned, depending on the country the 'social' character of housing may refer to different types of home ownership, housing provision, architectural typology, residential mobility or affordability. The variety of definitions given in different countries makes it hard to find common issues regarding policy regulations, design, affordability and the nature of the client group considered within the social housing programs. Different definitions are used throughout the world and may refer to ownership, whether or not rents are below the market levels, the funding or subsidised system through which it is provided or the purpose for which housing is provided. There are definitions throughout Europe that particularly refer to

issues about the position of co-operatives, time limited subsidies and the role of private suppliers of social housing (Scanlon & Whitehead, 2007).

The profile of the provision of housing also differs across countries in relation to the age of the housing units, housing type and the percentage of it in the different states. Some countries support home ownership through tax incentives and some provide help with the housing costs to low-income homeowners (Ditch, Lewis, & Wilcox, 2001). In some countries, social housing may be considered synonymous with post-war industrially built estates. Social housing may serve various client groups; in some it is tenure for the very poor part of the population while in others, it is aimed at low-waged working families or the middle classes and when this criteria is applied, the poor are accommodated in different locations not considered social housing estates (Scanlon & Whitehead, 2007).

Overall, the previous approaches see social housing as the solution to the housing demand provoked by demographic and economic pressures. Nevertheless, there has been also a tendency in Europe to create new social housing on mixed tenure sites and to insert social housing in existing stock to use public facilities more effectively (Musterd & Andersson, 2005; van Ham & Manley, 2009). The so-called 'very social' sector is offering temporary and sometimes precarious accommodation through housing associations and charities. The role of this concept of temporary housing is growing and it refers to the provision of housing to the most vulnerable social groups such as homeless people, ex-addicts or female victims of domestic violence (Hegedüs, Eszenyi, & Teller, 2009; Loison-Leruste & Quilgars, 2009). Although the nature of these social groups is not comparable to the concept of social housing in terms of income, in political terms it is linked to the idea of who is the main client group: low-income working households or the most disadvantaged members of society (Scanlon & Whitehead, 2007).

In relation to social relations within social housing, problems of segregation are a matter of concern across social rented sectors. Because of poverty, ethnic minorities live disproportionately in social housing, often in large estates, like the case of France, and with restricted access to other tenures. Ethnic minorities and their residential patterns have an important role in political debates in countries where concentrations of particular groups are being seen as problematic (Scanlon & Whitehead, 2007). Social housing in this context, relates to the provision of housing for long-time local residents and for those considered in greatest housing needs, such as immigrants with few or no local ties.

Like in Europe, the actual debates in regards to social housing in Mexico include discussions on supply, housing policy and client groups, mixed communities and segregation, tenure and funding. Despite the differences of the approach to housing provision, types of tenure and client groups, the overall tensions and pressures across the world are similar. The current emphasis in social housing debates in the academic literature is on partnership and mixed communities and the segregation of vulnerable social and ethnic groups. Even when social housing appears to have an important role in the political rhetoric, few countries have identified funding streams to ensure the necessary investment to meet the need for affordable housing (Scanlon & Whitehead, 2007).

Particularly in England, there are discussions on what is needed to provide a "decent home for all at a price within their means" (Hills, 2007, p. 16). There is recognition of the decline of the social housing sector since the 1980s, become more tightly constrained and focussing on those in greatest needs. This has brought a change in the composition of tenants; now they are more likely to have a low income and be unemployed in comparison with the past (Hills, 2007). Social housing in England was provided by charitable non-profit organisations that specifically looked to address the problems of particular groups like those living in insanitary accommodation, unsafe housing and women. The provision of housing refers to the offer and deliverance of completed products to families by a sophisticated network of lenders, developers and title companies.

In contrast, in developing countries such as Latin American countries, 70% of housing investment occurs progressively, meaning "households acquire land through purchase or invasion and gradually improve the structure and legal tenure, and lobby for basic services" (Ferguson & Navarrete, 2003, p. 309). In regards of social housing, governments in Latin America deliver subsidised housing units with below interest rates. The money for social housing programs traditionally comes from social security schemes that in practice resemble salary taxes.

As mentioned above and presented in Chapter 2 as part of the context of this research, the 'social' character of social housing in Mexico has been historically linked to housing for workers, since housing was considered in Mexico a 'social right' before a 'human right'. The United Nation's Declaration of Human Rights states that everyone has the right to adequate living standards, including health, education and housing (UNDHR, 1991). The definition of adequate housing has been widely discussed mostly due to the impossibility to attribute a universal definition to adequate housing (del Rivero & Romero, 2010; Leckie, 1989) . The

academic discussion in regards to the right to housing has tried not only to define its adequacy but also to advocate for a commitment to ensure the right to housing itself (Bratt, Stone, & Hartman, 2006; Hartman, 1983, 1998). Other studies have focused not only on housing as a 'universal' right, but particularly as a 'social' right (Bengtsson, 2001; Carbonell, 2001; del Rivero & Romero, 2010; King, 2003) due to housing being part of 'social provision' programs available through employment.

Despite social housing in Mexico implies the provision of newly finished dwellings accessible to those with a job, social housing has also reflected and aggravated hierarchies and class divisions by amplifying 'social distances' (Bayón, 2012; Massey, 1996). Stigma is an attribute that reveals the complexity of social and spatial problems that commonly characterise deprived or deteriorated neighbourhoods (Hastings, 2004), and it has been widely discussed in the literature in relation to social housing and housing estates. Large modernist social housing estates reflected the pinnacle of optimism of Utopian thinking when planners and architects believed in their ability to make and change society, but despite the latter, the development of the housing estates through time generated, and were the location of, socio-spatial problems. In some of these housing projects, the socio-spatial stigma is associated to a poor design that does not facilitate the development of a sense of territoriality, self-identity and community, as observed in North American housing projects such as Pruitt-Igoe in St Louis, Missouri (Campkin, 2013). Campkin attributes the failure of modernist housing projects not only to the deterministic ideology behind the design of modernist housing developments, but also to the lack of institutional sensitivity in relation to the needs of socioeconomically disadvantaged residents (Campkin, 2013).

Despite displaying a different architectural concept, social housing developments in Mexico share with modernist housing estates a deterministic design ideology, although not as optimistic as that of the first half of the 20th century, as it will be discussed in Chapter 7. Examples of the consequences of stigma linked to the location of the housing developments observed in European housing states include vacant houses, empty shops, friends or relatives reluctance to visit, and services not delivering to the area (Wassenberg, 2004). These examples were commonly discussed by residents interviewed and particularly observed in 'Santa Fe', a housing development in Mazatlan not chosen as a case study due to safety issues, as is also discussed in Chapter 7.

The urban marginalisation stigma linked to the 'social' in social housing that will be also discussed in Chapter 7, reveals the urban paradox that prioritises low-density urban

design solutions for single-family housing estates, located on the outskirts of cities and on cheap land, a recurrent urban syndrome of Latin American cities (Esquivel & Durán, 2006; Sabatini & Soler, 1995; Trivelli, 2014). This urban marginalisation and urban stigma has been also acknowledged as an outcome of the delegation of the production of social housing to the private sector a topic discussed in Chapter 5 and Chapter 6 of this thesis, where the urban location of social housing is primarily dictated by the free market, and the private sector's interests. The delegation of the production of social housing in 1992, emerged from the need to override Keynesian state planning that limited workers' choices with regards to housing (Villar Calvo & Méndez Ramírez, 2014), and was replicated again in 2006, when the concept of 'social housing' disappeared from the Housing Law, and hence the term 'social' is now associated with self-help and self-construction, delegating again the physical production of housing, this time to the low income population without access to housing programs.

Housing is considered a human right following the Universal Declaration of Human Rights (UNDHR, 1991) not limited to the satisfaction of the need for shelter. Rather, it is seen as an asset through which people are provided with security, peace and dignity as well as an integral link to other human rights, and backed up by other universal rights documents[6]. Additional to the latter attributes, housing as a universal human right is supposed to be accomplished with different forms of adequacy determined by social, economic, cultural, climatic or ecological factors, or to an adequacy of privacy, space, security, lighting, ventilation, basic infrastructure and location, all at a reasonable cost. At the same time, other aspects of the right are taken into account in relation to legal security of tenure, availability of services, materials, facilities and infrastructure, affordability, habitability, accessibility, location and cultural adequacy (UNDHR, 1991).

Particularly as a social right, housing has been reviewed in the literature as having emerged from its relationship to the rights that "instead of being satisfied through an abstention of the obliged subject (mainly the state), they require a positive action, normally translated into the benefit of a good or service", which refer to economically measurable goods or services (e.g. unemployment subsidies, sickness or age, health, education or housing) that

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[6] *Housing is stated as a human right also in the "International Convention on the Elimination of All Forms of Racial Discrimination" article 5 (e) (iii), in article 10 (f) of the "Declaration on Social Progress and Development", in section 3 of the "Vancouver Declaration of Human Settlements", in the "Convention on the Elimination of All forms of Discrimination Against Women" in article 14 (2) and in article 8 (1) of the "Declaration on the Right to Development and the ILO Recommendation Concerning Workers' Housing".*

groups or individuals have the right to, but can also have access to if it can be afforded, even from private providers (Cruz Parcero, 2001, pp. 90-91).

However, within the constitutional analysis of fundamental human rights, Carbonell (2010) acknowledges that housing is possibly the one that has been paid less attention when compared to studies made about freedom of speech, discrimination or the natural environment. In the same vein, Pisarello (2003) claims that in the legal realm "the dominant tone of the reflections (on housing) has been of resignation, and the right to housing often appears displaced to the evanescent world of ethic aspirations with scarce legal relevance" (Pisarello, 2003, p. 19). The displacement of the legal consideration of the right to housing could be equally valid in the analysis of the built environment in housing when discussed as a right, where concepts like habitability, privacy or flexibility are considered to be features of little relevance in the practical world.

3.1.2 'THE 'SOCIAL DIMENSION' OF HOUSING: THE HOME AND THE EVERYDAY LIFE

For the purpose of this research, housing is not only seen as the object that provides shelter but also as the physical object that has an effect and shapes the everyday life of people and to which they feel emotional about. This research considers that architecture frames the lives of people and the extent to which it shapes it, is also related to the socio-economic background of those who inhabit it; real homes exist in physical spaces that are also socially constructed (Blackmar, 2007). Therefore, for this section the concept of social dimension will be reviewed including the meaning of home, and of the everyday life activities within the house.

Firstly, the home is more than walls, a roof and a floor, the concept of home includes the dwelling and its surroundings (Kent, 1995; Westman, 1995). Even though the house is the physical aspect of the dwelling, the shelter and the home, it is also the entity that represents symbols and feelings that bind us to places and things. Home is a diffuse and complex condition which integrates memories and images, desires and fears, the past and the present (Pallasmaa, 1995), in other words, culture and tradition.

The home is also a valuable personal possession. People feel possessive about spaces according to their scale. The boundaries between the own space and the outside allow the shaping of their social space. The home is the personal or family space in which others enter only by invitation, within its boundaries lays a feeling of belonging; feeling to belong or not to belong contributes to the shaping of social space. The clear boundaries provide the feeling of

owning a territory that should be clear, crossing boundaries from a space in which one has control to somebody else's space, can create anxieties (Sibley, 1995).

The meaning of home can be understood from the activities that occur within its spaces and as a non-specialized space capable of varying functions. Besides the concepts of shelter and refuge, the values and the feelings, the home can be defined by the various ways it can be used. Within a low-income community, the house can be turned into production place or a market site; the need for an alternative income source can turn the house into a financial institution sheltering activities that play an important role in the maintenance or consolidation of the dwelling. Domestic enterprises transform the house into a centre for commerce and meeting place and this symbiotic relation has spatial and social implications that provide vitality to the community because of the multiplicity of uses of the house (Kellett & Tipple, 2000).

An interpretation of the home comes from the understanding of the function for their residents (Sebba & Churchman, 1986). The home represents an area of control for the individual and the possibility of owning a space over which others have no jurisdiction. The home is a physical framework that allows a freedom of behaviour to the family and a place of self-expression, with a unique meaning for each of the residents and the possibility to be oneself. The home also gives the feeling of security of permanency in the home, a place from which nobody can force one to leave.

Sebba and Churchman (1986) found the latter elements in their research convinced of the importance of the function of the home for its residents and on the assumption that "the family is not a homogeneous unit and, therefore, no member can express the entire family's opinion" (Sebba & Churchman, 1986, p. 8). With this in mind, it is worth to notice the differences in the responses from children and parents on issues related with freedom of expression and control inside the home. Where parents understood the possibility to express themselves and control the events around them through the modification of their physical environment, children stated that their self-expression is due to the ability to act freely in the home. Men consider the home as an area of individual control to a greater extent than women and the latter; consider more important the home as a physical framework for the institution of the family than men.

Home has a physical and societal character not only in relation to the spaces needed for everyday activities but it also has psychological and social meaning and these ideas can be

emphasized differently according to age and gender and it is in relation to the latter, where the "uniqueness of the home" lies (Sebba & Churchman, 1986, p. 21), allowing its occupants to have control over their lives and behaviour within the space.

Similarly to Sebba and Churchman, Watson and Austerberry (1986) find in the elements that constitute the meaning of home, the idea of it as an area of control, a physical framework for everyday activities and a place for self-expression and where to feel safe. However, Watson and Austerberry and Watson develop their understanding of the meaning of home for women in Britain through their reflections about the absence of it.

Through the description of their ideal home, homeless women refer to material conditions, standards of the house and to the quality of the furniture, cleanliness and the expectations they have about the size of it and its decoration. Homeless women declared to feel unable to express themselves as individuals in a permanent base and with possessions of their own. Women that lacked of a permanent residence declared feeling powerless and destitute and that the idea of owning a place to live would provide them with a sense of safety, comfort and warmth. Their definition of home also included social relations, control and privacy issues, also including concepts of family, friends, somebody to take care of and to take care for them; a private place for resting themselves and not being told what or when to (Watson & Austerberry, 1986).

Kellett and Moore (2003) look as well for an understanding of the experience and meaning of the home from the absence of it. Analysing the phenomenon of homelessness a definition of the home as an instrument through which a sense of belonging and stability as well as social inclusion is achieved. The description of homeless people in regards to their feelings states the importance of the home as a link between people and place. Homeless people feel "disengaged from the culture that binds into society" (Kellett & Moore, 2003, p. 126).

The understanding of the meaning of home from the perspective of its absence helps building the concept of home beyond the physical shelter to a tool that allows people to achieve social stability and inclusion. For homeless people, the lack of a home can be interpreted as the detachment from society characterised by the lack of association and ties that link people into their social structures (UNCHS/Habitat, 2000).

Home is a powerful social and cultural ideal and it can be conceived in different ways by different groups according to gender, age or socioeconomic background (Kellett & Moore,

2003). However, despite the cultural, social or demographic characteristics of people, the definition of home from a homelessness perspective helps to clarify that home has an ideological background as well as a material basis (Watson & Austerberry, 1986).

The dwelling as an expression of identity has been also explored in housing studies. Based on the idea of possessions and physical environments as instruments of expression beyond behaviour and verbal statements, Hauge & Kolstad (2007) explore the concept of home as the object through which the expression of individual and social personality can be read. The relationship between people and the physical environment is revealed in the level of awareness of the communicative aspect of the built environment and to what extent people feel identified with it.

In contrast to discussions about the concept of 'home', the definition of house addresses concepts such as the material characteristics of the dwelling, the access to public services and urban infrastructure or the permanency of the house. In contrast, home includes the expression of the values and attitudes with which societies and individuals relate to their surroundings (Pallasmaa, 1995) and embodies emotional, personal and cultural meaning which is often neglected from housing design and provision in Mexico, satisfying the quantitative deficit through systematized mass production of housing. This research argues for the importance of the definition home, and will attempt to fill the gap between the emotional, personal and cultural aspects of housing and the designed built environment, arguing that the satisfaction of the need for housing should not be limited to the satisfaction of the need for shelter.

Secondly, the sense of everyday life in which this literature review is interested is not related with those activities that, among human societies are invariant. Human beings must sleep, eat and groom however, the latter activities are not performed in the same way, with the same things or in the same circumstances (Heller, 1984). It is in how these activities happen that this section of this literature review is interested in and how the physical, material and spatial characteristics of the house hinder or facilitate such activities.

As well, "every human being, whatever his [sic] place in the social division of labour, has his [sic] own everyday life" (Heller, 1984, p. 3). This everyday life is not the same for all individuals in all the layers of societies and has particular characteristics among the residents of social housing developments. It is in this argument where the demographic, social and

economic characteristics of the residents play a role in the interaction between the everyday life and the built environment.

The everyday life is relevant for this review, since the success of housing policies is usually assessed from a quantitative perspective, measuring the amount of houses being built, provided and acquired by the demanding population. This approach often forgets that housing consists of a process that does not end with the deliverances of the dwellings, but continues with the occupation, residents' evaluation, maintenance and personalisation of the houses (Turner, 1976). Therefore, a criticism of the present social housing policy and the approach to the housing deficit through quantitative measures is that this perspective has forgotten to take into consideration the relationship between the everyday life of the inhabitants and the spatial, physical and material characteristics of mass produced housing.

The term everyday life in the sense of the interest of this research, refers to what Jonathan Rigg describes as the representation in microcosm of core social issues (Rigg, 2007). With this concept, Rigg looks to understand the personal geographies, which make ordinary people and their lives extraordinary, appreciating beneath quantitative data, averages and measures. This refers to the analysis of the social implications of the spatial, physical and material characteristics of social housing going beyond the quantitative structure of averages, means and statistics, trying to find the "degree of difference and variability that challenges whether such summaries can be regarded as representative of the collective experience and vice versa" (Rigg, 2007, p. 2). This way, this research intends to look at the inhabitants of social housing developments not as mere figures but as individuals, whose lives are influenced by the physical environment and which hinders or facilitates their everyday life experience at the same time they have an influence over their physical surrounding through processes of personalisation, modification and adaptation of the space.

3.2 THE SOCIO-SPATIAL DIALECTIC

The previous section addressed the different concepts of 'social' of interest to this research; covering definitions which emerged from policies and their implementation, to the meaning of home and the sense of the everyday life within the house. These concepts are part not only of the 'social' aspect of housing, but the spatial aspect of it. Housing provides a physical scenario that for Edward Soja represents the "spatiality [that] situates social life" and provides a physical place for social actions and relationships (Soja, 1985, p. 90); in other words, it gives place to the social production of space (Lefebvre, 1991).

The discussion of the socio-spatial dialectic in social sciences has been explicitly present since the 1980s (Knox & Pinch, 2014; Massey, 1985, 2013; Soja, 1980, 1985, 2009) and highlights the importance of the inclusion of space in relation to the social within geographical and sociological debates. In recent decades, the legacy of such discussions has found a place in urban studies and architectural studies (Carmona, Heath, Oc, & Tiesdell, 2003; Gottdiener, 2010; Knox, 2005; Rendell, 2006). Nevertheless, despite growing discussion related to the dialogue between the social and spatial, there is a growing disregard for the evidence gathered by these studies from architects, urban designers and planners in practice (Southworth, Cranz, Lindsay, & Morhayim, 2012) leading to, what some consider, a renaissance of determinism, or neo-environmental determinism in design related disciplines and social sciences (Judkins, Smith, & Keys, 2008).

This section will address and highlight the importance of the dialogue between people and their physical surroundings in the study of housing and. It will begin with a review of the different approaches to the design of the built environment in housing, of the urban dimension of housing as part of the social dimension, and of the importance of the presence of an architectural awareness during the planning and design of housing.

3.2.1 DETERMINISM, POSSIBILISM, PROBABILISM, AND NEO-DETERMINISM

The approach to the relationship between people and their built environment from an environmental determinist point of view influenced the study, planning and design of the built environment and the impact of it on people's behaviour particularly during the rapid industrialisation and urbanisation stages western countries went through during the 19th century.

Theories and practice based on the assumption that the quality of places and spaces influenced social behaviour were present in Howard's Garden City concept, presented in the late 1900s as the sanitary, safe and healthy alternative to the unhealthy conditions found in increasingly polluted cities (Howard, 2010). Howard in a way romanticised the 'town-country' idea that merged according to him, the best of the countryside (e.g. access to nature, healthy quality of life) and the best of towns (e.g. social opportunity, leisure options, flow of capital). Although he held ideas of social justice as necessary for a new town planning and urban movement, his work attributed the good (and the bad) of each real almost exclusively to the natural and built environment. He believed that his Garden City could represent such a radical transformation of the built environment that could revolutionise the life of society as a whole and would prepare it for a new era. Howard's idea of a cooperative socialist utopia however,

was conceived detached from what planning commissions, politicians and other authorities of his time considered to be desirable and achievable, and in which the social, economic and political goals he advocated, had been achieved (Fishman, 1982).

Howard's ideas were transferred to company town models in England in order to provide labourers with a safe and healthy environment that combined good-quality accommodations with gardens, such as William Lever's factories in Port Sunlight, and George Cadbury's in Bournville, both in Birmingham (Heathorn, 2000). Although the company town model derived from Howard's Garden City was not widely imitated throughout England, it became a popular model in the United States at the end of the 19th century and early 20th century (Crawford, 1999). Nevertheless, company towns in the United States were attributed with a negative connotation, that although they offered schools and churches within their limits, they were considered as settlements disconnected from other communities (Clark, 1916), without consideration to the urban impact of the company towns' location on the community life within the settlements.

The concept of communities for workers did not have a negative connotation in in France, where discussions about the quality of housing in the *cités ouvrières* (labourers' cities) were led by Émile Cacheux, René Vilermé and Émile Muller (Garner, 1992) during the Housing Congresses held at the Paris Exposition in 1899. There, Cacheux, an architect, hygienist and housing reformer, proposed offering housing for sale in annual payments to workers and the creation of cooperative organisations for constructing affordable housing as solutions for the unhealthy conditions in which labourers lived (Becerril & Silva, 2014). His work also included the analysis of the urban grid of Paris, which did not encouraged the building of houses for the working-class, promoted housing ownership between small proprietors (Giddens, 1991) and partial state intervention in the lower end the market in relation to single-family housing for workers (Rabinow, 1989).

Nevertheless, in both the United States and in Europe, company towns were strongly criticised; the architectural design and planning of these communities echoed the industrial paternalism that in France was helping to maintain workforces in a constant state of docility and lack of civil liberty (Magraw, 2002), and in the United States was keeping alive an obsolete and immoderate paternalism (Crawford, 1999). The deterministic approach strongly influenced urban planning and architectural design during the first half of the 20th century, particularly the modernist movement.

The Modernist movement was developed "against a background of war, revolution and social dislocation" (Gold, 2013, p. 21), which allowed the movement to maintain a paternalistic approach to the design of the built environment, although embedded in an idealistic a social agenda. Despite the modernist movement had a social, political and economic agenda achievable in principle through an urban revolution (Heathorn, 2000), the deterministic basis of its approach to design detached the social goals from the social dimension of housing, turning it into a style disconnected from the human scale.

As a radical reaction to determinism, possibilism turned the table in regards to the relationship between people and their physical surrounding. Challenging the idea that the built environment dictated people's behaviour, possibilism claimed that "there are no necessities, but everywhere possibilities; and man, as master of possibilities, is the judge of their use" (Febvre, 2013, p. 236). Febvre's claim in the 1920s has been interpreted as the opposite version of determinism, where human beings are in control and capable to do whatever they please with their surroundings, which is not the case of the central thesis of possibilism. Instead, possibilism argued that despite human options are limited when modifying their surroundings, people are capable of evaluate the options or 'possibilities' that can be achievable (Brownstein, 2012). In the middle of the two approaches, determinism and possibilism, probabilism considered that depending on the physical setting, some choices or opportunities are more probable than others (Tiesdell & Oc, 1993). Although not determining it, the built environment allows the development of a behaviour and the making of decisions that are 'situational' or contextual (Lawrence, 1987), and that depend on "subjective life stages" (Stokols, 1982, p. 191).

It is in probabilism where this research stands when understanding the relationship between residents of social housing developments and their dwellings. It aims to highlight that the interaction with our physical surroundings is not only spatially, but also temporally linked to the different life phases of people, and associated to particular goals and plans (Lawrence, 1987; Tiesdell & Oc, 1993), or as utilised in this research, needs, tastes, and aspirations. It also attempts to highlight that the power over our built environment, depends on the potential and effective choices available, which are hindered or facilitated by the characteristics of the physical settings (Gans, 1968). The potential asset considered by probabilism is the key feature that built environment professionals attribute to the built environment, creating "place potential" instead of attempting to make places (Carmona et al., 2003, p. 107). This asset is highlighted in this research as part of the analysis of the neo-environmental determinist approach to the design of social housing in the present. This last approach is raising concerns

amongst geographers and sociologist since it undervalues previous research done in regards to the relationship between people and their physical surroundings, and the complex nature of this relation (Judkins et al., 2008).

3.2.2 URBAN DIMENSION

For this research, the urban dimension of the socio-spatial dialectic relates to land consumption, the location of housing projects in relation to the city centres, the infrastructure provided within the developments, and the social cost of location in terms of mobility and social exclusion.

Villavicencio (2003) argues that the urban typology of social housing developments located on the outskirts of cities represents two kinds of problems. The first problem is related to the criteria for inserting the settlements in urban areas, revealing a lack of urban planning when setting the housing settlements in the outskirts of the cities or sometimes, imposing them in existing urban areas. The second problem relates to the social and communitarian life inside the settlements, which is hindered by internal distribution of the developments and the lack of public and sport facilities for engaging in social events or leisure activities (Villavicencio & Durán, 2003).

When located on the outskirts of the cities, the housing settlements suffer from insufficient urban and public infrastructure, hindering the development of a satisfactory neighbourhood life and interaction, a conclusion shared with Rodríguez & Sugranyes (2006) in the Chilean case. The reasons for the latter refer to a lack of connectivity with the centre of the cities; representing poor accessibility to jobs, commercial facilities, and in some cases due the lack of planning in advance, poor accessibility to publicly provided infrastructure and services. When selecting a new place to live, people's choice is influenced by the environmental characteristics of a housing settlement, taking into account aspects like the quality of housing or available amenities (Burnley, Murphy, & Jenner, 1997). The fact of moving to an outer housing area in relation to the city centre may represent the sacrifice of those decisions in order to acquire an affordable place to live.

In this dimension, the urban characteristics of the housing developments are not helping in the process of "constructing cities"(Villavicencio & Durán, 2003, p. 13) due to their location and in some cases due their disconnection from existing urban areas. This is considered the most tangible social and urban impact of these housing settlements for Paquette & Yescas (2009) and Maya, Cervantes & Rivas (2008), who also argue that the location

of the social housing complexes, particularly the ones built on the outskirts of the cities, is creating a dynamic of social exclusion, having difficulties in accessing urban infrastructure and mobility.

In other types of housing developments the location is intended to create an image of exclusivity, like in the case of middle-class and elite suburbs, that intentionally create self-contained communities with their own identity, looking to satisfy a desire for increased security (Kenna, 2007). However, in the case of social housing estates, location responds more to a convenience for the developers of the price of land and the size of it than to the idea of creating more secure or sustainable communities.

The prioritisation of price of land over people's wellbeing is argued to be pushing vulnerable groups into the least popular places, creating not only a phenomenon of residential segregation but also the feeling of exclusion from the mainstream and not belonging among the residents of these housing estates (Power & Wilson, 2000). This may result in representing the transformation of these settlements into urban ghettos, with potential social, spatial and urban deterioration (Paquette & Yescas, 2009).

The arguments presented by Villavicencio (2003), Maya Cervantes & Rivas (2008), Rodríguez & Sugraynes (2004) and Paquette & Yescas (2009) criticise and analyse the effects of the location of housing projects on the outskirts of cities and the consequences this has on the life of the residents. They refer to mobility problems and connections to the city centre, which implies difficulties for people that travel to their jobs and in some cases lack of an adequate public transport. What they do not talk about and has not been possible to find, is research done with regards to the effect of the urban integration of housing settlements that were originally located in the peripheries of the cities and now have been absorbed by urban growth. There is a need for a deeper understanding of these developments and their evolution after having been absorbed by the growing urban areas of a city.

In regards to the internal distribution, size and equipment of the settlements, Villavicencio (2003) argues that housing developments in Mexico City are usually big, with an average of 400 households per development. She observes that the amount of open common areas placed in the settlements do not correspond to the needs of the number of residents, lacking public and sport facilities or amenities within the housing project. This is a spatial characteristic that according to her findings is hindering the social interaction between the residents, who cannot hold activities outside their houses and with their neighbours. Maya,

Cervantes & Rivas (Maya et al., 2008) analyse the big single-family housing developments recently built in Mexico and criticise the small amount of area place within housing developments for public use, which is not allowing social relationships between the inhabitants.

The latter arguments in regards to the size and equipment of social housing developments emphasise the need for rethinking the criteria used for determining the size and type of common open areas within social housing projects. From Villavicencio (2003) and Maya's et al. (2008) arguments it could be concluded that there is an actual need for more spaces of this nature. However, it is necessary to consider a more in depth analysis of people's needs in relation to common use areas. From another perspective, a study made in 2004 by Tames, examined the use of private and public spaces in formal and informal housing arriving at interesting conclusions.

Tamés' (2004) analysis focuses on housing projects sponsored by public institutions and informal settlements located on the outskirts of Mexico City and finds that in informal housing, more than half of the complex's area (between 54% and 63%) is used for private space against less than a third (26% - 29%) in public housing projects. Tamés defines private areas as those spaces "that belong specifically to one family or household, and which has a restricted access to that specific family" (Tamés, 2004, p. 48). Without attempting to generalise from Tamés' analysis, there is a notable difference between the areas assigned for open public spaces in a comparison of the utilisation of dwellings and public open spaces in formal and informal housing complexes in Mexico.

In her work, Tamés (2004) finds an explanation for the difference of public and private area sizes in the freedom that people have in informal settlements. This means that when land area or plot sizes in informal settlements are not determined in advance by planners but by the residents and land is "the most valuable resource [...] efficiently allocated to provide the most possible 'private' area, and there is rarely any residual or 'wasted' public space" (Tamés, 2004, p. 38). Squares and plazas are rarely allocated in informal settlements since the land use is mainly used for the construction of dwellings.

With the use of Tamés' work as part of a spatial dimension that should be taken into account in the design of social housing, it is not being intended to romanticise informal settlements and people's autonomy in the construction of their built environment. Tamés' argument has been presented in order to analyse how peoples' priorities in regards of their

spatial needs, do not match in some cases with the planners and developers values when applying a design criteria and how the design of public space within housing projects needs a deeper understanding of people's practices or aspirations.

Marie Huchzermeyer (2004) also used a similar argument in regards to a comparison she made between squatter camps in South Africa and formal housing in Brazil. Her work, similarly to Tamés', is not being used for idealising informal housing but for emphasising the direct relationship of people and their built environment even at an urban scale and how in some cases, the design priorities of planners and developers do not follow people's expectations of their built environment.

On an intervention from the government in squatter camps in South Africa in order to improve the residents' quality of housing and life, the author highlighted the extent to which some informal settlements showed a certain degree of planning, thought and solution mainly by the residents' ideas. The orderliness of some of those informal settlements did not change much after the intervention from the government since the original layout of the settlement showed a rather uniform distribution of plots, with similar areas and inner streets and pedestrian walks that connected blocks with a balanced amount of houses in each of them.

In one of the cases analysed by Huchzermeyer (2004), the community leadership insisted that the local authority in charge of the intervention, kept the original layout of the settlement that differed from the one proposed by the government. The layout proposed by the local authority proposed to change the distribution of streets and houses originally set by the residents. It was only after looking at the squatter camps using an aerial photograph that the engineers and public officers understood that the settlement had an urban design not very different from the one proposed by a professional planner (Huchzermeyer, 2004). Preserving the original informal layout also respected the intrinsic social ties built within a settlement that was already occupied. In the case of governmental upgrade in informal settlements, taking the latter into account helped to minimize the impact of the intervention over the residents, respecting the plot sizes, the location of the dwellings and the community needs and ties.

3.2.2 ARCHITECTURAL AWARNESS AND REFLEXIVITY

Architecture is the practice of framing the habitat of everyday life in a literal sense, where real life takes place within the realm of rooms, buildings, streets and cities, and in a discursively sense, where architecture represents symbols and meanings. Our actions are literally shaped by the physical elements of the built environment and at the same time,

framed by the decisions of the designers and secondly, the discourse he mentions takes the form of the narratives of the places in which we live our lives (Dovey, 1999). For the purpose of this research, this definition highlights relevance of the analysis of the architectural design since the quality of life is being decided to a certain extent by the design process.

Architecture gives concrete form to society and at the same time it is closely connected with it (Rossi, 1999) and is conceived and realized in response to an existing set of conditions that look to accommodate human activity within physical environments (Ching, 2007). For the latter, architecture could be considered the most social of arts and the most aesthetic profession (Dovey, 2005).

The designed environment in the form of architecture has a direct impact on human sense and feelings making us react unconsciously to spatial properties such as enclosure and exposure, verticality and horizontality, interior and exterior, or light and dark. Architecture affects our senses directly by simply being there and at a more conscious level, people respond to signs and symbols in their physical environment exploring it and evaluating it with their minds (Tuan, 1979). Architecture can use metaphors and turn a simple dwelling into a symbol of the cosmos and can be a teaching tool to comprehend reality (Tuan, 1977). The experience of the built environment is also based on the idea that we do not exist in isolation from our built environment but rather as part of an experienced continuum that includes our physical surroundings (Berleant, 1997).

The relationship between people and their physical surroundings in architecture is inherent although taken for granted by architects and designers. Despite architecture being a profession whose outcomes take part in the everyday material world maintaining the desire of the improvement of the world as a whole, a critique of it is that this profession has found a role for itself reducing the definition of the concepts involved in the creation and construction process to the production of imagery (Markus, 1993). This critique of architects refers to the move away architects have had, "from engagement with any social issues, even those that fall within their realm of professional competence, such as homelessness, the growing crisis in affordable and appropriate housing" (Crawford, 1991, p. 27).

Despite Dovey (2005) considers architecture to be a social art, he calls for the need for a more socially engaged architecture that joins design imagination to the public interest in the search for a better world since the physical world created and constructed through architecture becomes both a constraint and an enabler of certain kinds of life and experience.

This argument invites an avoidance of an architecture practice that "reproduces an unquestioned framework of everyday life" (Dovey, 2005, p. 31) and goes beyond the trap of the architectural aesthetic appearance and socially engages this profession as a social and political practice, which is a necessary approach to architectural design in social housing.

In this regard, the social engagement in social housing should include the extent to which housing is actually representing an opportunity for qualitatively improving the life of people at the same time as defining and identifying the elements that constitute the concept of quality of life in social housing. This task however, cannot be done by thinking that the design process of housing is the source of all the housing problems or all potential solutions. The self-reflexivity to which Dovey invites must also address the weakening and strengths of the profession due to what Crawford (1991, p. 29) defines as the contradictory identity of architecture. In accordance to Dovey, Crawford invites us to reflect on the social engagement of architecture but as well, to be aware of the "gap between individual concern and professional inertia" which represents "a barrier between the need of professional identity and the demands of social responsibility" (Crawford, 1991, p. 27).

The latter reflections also lead to question how can architects socially engage, or as Kenny Cupers poses it as the title of his work, 'Where is the social project?' (Cupers, 2014). Cupers explores three propositions in order to examine to what extent innovative architecture is currently separated from social responsibility, while presenting the possibility of a change in perspective for contemporary architecture and even the social sciences in order to rethink the meaning of 'social' in architecture. The first proposition 'from intentionality to agency', calls for an evaluation of architecture beyond the form and that addresses the human after-effects of design. In 'from ideology to materiality', Cupers invites us to reflect on architecture not only as an image of political or social ideologies, but as the materiality of the "messy politics" (p. 7) behind architecture. Finally, the discussion within 'from critique to reflexivity' aims to foster an awareness of not only the successes of architecture in relation to the social world, but also to encourage us to be humble and critical about the failures (Cupers, 2014).

The latter three propositions condense the need for an architectural reflexivity in order to find a balance between the social and aesthetic components of architecture represents a challenge to a profession that "needs to give some serious thought to renewing and refashioning its ideological premises" (Crawford, 1991, p. 44). This challenge, in the case of social housing, compulsorily includes the review of the economic and political values that are being considered during the design process.

3.3 HISTORICAL PERSPECTIVES AND TEMPORALITY IN HOUSING

Housing is a designed and built feature and it can be considered a product but, when considered as a sequence of stages involving designers, planners, constructers and occupants, housing can be also considered a process (Turner, 1976). For this research, the personalisation, modification and adaptation of spaces are actions that are part of the habitation process in housing and considers these actions of particular relevance for social housing since each one is a conscious or unconscious response to the built environment and has impact not only in the everyday life of the residents but in their family economy.

Regardless of their integrated or isolated point of view, the approach of housing studies analysed in section 3.1 have mostly focused on a very specific part of the housing realm in relation to time. Although for the analysis of housing in much of housing research sometimes requires a historical analysis of events of documents, the studies rarely consider housing not only from a policy, economic, physical or human perspective, but also from a temporal perspective.

In this regard, there have been proposals for considering housing not as a series of temporally isolated events, but as a continuous process, which problems can be better understood or approached when taking into account housing as a continuous process. An example of the latter is the work of Turner (1976), that despite the almost four decades since his contribution and many critiques to it, his work is still relevant and worth taking into account as a mean for addressing housing problems in a holistic manner and temporally informed.

Regardless of the critiques, Turner's argument that housing is a continuous process that includes what happens before and after the construction and occupation of the dwellings (Turner, 1976) is worth revisiting since regardless of the type of housing it addresses, would allow an understanding of housing since its most basic conception, acknowledging that the creation of policies and regulations have also have to be analysed in order to solve housing problems, since they will be translated into a built environment that later will frame the everyday lives of people. This approach to housing requires the acknowledgement of a temporal dimension of housing that refuses to observe housing problems and solutions as a product of immediate events, detached from the past and without consideration of future consequences.

The temporal perspective mentioned above has been part of housing studies but usually taking for granted the past and only useful for establishing the context in a discussion (Jacobs, 2001). However, an approach that is theoretically more informed about the importance of history, or of housing as a continuous process can offer a more contextualised view of the housing policy process, production and habitation.

The benefits of a historically informed approach can be summarised according to Jacobs (2001) as first, the possibility of determining patterns within what if taken lightly, can be seen as random events. Second, the chance of analysing a problem in a holistic manner, considering "the ways in which ideological processes, culture and economic factors interact and impact on housing policy" (2001, p. 128). This last point reinforces the idea of housing as an issue that cannot be analysed or understood without considering the wider context. Finally, as part of Jacobs' account, the third advantage of a historical study of housing is to obtain an historical distance that allows identifying the planned or unplanned consequences of policies over time. Through the latter approach to the study of housing, "contemporary housing research that draws upon historical sources is often much richer and more substantive inviting the reader to appreciate the continuity and changes over time that have impacted on policy" (Jacobs, 2001, p. 128).

A historical perspective drives away from a positivist tradition that transforms processes into outcomes, condensing complex realities into artificial simplifications (Fay, 2014; Tribe, 1972), which in the case of housing can be translated into a quantitative simplification of the satisfaction of the housing demand, dangerously overviewing the complexity of the processes that influence the physical or quantitative outcome or the historical circumstances that inspire such processes (Alderete, 1983)

3.3.1 POST-OCCUPANCY STUDIES

By looking for the solution to the housing problem through quantitative measures and prioritising the reduction of the housing deficit, an effective solution to the housing demand at a social scale, is not being achieved (Robles, Gómez, & Corvalán, 1996). It is not a successful strategy in regards to temporality in housing, since it reduces satisfaction of the housing deficit to just the provision of shelter extent. This approach disregards what occurs after the occupation of the dwellings, potentially producing a paradoxical situation where the housing programs create urban and social problems in the individual and communitarian lives of those who inhabit them. For the analysis of this paradox, there are approaches to the study of the built environment that consider the stage that occurs during the occupation process.

Post-occupancy evaluation (POE) or ex post evaluation of buildings, as described by de Jong and Van der Voordt (2002), focuses on the finished physical outcome of architecture. These studies evaluate the effectiveness of the designed built environment for users focusing on short-term or longitudinal analyses. POEs focus on the 'effectiveness' of the built environment for users, evaluating "the degree to which a designed setting satisfies and supports explicit and implicit human needs and values [...] of those whom a building is designed for" (Friedmann & Zimring, 1978, p. 20). Nevertheless, these studies have limitations and advantages that are worth highlighting; they are usually difficult to generalise from and are narrow in their scope, but with the advantage of aiming for a practical implication in design (Zimring & Reizenstein, 1980). The "unit of analysis" in POEs is a designed setting (p. 432), therefore, the phenomenon studied can only be explained in terms of the object or place analysed, sometimes excluding broader issues relating to the problem observed. Nevertheless, as Zimring and Reizenstein (1980) and de Jong and Van der Voordt (2002) point out, one of the advantages of POEs' findings is that they can immediately inform decisions with regards to planning or design, highlighting the positive or negative assets of buildings not only to designers, but also clients and consultants.

POEs pay particular attention to the physical quality and technical performance of the built environment, as well as to the sensory and functional characteristics of space (Clements-Croome, 2013), however, there has been a growing interest in the last decade in procuring a "more holistic and process-oriented" evaluation (Preiser, 2002, p. 9), and one that moves away from "a one-dimensional feedback process to a multidimensional process" (Hadjri & Crozier, 2009, p. 31). In this attempt to broaden the scope of POEs, (Orihuela & Orihuela, 2014) have tried to identify residents' – or 'costumers' - needs in housing projects in Latin America; by identifying these needs, it would be possible to establish quality standards that guide the design process and further post-occupancy evaluations (Orihuela & Orihuela, 2014). Despite the interest in identifying the needs of residents, this study reveals the detachment of POEs from the social dimension of housing; the approach to the understanding of the impact of the built environment on the lives of people is strongly based on 'costumer' or 'client' satisfaction about a 'product', emerged from marketing strategies.

Another approach to the understanding of post-occupancy processes is the one that includes not only buildings' performance, but also the impact of the built environment in the everyday lives of people, and the effect of the planning criteria and policies on the physical characteristics of the buildings. The problem with "the ones with a roof" (Rodríguez & Sugranyes, 2004, 2006) was a phenomena identified in Chile by Rodríguez and Sugraynes when

studying the change in the housing situation of people that twenty years ago remained homeless or "roofless" and today have a house of their own. Through the analysis of the changes that social housing developments have suffered since their occupation, the authors became able to understand the impact the physical characteristics of the settlements have on the quality of life of the inhabitants, and aware of the urban or social problems that can be provoked with solutions to the housing deficit that neglect the social and urban dimension of housing. Rodríguez' and Sugranyes' analysis focused on the formal and informal modifications made to housing provided through governmental programs targeting homeless and low-income population, but also on the assessment of a housing policy that mostly addressed the satisfaction of the housing deficit through a quantitative approach (Rodríguez & Sugranyes, 2011).

A similar study was carried in Mexico by Villavicencio (1996, 1997) and Villavicencio and Durán (2003), presenting a methodological proposal (Villavicencio, 1996) that would allow a deeper understanding of housing and its impact on the everyday lives of residents with limited power over their built environment. Through this methodological proposal, the authors identified different dimensions (i.e. social, physical, economical, administrative, and urban) that acknowledged the complexity of the post-occupancy stage of social housing, and the need for a holistic approach to its study.

These two approaches to the study of the post-occupancy social housing after the occupation of the dwellings have helped to this literature review to the understanding of housing as a multidimensional world where people and their built environment interact in a two way relationship and where it is acknowledged that the satisfaction of the need for housing does not end with the deliverances of the housing units. Therefore, for the purpose of this research, there have been identified the social and spatial dimensions in which this work is interested.

The demand of social housing throughout the country may vary according to the demographic growth and social and geographical characteristics of the different federal entities[7]. Because of the latter, there has been an interest of the public and private actors in housing in standardizing the design used for social housing developments to allow cost and time reduction on the design and construction of the dwellings and housing developments.

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[7] *Mexico is a federation composed by thirty-one states and one Federal District, which is the capital of the country. The country has with a total area of 1,987,201 square metres and its geography considers eight different weather types and elevations from sea level to almost 4,000m over the sea level (INEGI, 2011).*

However, there has also been an increasing interest from both the public and private sector in assessing the quality of the houses provided.

3.3.2 PERSONALISATION, MODIFICATION AND ADAPTATION OF SPACE

The personalisation of the home, including the house and the neighbourhood, responds to the need to personalise our environment and to exercise control over a territory in which our needs have to be satisfied and through which we settle a self-identity (Porteous, 1976). This way, people use and modify their physical surroundings for expressing their needs, tastes and aspirations (Goffman, 1969; Marcus, 1974; Porteous, 1976). However, the modification of the built environment is not only a subjective expression of symbols but also the manifestation of a spatial and material need in regards to housing and the quality of life it provides.

This adaptation to and modification of the physical and spatial characteristics of the dwellings is a spatial dimension of housing that has not been studied in depth in the Mexican case. Despite being under-research, in a study conducted by Tamés (2004), the phenomenon of appropriation and personalisation in housing settlements in the formal and informal sector in Mexico is analysed. As part of her research, Tamés makes a comparison between mass, standardised public housing projects and informal settlements questioning the way people's need are met in different environments and to what extent, large housing developments are responding to the needs and priorities of their residents. In the case of public housing she considered two housing settlements, one composed of blocks with three- and four-storey buildings with six and eight apartments respectively and another composed of blocks of duplex houses with around 60 square metres. This last one was built in 1993 by Casas Geo, the most important private low-income housing developer in Mexico (Tamés, 2004).

With this comparison, the author finds that flexible environments in the informal sector have more potential to satisfy the needs of low-income population. Tamés' analysis show the advantages of public housing in comparison with the informal housing sector, where the materials used for the construction of the dwellings are a better alternative in terms of construction quality, the availability of services (such as gas, electricity or water) and the opportunity of owning a house in legal terms. On the other hand, the location of the social housing settlements appears to represent a disadvantage for the residents, far from jobs and relatives, characteristics that cannot necessarily be overcome over time.

It is interesting to highlight however, that informal settlements offer a better alternative in regards to spatial and physical flexibility. Informal housing presents disadvantages when trying to have access to urban infrastructure and public services. Despite the latter, in Tamés analysis these disadvantages are characteristics of the everyday life that are gradually overcome; modification to houses and settlements represents a continuous process of upgrading (Tamés, 2004).

It is not the intention of this review to romanticise the concept of informal housing sector but just as Tamés acknowledges, it is important to understand the "potential that flexible environments of Mexican informal settlements have toward meeting the housing needs of low-income families" (Tamés, 2004, p. 46). This flexibility may respond to the very nature of informal housing. Without pre-established planning, people that informally occupy plots and are in control over the building process, evaluate the different alternatives available to them and following different sets of priorities than the ones offered in the public housing programs (Turner, 1976).

Despite the lack of control over the original architectonic and urban design of the dwellings and the settlements in social housing developments, it is interesting to notice how the residents personalise and appropriate buildings and open common spaces. The phenomenon of appropriation are observed in Tamés' analysis and the study made by Rodríguez & Sugranyes (2006), where the appropriation of common public spaces occurs in order to achieve more privacy, identity and security. As well, the adaptation of storefronts and home-based enterprises in public housing settlements in the Mexican case, express a need that is not necessarily being satisfied and a socio-economic characteristic of the population that is being neglected.

In the Chilean case where despite the spatial, physical and even normative restrictions of the original design of social housing developments, the residents gradually appropriate public places by building additional spaces and in some cases, just as big as the original dwelling. Even when the modification may represent a risk in terms of safety and legal status, this does not necessarily represent an obstacle for the residents in order to acquire more space.

Although there are not studies in depth in Mexico about the extent to which the tendencies about personalisation, adaptation and modification that Tamés and Rodríguez & Sugraynes analyse, this research considers it relevant to study these tendencies since the alterations and personalisation of the dwellings could be interpreted as a conscious or

unconscious response to a built environment or particular regulations that could or not be answering to peoples' needs and aspirations.

As well, the fact that the residents in some cases alter their houses to the extent of almost re-building their properties represents an economic dimension of housing in which the inhabitants have to adapt their income to the cost of the new house. Beyond the cost of the house and the property itself, the dwellings may represent higher expenses in regards to bills (e.g. water, electricity, and gas), tenancy or the acquisition of new furniture. These expenses have an impact on the family budget, forcing them to look for additional sources of income or to cut their expenses in other fields (Villavicencio, 1996).

This last element also highlights the importance of taking into account what happens after the occupation of the dwellings, which for this research is a key point since in the case of progressive housing in Mexico, the original characteristics of the house are intended to allow a gradual modification of the building. The houses are designed with the minimum physical, spatial and necessary material characteristics for a family to live. Despite the fact that alterations to the houses are permitted in this type of housing, the nature of the modifications raise questions with regard to the spatial, material and physical efficiency of the houses provided, which this research will try to answer.

CONCLUSION

This research believes in the importance of the integration of the spatial factors and the social elements of housing, and aims to take a step back from the quantitative approach to the production of social housing. Acknowledging this, this chapter has reviewed different perspectives on housing that consider it as a multi-dimensional universe where social and spatial features interact. It has reviewed the definitions of 'social' and 'social housing' that emerged from housing policies and its implications, highlighting the complexity of the concept, and the need for analysis to be conducted employing a context-dependent approach, as implemented in Chapter 5. This chapter also reviewed the concepts of home and the everyday life as part of the 'social' associations that produce, and are produced by, space. This review addresses the subjectivity of housing, establishing the basis for the analysis conducted in Chapter 7 of the residents' experiences with their houses. The review of the literature related to the socio-spatial dialectic that acknowledges the spatiality of the social life, informs the analysis in Chapter 6 which examines the translation of the idea of 'social' identified in Chapter 5 into the built environment in the context of social housing. Finally, the review of historical perspectives and temporality has been conducted in order to highlight the importance of time

in architectural design and urban planning. The historical perspective will be applied in the analysis developed in Chapter 5 and Chapter 6, and the concept of temporality in the analysis of Chapter 7.

The next chapter will present the methodological strategy chosen for this study, explaining the methodological approach, research design and methods, as well as the management and analysis of the data collected. The ethical and safety issues, as well as those related to power and positionality will be overviewed at the end of the following chapter.

CHAPTER 4

METHODOLOGY: RESEARCH STRATEGY, FIELDWORK DEVELOPMENT, AND DATA COLLECTION AND ANALYSIS

INTRODUCTION

This chapter presents the methodological justification on which this research is based as well as the approach that will guide the research design and methods. It will explain the selection of a case study methodology and a qualitative multi-methods and triangulation strategy which will include semi-structured interviews, document analysis, photographs, sketches as well as direct observation for the collection of data. This section will also address the ethical and safety issues and the power and positionality elements that were involved during the development of the research.

4.1 METHODOLOGICAL APPROACH

As stated in Chapter 1, this research acknowledges the need for a deeper understanding of the complexity of housing (Kemeny, 1992; Weber, 1992), of its multi-dimensional nature (Villavicencio, 1996, 1997; Villavicencio & Durán, 2003), and of the temporal dimension of the housing process (Stokols, 1982; Turner, 1976). For achieving this understanding, the methodological strategy selected for this research was a case study qualitative approach, drawing on semi-structured interviews, on policy and documents analysis, on direct observation, and on visual techniques.

In order to understand the multi-dimensional nature of housing, this research draws on Villavicencio's (Villavicencio, 1996, 1997) and Villavicencio & Duran's (Villavicencio & Durán, 2003) methodological proposal that acknowledges "the serious methodological difficulties [when studying housing] for transcending singular cases and to extract generalisations about housing and the quality of life it allows" (Villavicencio, 1996, para. 12). These difficulties relate to the fact that dwellings and the way their occupants experience them can vary from person to person, making it hard to understand and analyse each individual's or families' needs with regards to housing and the impact housing has on the everyday lives of residents of housing developments. Villavicencio proposed in 1996 to overcome these difficulties by identifying the variables of housing that allow a context-specific, user-specific and more in-depth analysis of social housing in Mexico. Those variables referred to the different dimensions that define social housing in Mexico, which she defines as the "set of

houses offered for ownership and their collective environment, produced through the participation of public housing institutions for supporting low-income population, [and that] requires certain procedures and set of payments for achieving it" (Villavicencio, 1996). Based on this, Villavicencio (1996) considered that the assessment of social housing includes what is beyond the physical outcome of housing programs, and includes the different actors involved in the above definition of social housing.

For Villavicencio (1996) housing has a physical dimension, an economic dimension, an administrative dimension and an urban dimension. The physical dimension referred to the physical and spatial outcomes of social housing programs and the daily activities the house and the housing development allowed its inhabitants. The economic dimension focused on the impact of the cost of housing (e.g. credit payments, service contracts, buying new furniture) on the household's everyday life. For the administrative dimension, Villavicencio considered the tools residents have for maintaining the common use areas within housing (e.g. neighbourhood organisations, outsourced maintenance organisations). Finally, the urban dimension covered aspects related to the location of the developments in relation to city centres, and their surroundings. Later in 2003, Villavicencio and Durán (2003) added a relatively narrow social dimension referring to the interaction of people from different socioeconomic backgrounds, whose life was framed in houses and housing developments with spatial, material and design limitations.

This research draws on two of the five dimensions above-mentioned (the physical and the social) since it is one of the main interests of this study to understand the way architecture frames the everyday lives of residents of social housing developments at a micro-scale, and how the actual physical characteristics of the constructive methods used and the architectural layout of the houses can hinder or facilitate modifications to the dwellings. It recognises the other dimensions are valid, and do play a role in shaping understanding, but they are not the primary focus of this thesis.

Furthermore, the definition of these two dimensions were not considered to provide an ultimate or complete definition of each, but were considered rather to guide the contours of further in-depth study. Villavicencio's (1996, 1997) and Villavicencio and Durán's (2003) dimensions and methodological proposal resonate with Lefebvre's triad of the perceived, conceived, and lived elements that are part of the social production of space (Lefebvre, 1991). The methodological approach taken for this research acknowledges Lefebvre's influence in the work of Villavicencio, and Villavicencio and Durán, but it also acknowledges the contextual

value of these authors' methodological contribution, which takes already into account the political, social and cultural elements of Mexican social housing. Therefore, the definitions provided by the authors were considered to be the first of different variables or 'layers' within each dimension, which this research aims to broaden, but also to identify additional layers in order to achieve a deeper and broader understanding of each dimension.

4.2 RESEARCH DESIGN

The research design was based on the selection of a multiple case study approach and a qualitative multi-methods strategy. For the case-study approach, four different housing developments were selected in the city of Mazatlán. The multi-methods strategy included semi-structured interviews, document and secondary sources' analysis (i.e. policies, regulations, newspapers and magazines) as well as direct observation, taking photographs and developing sketches for the collection of data during fieldwork. Since the data collected was originated by different sources, the evidence was approached and analysed using data triangulation.

4.2.1 Case study approach

For the analysis of residents' experiences with their homes, it was required for this research an in-depth understanding of the impact of the translation of 'social' into the built environment on the lives of the residents. This would require detailed information produced by the participants' point of view, and a first-hand analysis of the real-life context of the phenomenon studied, which could be achieved through a case study approach (Yin, 2006). The latter, in addition to the nature of the research questions posed which have an explanatory nature in the case of the 'how' research questions, as well as a descriptive nature in regards to the 'what' questions, justified the selection of this strategy (Yin, 2006). Since for this research it was necessary not only to work on existing housing developments and their residents, but also to analyse secondary data sources and policy documents and their evolution through time, the case study approach allowed keeping a holistic approach of real-life events.

4.2.2 Case studies

The case studies were selected in the city of Mazatlán in the state of Sinaloa, in Mexico. The city of Mazatlán (Figure 1) was chosen since urban settlements with less than half a million inhabitants with a constantly improving economy are the most representatives in Mexico (INEGI, 2011). Nevertheless, research done in urban areas of this size is overpowered by the one developed in large cities such as Guadalajara, Monterrey or Mexico City. An additional reason

for choosing the city of Mazatlán was that it is the city where my family is from and where I have spent time during my life, which provided me with the knowledge of the area and local culture represented an advantage when moving around the city and communicating with interviewees.

Figure 1. Location of the city of Mazatlán (1), in the state of Sinaloa, Mexico

Source: Google Maps (2015)

In 2010 [8] Mazatlan registered a population of 438,434 inhabitants and 122,383 households, presenting an average of 3.6 persons per dwelling (INEGI, 2010). The National Housing Commission (*Comisión Nacional de la Vivienda*, CONAVI) registered since 1989[9] and until 2015, 102,056 households in the city of Mazatlan. Of this total 92,980 (91.1%) required the involvement of funding from public institutions (i.e. INFONAVIT, FOVISSSTE, state institutions and federal subsides) for the acquisition, improvement, or self-construction of housing (Figure 2). The remaining 8.9% of the households between the above-mentioned period of time was accessible through banking institutions or private funds, mostly limited to high-income population (CONAVI, 2015). Sixty-nine per cent of the credits granted (64,409) have been used for the acquisition of newly built housing since 1989; more than two thirds of this figure (44,436) have been granted by INFONAVIT (CONAVI, 2015).

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[8] *In Mexico, a detailed Population and Housing Census is developed every ten years, being the last one in 2010.*
[9] *There are not records available of housing credits before this year for the city of Mazatlán.*

Figure 2. Distribution of housing credits since 1989 in the city of Mazatlán
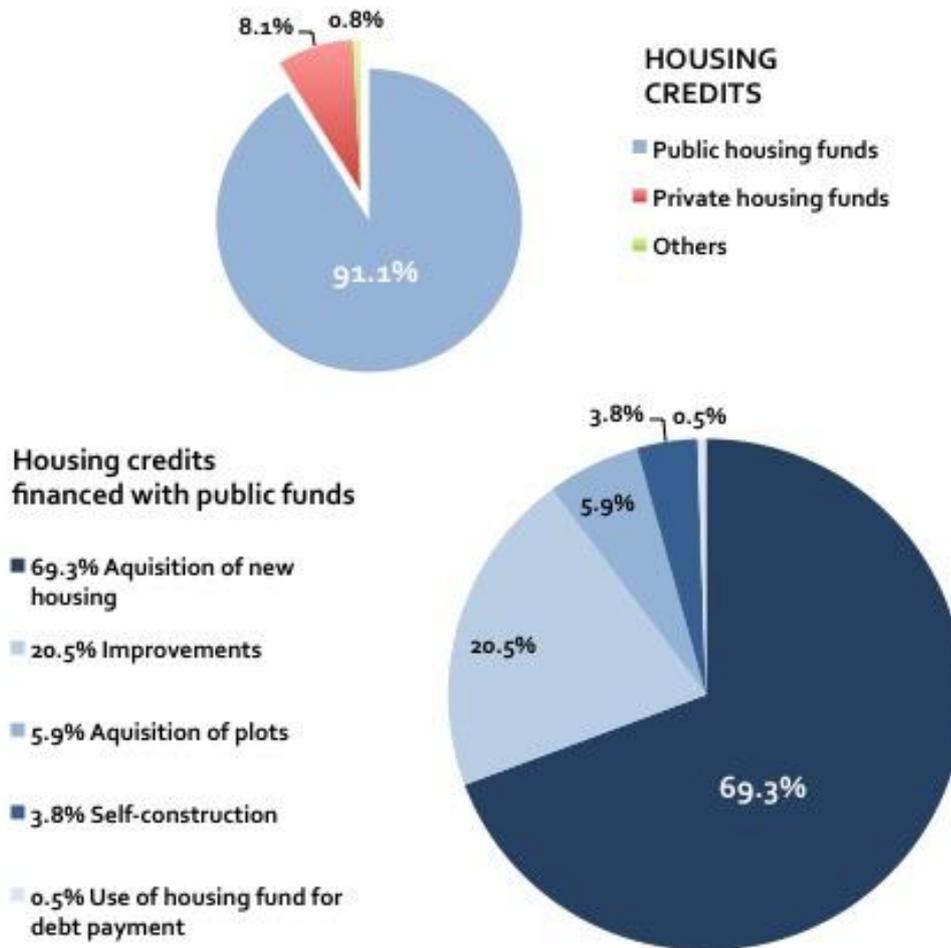
Source: Developed by the author with information from CONAVI (2016)

It was not possible to identify a clear figure in relation to formal and informal households since the numbers obtained from CONAVI and INEGI do not specify the percentage of housing belonging to the formal and the informal sector. Without providing details, Mazatlan City Council (Mazatlan City Council, 2005) acknowledges the existence of 65 informal settlements within the city's urban area, most of them located to the north and west side of the city; the same areas where two of the case studies selected for this research are settled (Pradera Dorada and URBIVilla del Real).

For the City Council, informal housing does not only refer to a lack of legal land tenancy, but also housing built with fragile construction materials and methods, and with limited or no access to services (i.e. electricity, water, drainage). Following this definition, between 4 and 5 per cent of the city's households would fit into this category (INEGI, 2010), a figure however, that could overlap with the percentage of self-construction credits presented above, which is one of the Council's housing and land regularisation strategies (Mazatlan City

Council, 2005). Until 2010, around 41% of the housing stock in the city of Mazatlan was registered as social housing (Mazatlán City Council, 2005). Overall, these figures illustrate that public housing credits and state subsidies for housing, along with the involvement of public institutions and mainly from INFONAVIT in the provision of housing, dominate housing form and access in Mazatlán, revealing the significance of the issues explored in this thesis.

Figure 3. General map of the city of Mazatlán showing the city centre (C) and the Zona Dorada (Z), and developments' location: 'INFONAVIT Jabalíes' (1), 'Prados del Sol' (2), 'Pradera Dorada' (3) and 'URBI Villa del Real' (4)
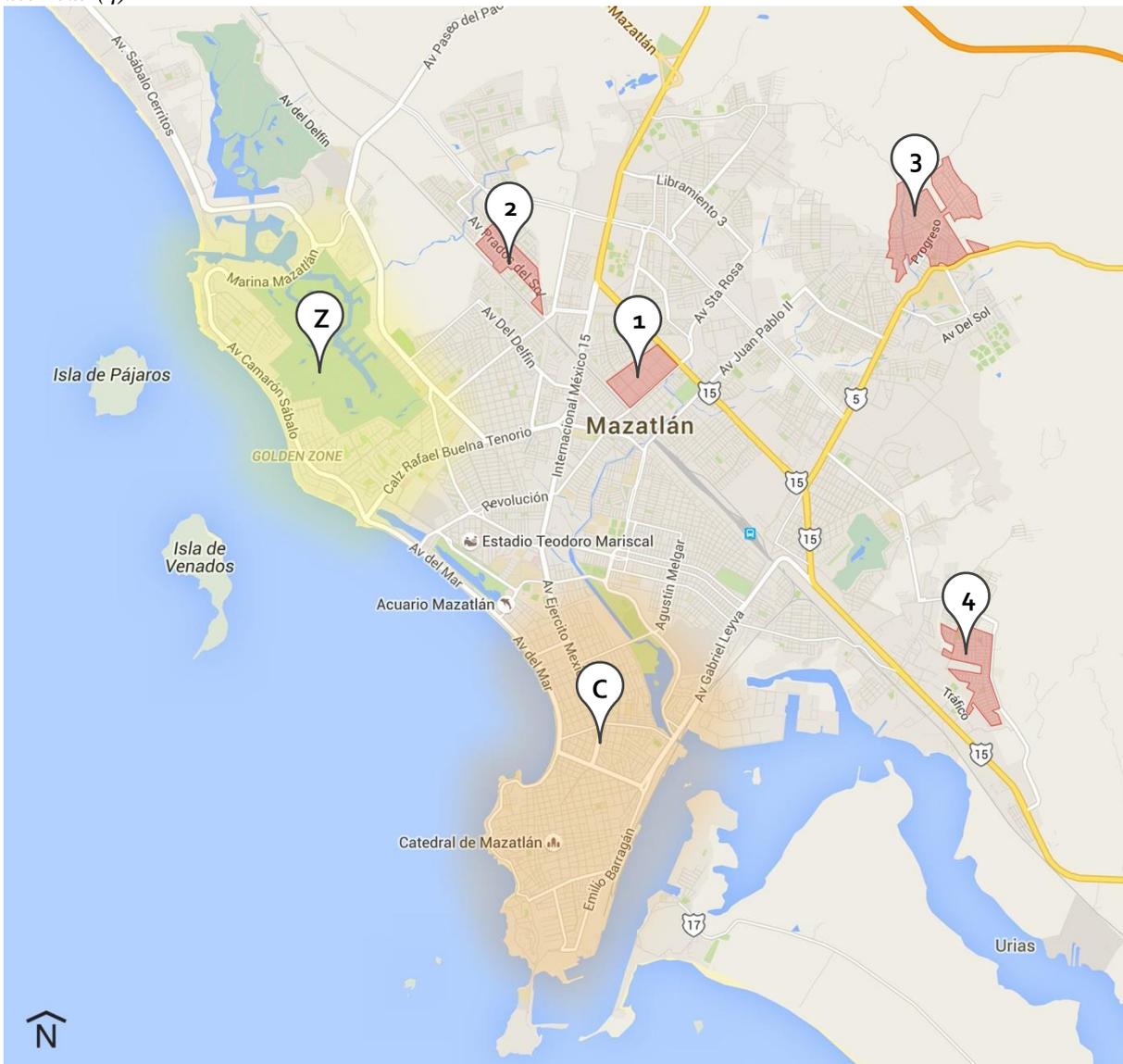
Four housing developments were selected based on who was in charge of the construction, the year of their construction, and the typology of the houses (Figure 3). With regard to who was in charge of the construction of the developments, the first housing development built by INFONAVIT in 1988, 'INFONAVIT Jabalíes', was selected for

representing the housing typology offered before housing reforms in 1992, which also represents the single-family housing typology found throughout the country at that time, and that will be illustrated in Chapter 6. Until 1992, only a handful of housing projects were built by INFONAVIT in the city of Mazatlán differing from one another in the type of construction, varying from single-family dwellings like in the case of INFONAVIT Jabalíes, to multi-family and duplex housing.

For the other three housing developments it was decided to select projects developed by private construction companies after 1992. In this case, nowadays it is possible to find dozens of housing projects with the same characteristics. In relation to the time of construction, it was intended to cover the period of time between the end of the 1980s, when the first INFONAVIT single-family housing developments were built in Mazatlán as it has been mentioned above, and the present time. Through this selection of case studies the intention was to analyse the policy changes made during this time and assess how these modifications to housing laws had an impact on the urban and architectural characteristics of each housing project.

The oldest housing settlement selected, 'INFONAVIT Jabalíes' (Figure 4), was built around 1988 as an example of a housing development built under INFONAVIT's direct construction and architectural supervision. It has around 2,000 households showing a mixture of duplex houses and single-family dwellings. Since it was not possible to find an official number from interviewees (i.e. residents, officials) possibly because it was built so long ago, the quantification of households in 'INFONAVIT Jabalíes' was made through direct observation (i.e. visiting the development) and through utilising aerial photos obtained on Google Maps.

'INFONAVIT Jabalíes' is surrounded by main avenues that delimitate the development, separating it from other social housing developments and *colonias populares*. The typical one-storey single-family house found in this development has 58 square metres and an internal distribution as shown in Figure 5. Also in this figure, it is possible to observe a façade that maintains the original materials and characteristics of the dwellings just as they were delivered in 1988. Houses were built using red clay bricks in the walls, and concrete supports, beams and foundations; a system that would endure building a second storey directly over the existing construction.

Figure 4. Aerial view of 'INFONAVIT Jabalíes'

Source: Google Maps (2015)

Figure 5. Layout and façade of a typical one-storey in 'INFONAVIT Jabalíes'

Access from pathway

0   5m
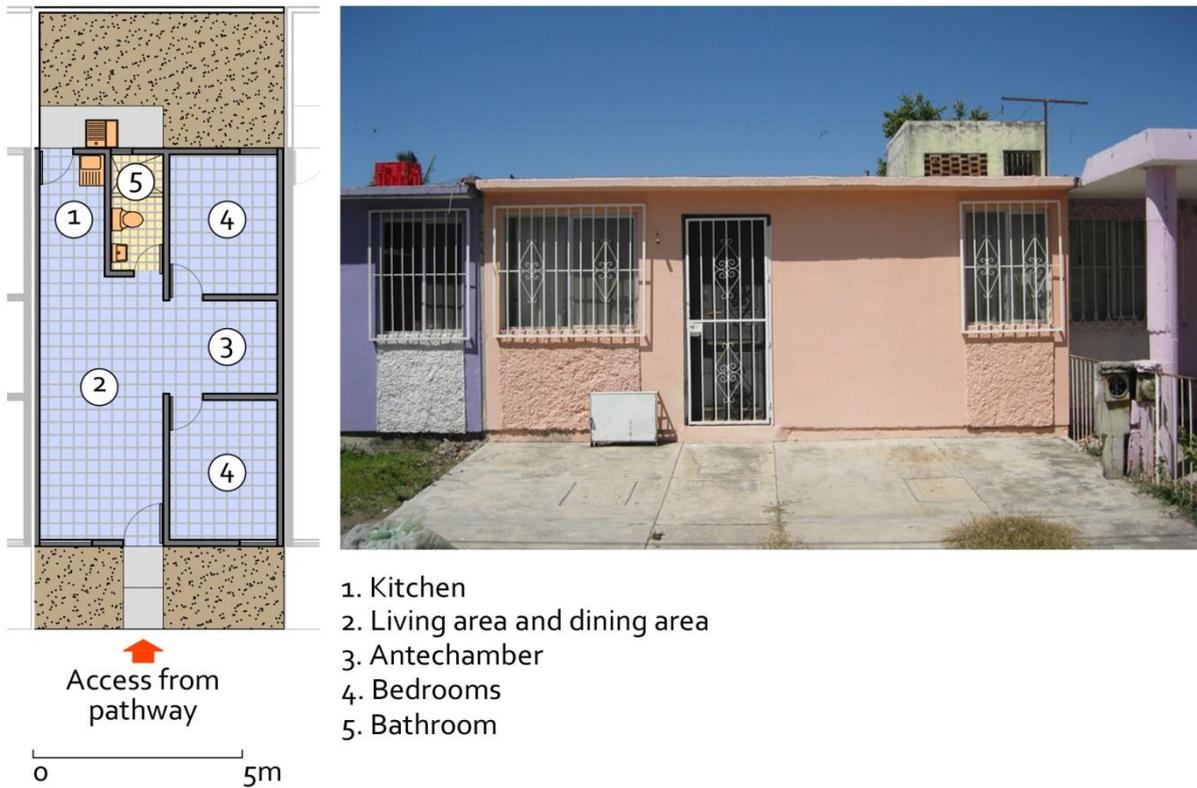
1. Kitchen
2. Living area and dining area
3. Antechamber
4. Bedrooms
5. Bathroom

Source: Developed and taken by the author (2012)

Single-family dwellings are located facing pedestrian pathways that connect the houses to car parks and streets, which was common to observe in developments built by INFONAVIT at the end of the 1980s (Plate 4). Nevertheless, single-family dwellings also facing streets and avenues just as duplex dwellings which were built using the same construction system and methods than the one-storey houses. Layouts of the internal distribution of duplex dwellings were not recorded since the interest of this research was to focus on houses that allowed modifications to the rooms and the structure, something restricted in duplex accommodation.

Plate 4. Typical pathways in 'INFONAVIT Jabalíes'

Source: Taken by the author (2012)

The second housing development called 'Prados del Sol' was built around the year 2000, with around 1,500 households. Cansa Zagri was the private construction company that planned and designed this settlement but did not fulfil its promise of completing the construction of it. During the last stage of the project´s development, the company inexplicably stopped the construction process and ceased attending to those who asked for a house in this development at that time, closing its offices in the city of Mazatlán. Due to this, both the company and INFONAVIT received complaints mostly from people who bought some of the houses built in the last stage.

Source: Google Maps (2015)

All the houses in this development are one-storey and single-family buildings and the internal distribution is shown in Figure 7. Also in this figure, a typical façade is shown showing the original characteristics of the houses. Different from the houses in 'INFONAVIT Jabalíes', the construction system used in 'Prados del Sol' is based on hollow concrete blocks, a difference that will be analysed in Chapter 6 and 7. There are not pedestrian pathways and all the houses face streets and avenues, allowing residents to park their cars in front of their homes (Plate 5).

The inclusion of this development as one of the case studies was decided during fieldwork after the first interviews made in 'INFONAVIT Jabalíes'. The topic of the developments' urban location and surrounding areas emerged as an important asset for residents when reflecting about their homes. 'Prados del Sol' happened to be an exception in regards to social housing built in that part of the city, along with other two smaller housing projects.

Figure 7. Layout and façade of a typical one-storey house in 'Prados del Sol'

1. Kitchen
2. Living area and dining area
3. Bedrooms
4. Bathroom

Source: Developed and taken by the author (2012)

'Prados del Sol' is closely connected with other housing developments aimed to a population with a higher income that those acquiring social housing. A main avenue crossing the development connects it to a part of the north part of the city where new roads is supposed to be built within the next five years to connect *La Zona Dorada* (The Golden Zone) with the rest of the city without having to drive through the *malecón*. The latter gives this housing project a unique characteristic in terms of location, raising issues about the quality of the surroundings having an impact in the life of the residents.

Its location in the north of the city close to the wealthiest areas of Mazatlán provided an opportunity to observe the extent to which developments' location and surroundings play a role on the housing projects' development through time. Finally, since the last two developments chosen for this research, which will be described below, were selected along 'INFONAVIT Jabalíes' for building an overview of social housing before and after neoliberal reforms, the inclusion of 'Prados del Sol' (2000) would provide an additional point of reference for this research.

Plate 5. Typical street view in 'Prados del Sol' (2000)

Source: Taken by the author (2012)

The construction of the final two housing projects called 'Pradera Dorada' and 'URBI Villa del Real' began around 2007 and 2009 respectively. In the case of 'Pradera Dorada', there were areas still under construction while doing fieldwork, and according to the developer company called MEZTA, it is planned to have around 6,000 households when finished in 2016. Located in the northeast limits of Mazatlán, the housing project is mostly surrounded by rural land. Its southern limit adjoins to a road that connects the city to small rural communities that are part of the municipality. In its south-west side, it borders on a low-income neighbourhood and on an irregular settlement and has a connection through a dirt road with another informal settlement in the north. In the south-west side of the settlement, there is a campus of a state university across a main avenue that it is also a federal road that connects the state of Sinaloa with the state of Durango.

Figure 8. Aerial view of 'Pradera Dorada'
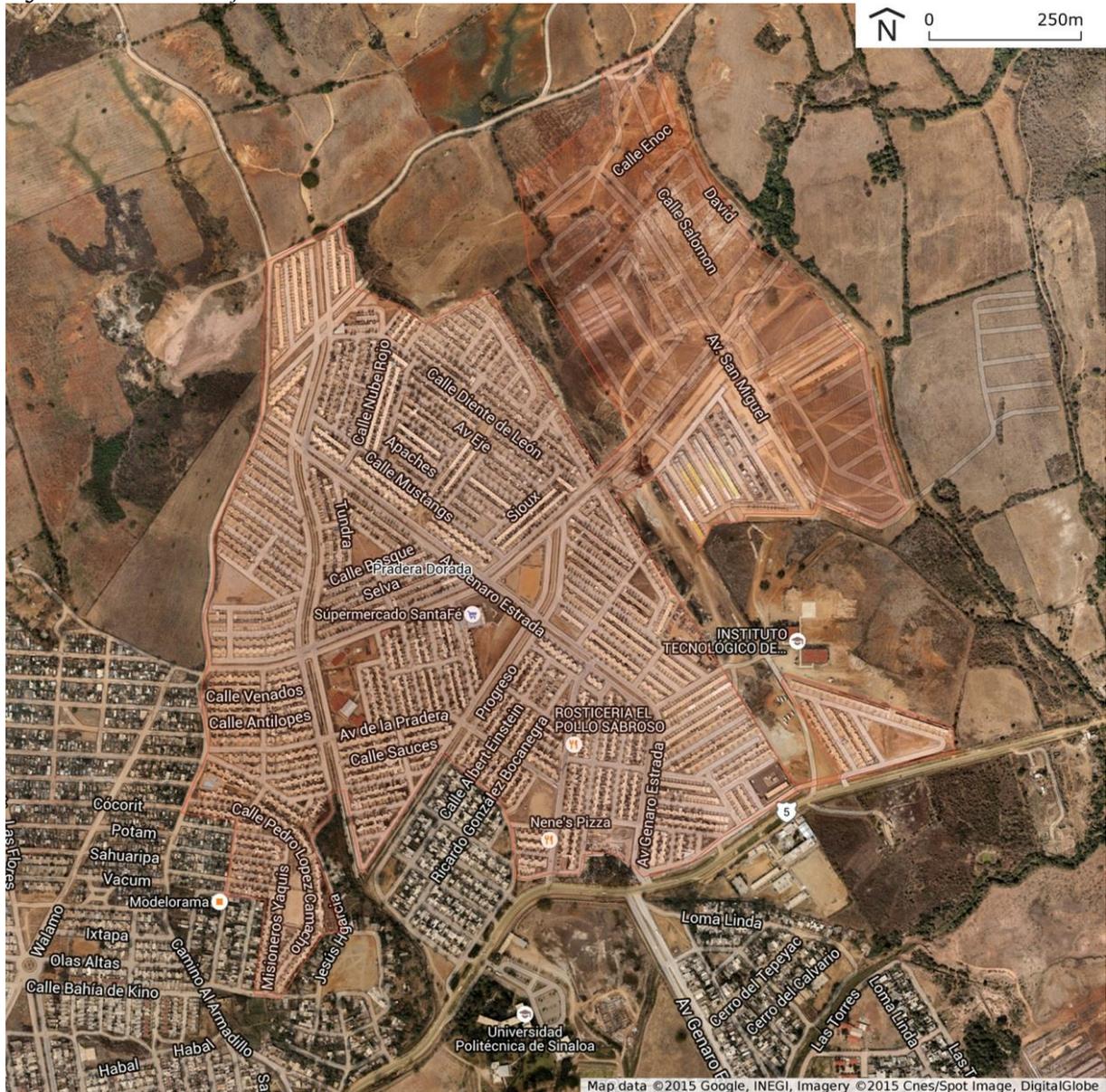
Source: Google Maps (2015)

'URBI Villa del Real' on the other hand, was built by private developer URBI and has around 4,000 dwellings. It is located in the southeast limits of the city facing west to irregular settlements and *colonias,* and contained by small hills to the east that separate the development from the city's garbage dump. To the north it borders on other social housing developments built by another construction company.

Figure 9. Aerial view of 'URBI Villa del Real'
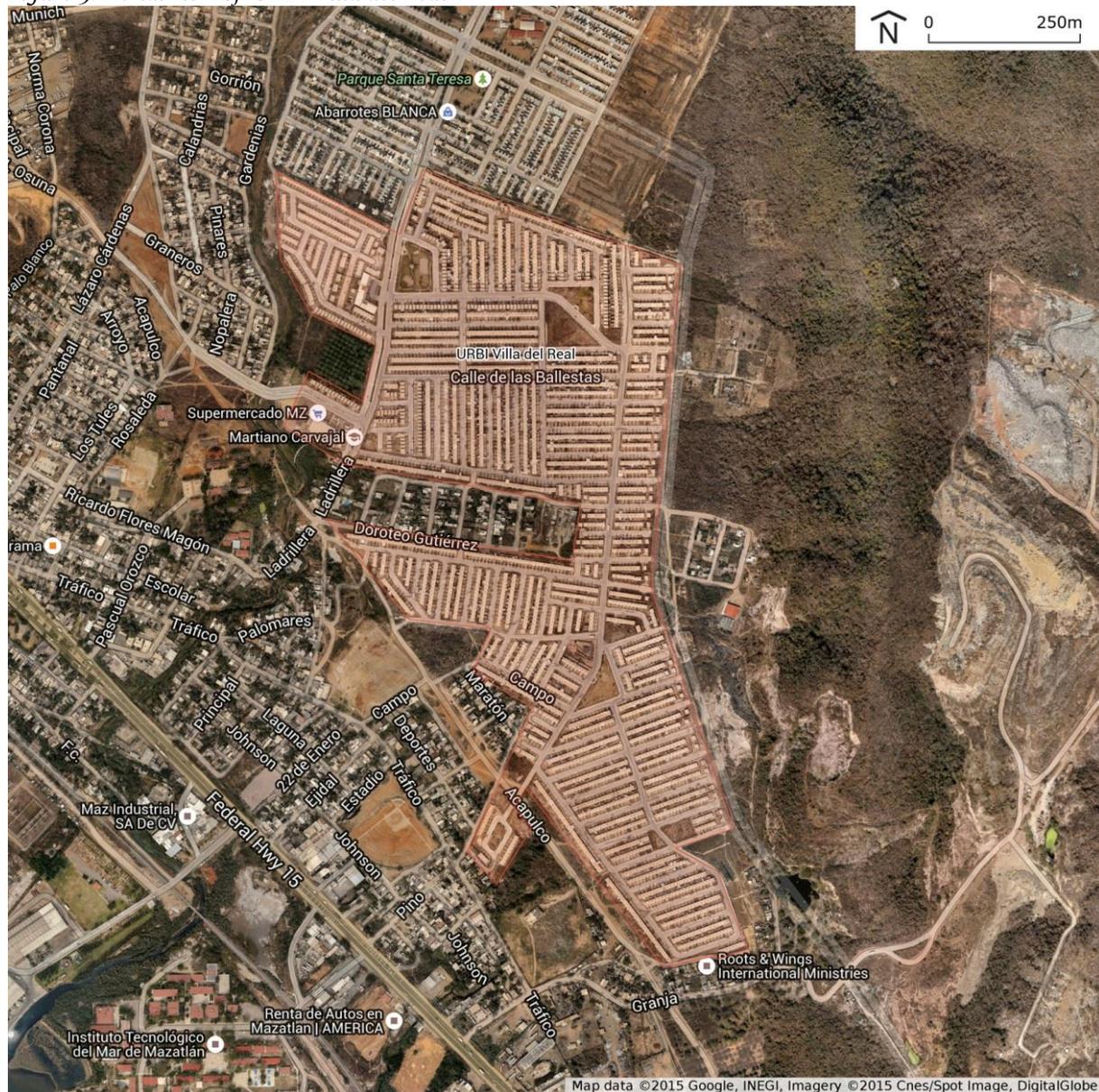
Source: Google Maps (2015)

Although not directly in contact as the other developments, the development it is close to a highway that connects Mazatlán with another neighbour state, Nayarit. This same highway located to the south of the project, crosses part of the city and connects it with the capital of the state of Sinaloa. To reach this highway, it is necessary to drive or walk through a *colonia popular* called 'Urias', known in the city for being a dangerous or troubled neighbourhood due to high levels of criminality. Although built by different developers, both 'Pradera Dorada' and 'URBI Villa del Real' hold the same internal distribution and liveable area (38 square metres) of the houses, as Figure 10 reveals.

Figure 10. Layout and facades of typical 'Pradera Dorada' and 'URBI Villas del Real' houses

1. Kitchen
2. Living area and dining area
3. Bedrooms
4. Bathroom
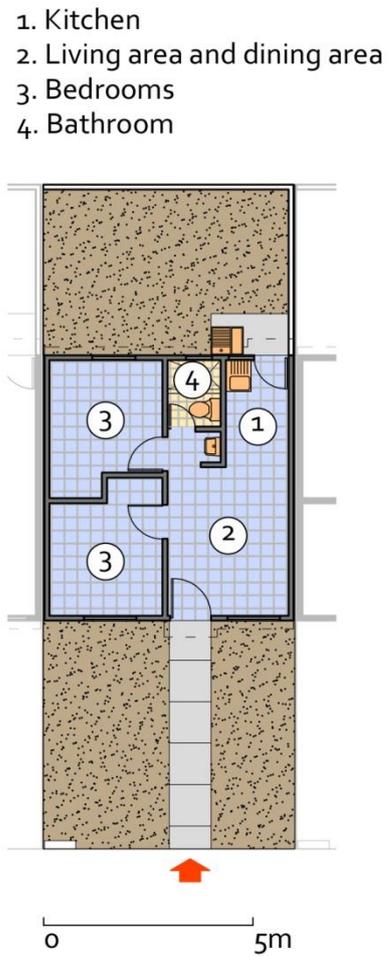
Source: Developed and taken by the author (2012)

Just like in 'Prados del Sol' (2000), 'Pradera Dorada' (2007) and 'URBI Villa del Real' (2009) pedestrian pathways are not present and streets and avenues connect the different areas of the housing project, and allow having a parking space at the front of the dwellings (Plate 6).

Plate 6. Typical streets in 'Pradera Dorada' (top) and 'URBI Villa del Real' (bottom)

Source: Taken by the author (2012)

4.2.3 Sampling and recruitment

Based on the aims and objectives of this research, three types of groups were selected as the target population: residents of social housing developments, professionals (i.e. planners, designers, governmental and INFONAVIT officials, real estate appraisers, and private developers' personnel and sales people), and independent construction workers.

For residents, the sampling was considered to be built through 'selective sampling' and the recruitment of participants through a snowball technique. Selective sampling was picked as a practical necessity, since the amount of interviewees needed for the purpose of the research was decided after considering "the time the researcher had available [to her], by [her] framework, by [her] starting and developing interests, and by any restrictions placed upon [her] observations by [her] hosts" (Schatzman & Strauss, 1973, p. 39). The latter made selective sampling a calculated decision to pick from a very specific part of the population in accordance to conditions conceived in advance.

For the recruitment of participants through a snowball technique, the researcher would take advantage of her relatives living in the city of Mazatlán, who knew residents in both 'INFONAVIT Jabalíes' (1988) and 'URBI Villa del Real' (2009), and potentially in 'Prados del Sol' (2000) and 'Pradera Dorada' (2007). Considering the number of residents foreseen to be interviewed which would not exceed fifteen in each development, snowball sampling was thought to provide quick and easy access to participants; a first participant introduced to the researcher by her relatives would identify and introduce other resident or residents for constructing a sampling frame (Goodman, 1961).

The target population in the housing developments was those who were the original owners of the house they were occupying, and had been living there since the acquisition of the dwelling through an INFONAVIT credit. The latter on one hand, for guaranteeing they were in control of the modification made or not to their homes, contrary to what would occur when renting a property, where landlords do not approve or have to previously approve any changes. On the other hand, the acquisition of the homes through an INFONAVIT credit would allow focusing on the housing typology produced by INFONAVIT and its evolution through time.

Since every participant would be introduced by someone they knew, a high level of trust and rapport between interviewer and interviewees would be maintained more easily than if participants were selected randomly. Trust and rapport were important assets to achieve during interviews since apart from people's experiences, this research is interested in the physical characteristics of the house, and that would require visiting participants' homes, and potentially challenging their privacy. Snowball recruitment was not a strategy maintained during the totality of the fieldwork's development. Biernacki and Waldorf (1981) outlined five methodological problem areas within the use of snowball recruitment or 'chain referral' that were only partly overcome, and that early on during the collection of data from residents who required a change in the recruitment technique.

The first two methodological problems identified by Biernacki and Waldorf (1981) refer to starting the referral chain and to verify the eligibility of potential respondents. At the beginning of fieldwork, both issues were overtaken thanks to first, the first-hand introduction to two residents of 'INFONAVIT Jabalíes' (1988) by the researcher's relatives and second, the knowledge the first two participants had of their neighbours' homeownership status, which was possible to confirm during the neighbours' interviews.

The approach taken for contacting the first interviewees also helped to clarify the "social visibility" (Biernacki & Waldorf, 1981, p. 144) of the target population. However, homeownership is a target population's characteristic that is not identifiable at first sight without talking to potential interviewees first, which makes this group's social visibility hard to identify. Therefore, snowball sampling was thought to provide access to that information from one participant to another.

Following the logic of chain referral sampling, once the first participants have been recruited it can be expected they work as a "research assistants" (Biernacki & Waldorf, 1981, p. 152), providing information about potential interviewees that fulfilled the required characteristics for the research and to help recruit them. This represents a risk and the third of the methodological problems above-mentioned; for recruiting other interviewees, the first participants might need some type of training since they can contact people with the wrong characteristics or may hinder the recruitment process (Biernacki & Waldorf, 1981).

For this research, new participants were introduced to the researcher by previous interviewees, so there was always the opportunity to corroborate the requirements needed. However, although recruitment was under control of the researcher, an unforeseen problem emerged; despite having been introduced by somebody they knew, the more the researcher 'moved away' from the initial participant, the more the new participants displayed lower levels of trust. What started as very relaxed and almost familiar-type of interviews during the first two or three interviews, ended up by the sixth interview with the respondent asking the same questions to the researcher as if she was a complete stranger. Nevertheless, it was possible to establish rapport during the interview thanks to the researcher's familiarity with the city and local culture, as will be explained in Section 4.6.

In addition to the provisional loss of rapport, snowball recruitment presented an even more concerning problem in spatial terms; since chain referral happened within the social group of each participant contacted, this was translated into a group of interviewees living on the same street (Figure 11) and who hardly knew people in other parts of the development or even, in other developments. In the case of 'INFONAVIT Jabalíes' (1988), this became a concern since it was known by the researcher that as a common practice, groups of houses in one street were delivered to unions of one company, as will be discussed in Chapter 5. Due to all the latter issues, which was risked interviewing a very narrow and non-representative part of the target population, it was decided to change the recruitment process maintaining the selective character of sampling.

Figure 11. Sampling in 'INFONAVIT Jabalíes' (1988)
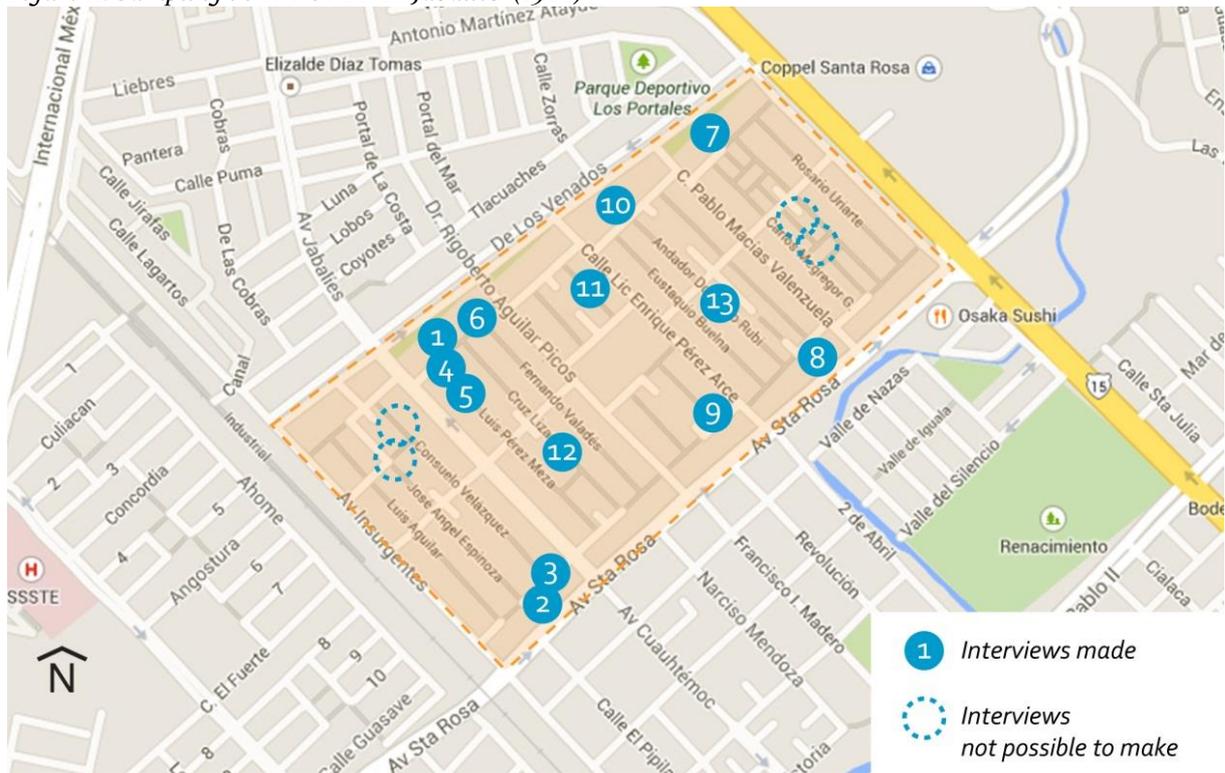
Source: Google Maps (2015) and annotations made by the author (2015)

The first contact and recruitment of participants would be done randomly throughout the development trying to cover as much area as possible, contacting residents directly at their homes (knocking on their doors). The advantage of snowball sampling related to 'social visibility' would be achieved in this case, by corroborating through a few initial questions if they fulfilled the requirements needed for the purpose of this research (homeownership status and type of credit used). The change in the recruitment technique allowed a more representative sample, but brought difficulties in relation to the researcher's safety, residents' privacy, and rapport that had to be overcome, and that will be addressed in Section 4.5.

In relation to the sampling of professionals (i.e. planners, governmental and INFONAVIT officials, real estate appraisers, and private developers' designers, managers and sales people) and construction workers, the same selective sampling technique was applied based on the researcher's knowledge of the planning, design, and construction process due to her architectural background in the practice field. In regards to professionals, key actors of each stage of the housing production were contacted for setting appointments in their offices (i.e. planners, designers, officials, developers' managers). Construction workers were identified and recruited in situ on each housing development, for ensuring they could provide information about the construction methods and materials used in the houses. However, during the development of the interviews with both professionals and construction workers,

unforeseen additional actors were mentioned and identified, such as appraisers, and sales people, that contributed to a better understanding of the housing production and provision process, and the relation between private developers and residents. These additional actors were therefore included in the overall sample.

4.3 RESEARCH METHODS

The case study approach allows using different sources of information and data collection and according to Yin (2003) this is the strength of a case study strategy. Acknowledging the complexity of the housing study due the different dimensions that have to be taken into account, this research project collected data using a qualitative multi-methods strategy. This included semi-structured interviews, document analysis as well as direct observation, photographs, sketches and the triangulation of the evidences obtained. To illustrate the ways in which complex questions were explored through a an approach of different methods, in Table 1 the research methods will be listed and linked with each of the research questions posed for this research.

4.3.1 Semi-structured interviews

Semi-structured interviewing is the most advisable method for collecting people's knowledge, experiences, perceptions and feelings of the world that surrounds them (Mason, 2002) and may become the most important sources of information in a case study strategy (Yin, 2003). Based on the latter, for this research the qualitative interviews are considered to be the main source of information since it is the interest of this research to understand the relationship between residents and their built environment. Information related to the design process of the houses and the criteria applied for the architectural design and the construction process were also obtained through semi-structured interviews with architects and planners. These were from the construction and developer companies in charge of the realisation of the settlements as well as with independent construction workers. The most feasible way to obtain the latter information, was through semi-structured interviews holding interactive exchange of dialogue involving one-to-one interactions, to obtain knowledge and evidence that are "contextual, situational and interactional" (Mason, 2002, p. 64).

Table 1. *Research questions and methods.*

RESEARCH QUESTIONS	METHODS	JUSTIFICATION
1. **What does 'social' mean in social housing?**	Policy documents and regulations	The analysis of policy documents and regulations will be done for identifying the definition of 'social' and the approaches to 'housing for workers' and 'social housing' since the creation of the 1917 Mexican Constitution to date.
	Semi-structured interviews	Interviews with planners and officials will provide a first-hand interpretation of the concept of 'social' and its policy implementation.
2. **How is 'social' being translated into the built environment in social housing?**	Policy documents and regulations	The analysis of policy documents and regulations will be done for comparing the definition of 'social', 'housing for workers', and 'social housing', with what was actually built, and attempting to identify officials', planners', and designers' assumptions behind the production of the built environment.
	Semi-structured interviews	Interviews with designers, planners and officials will provide a first-hand account of the translation of 'social' into the built environment.
3. **How is 'social' being experienced by residents in social housing developments?**	Semi-structured interviews	Interviews with the residents will provide an account of what they expected or what they needed when the house was delivered to them and after they occupied it. Additionally, interviews with construction workers will provide data about this feature.
	Photographs and sketches	Photographs taken by the researcher after knowing the original characteristics of the houses will provide a visual overview of the transformation of the house. The sketches will work as field notes that will be taken during the interviews with the residents.
	Architectural layouts	Architectural layouts will help analyse the original characteristics of the house at the moment of deliverance.

The residents of 'INFONAVIT houses' were asked about their motivations for modifying their dwellings through time as well as about their experiences, feelings and impressions towards the spatial, physical and material characteristics of their houses. Semi-structured interviews were also used in this research, as a way of giving the residents of 'INFONAVIT houses' the opportunity to express their thoughts, feelings and insights with regards to their dwellings looking to take a step back from the present approach to social housing where the design, construction and provision appear to largely respond to the economy of space, cost and time. Since an in-depth understanding of the phenomenon was being studied through a case study strategy, and because of the practical restrictions of time of this research, a large sampling size was not considered to be appropriate (Arksey & Knight, 1999).

It was decided to address only the adults in charge of the house, so it could be possible to obtain an account of events that will not only provide information about the alterations made to the house but about the impact they have had on their family economy, a feature considered as part of the everyday life of the residents. At the beginning of fieldwork, some interviews were made through snowball effect, however this technique was discharged since it could be reducing the sample to a particular social group with characteristics and locations in common that could bias the data obtained. After the first experiences, the selection of interviewees was made randomly and using a scattered distribution approach. In 'INFONAVIT

Jabalíes' and 'Pradera Dorada' 13 interviews were conducted in each and 12 interviews in each of the other two housing developments. In total 50 interviews were conducted with residents in the four housing developments, which included interviews to one or two adults (usually couples) living in the house. Interviews to residents lasted in average around 30 to 40 minutes.

Interviews with planners, developers and designers were made in order to identify and examine the values and assumptions behind the design and construction criteria in relation to satisfying the demand of housing, the typology of the houses or the use of space inside the house and how these concepts have changed over time. In Mexico, the general population makes use of independent construction workers such as masons or bricklayers to develop architectural or structural changes to buildings without the intervention or supervision of an architect or an engineer.

Construction workers were interviewed for a first-hand understanding of the physical and material characteristics of the houses and of residents' priorities and preferences when modifying their houses. In total, 19 interviews were made to professionals, officials and construction workers. Interviews with professionals lasted around one hour in average, although there was one case in which the interview lasted up to three hours. Interviews with construction workers did not last more than 30 minutes in general, since the dialogue with them always occurred at the house they were working on.

In Appendix A, a list of interviewees will be presented, separating the type of interviewees according to the housing development the live in in the case of residents, the organisation or company they work for in the case of professionals, and the housing development they were working on, in the case of freelance construction workers.

4.3.2 Document Analysis

Although interviewing is the most advisable method for collecting data to understand people's points of view, it is desirable to look at qualitative interviews as just one of several methods to explore the research questions (Mason, 2002). The research questions for the purpose of this research are based on 'what' in regards to the assessment of the physical changes the housing developments have had and on 'how' in relation to the understanding of the processes involved in the modification of the built environment by the residents. Taking the latter into account, the part of the research questions involving 'what' has an exploratory character favoured by analysis of archival records (Yin, 2003).

The archival records, for the purpose of this research, are the urban plans, architectural drawings and layouts initially created for the construction of the selected housing developments. Anticipating the impossibility of having access to these archives, alternative sources of information in relation to the original characteristics of the houses were also gained. This involved interviewing members of the planning and construction companies that participated in the development of the researched settlements. In addition, where necessary, it was also possible to conduct a visual analysis of houses that over the years have not been modified at all and have maintained their original characteristics in order to retrospectively construct architectural drawings.

The review and analysis of the original architectural designs helped to understand the original physical, spatial and material characteristics of the dwellings at the time of deliverance to the residents. However, this was only the case in the two most recent housing

developments; in the case of 'URBI Villa del Real' (2009), the drawings were provided by a technical manager interviewed that works for URBI, and in the case of 'Pradera Dorada' (2007), drawings were obtained through flyers and sales information provided by interviewees working for MEZTA. In regards 'INFONAVIT Jabalíes' and 'Prados del Sol', the internal distribution of the houses was obtained after visiting the residents and through sketches made by the researcher for illustrating the floor plans and construction details of the houses.

Table 2. Documents analysed

Agrarian Law *Ley Agraria*	1915, 1992
Federal Housing Law *Ley Federal de Vivienda*	1984
Complementary Technical Norms of the Mexico City Construction Regulations Normas Técnicas Complementarias del Reglamento de Construcciones del Distrito Federal	2004
Federal Labour Law *Ley Federal del Trabajo*	1970, 1972, 1982
Housing Law *Ley de Vivienda*	2006
INFONAVIT Law *Ley del INFONAVIT*	1972, 1981, 1982, 1992, 1997, 2005
Mazatlán City Council's Construction Regulations *Reglamento de Construcción para el Municipio de Mazatlán*	2012
Mazatlán's Urban Development Plan *Plan Director de Desarrollo Urbano de la Ciudad de Mazatlán*	2005-2015
National Development Plans *Planes Nacionales de Desarrollo (PND)*	1983
Political Constitution of the United Mexican States *Constitución Política de los Estados Unidos Mexicanos (CPEUM)*	1917, 1960, 1972, 1974, 1983, 2001

A review of the evolution of housing policy in regards to social housing was also conducted, particularly focused on the criteria used for the architectural and urban design of 'INFONAVIT

houses' developments. In Table 2, the documents, regulations and housing policies considered for this analysis are presented.

4.3.3 Direct Observation

This research is interested in the understanding of the interaction between the residents of 'INFONAVIT houses' developments and their built environment and this understanding includes the actions and behaviours the residents have towards their dwellings in relation to the way they adapt to and modify the built environment as well as the way the residents interpret this interaction, act on them and decide over their physical world.

The arguments and explanations for the latter interest imply depth, complexity and a multidimensional characteristic of the data gathered that can be achieved with observational methods (Mason, 2002). Taking the latter into account, it is acknowledged that the necessary information for developing the assessment will not be available from methods that require just to 'stand outside' (Mason, 2002) from the phenomenon, such as document analysis.

Therefore, for this research direct observation was an important source of data that was recorded during visits to the housing developments for recording with photographs and videos the general characteristics of the housing project. These characteristics included the typologies of housing, the amount of houses modified and not modified, the types of modifications, the types of streets and pathways, the urban image, availability of public transport, access to services and public facilities, and urban infrastructure. The observation was done walking around the developments at different times of the day and different days of the week, which allowed obtaining an overall idea of the social ambient and interactions within the housing projects.

4.3.4 Photographs and Sketches

The original characteristics of the houses determined by designers, planners and developers, and the alterations made by the residents, are the tangible outcomes of a construction and socio-spatial process. The direct observation of these elements necessarily involved the generation of visual data; photographs, drawings and sketches were done during fieldwork.

The photographs and sketches aimed to capture the physical, material and spatial modifications, alterations and adaptations made by the inhabitants from their point of view and the researcher's. During the first interviews, residents were asked to capture the modifications made to their houses by taking photographs and producing drawings, however

most of the interviewees declined to produce drawings since they did not consider themselves capable of doing it; they allowed me instead, to develop sketches (Figure 12) while asking them questions about their houses, and while they observed the process.

It was not required or possible to develop a sketch in all interviews. In some cases, residents confessed not having done and not planning on doing any modification to their houses and when not possible, the short time provided by the interviewees did not allow developing one. In Figure 12 is possible to observe the level of detail and types of annotations made with sketch paper and pen during the interviews.

Figure 12. Example of sketches developed during fieldwork
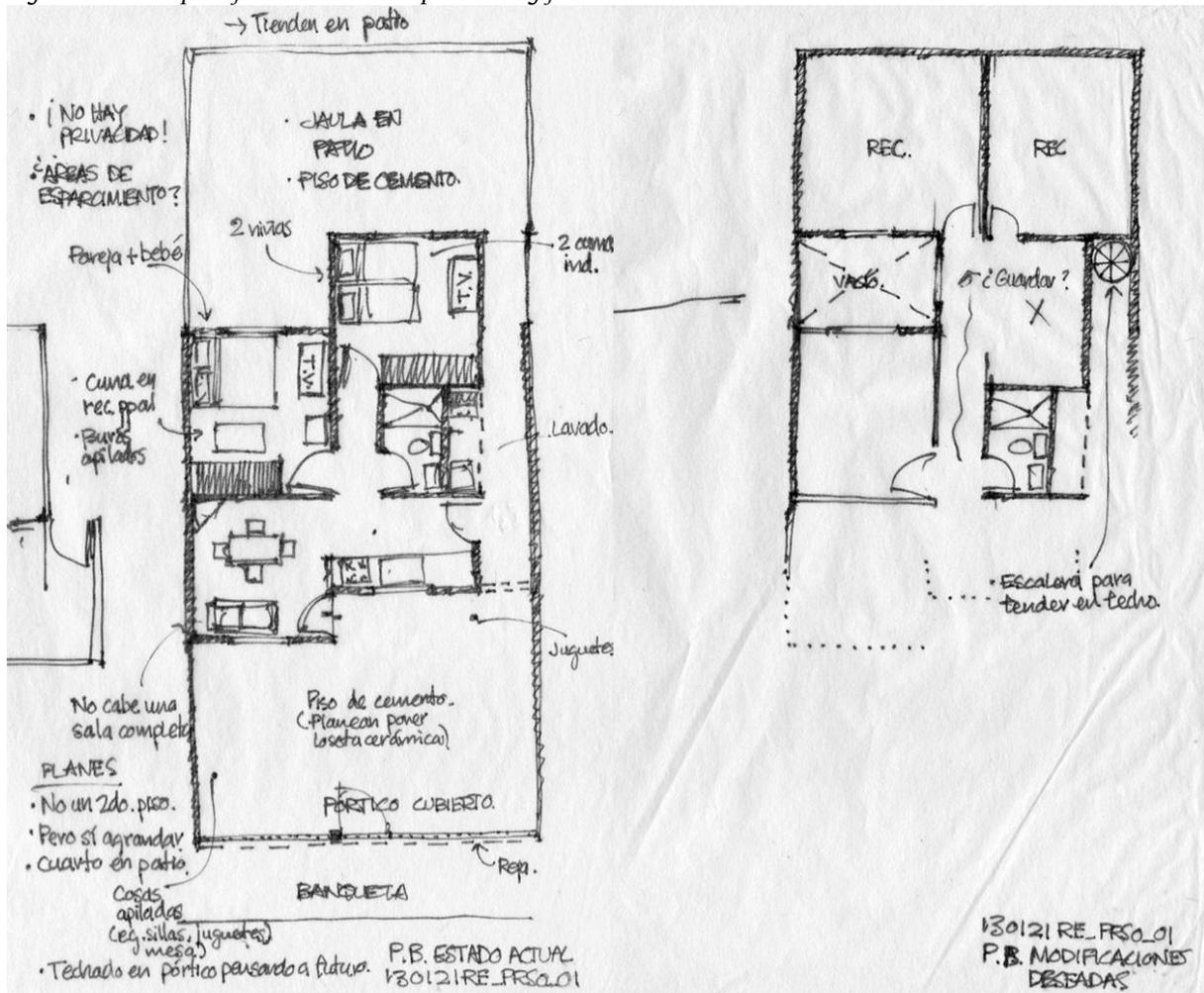
Source: Sketch developed by the author (2013)

This last visual method was also an alternative for asking the residents to take themselves or allow me to take pictures of the modifications of their houses. Many of the residents felt their privacy to be violated if pictures of the internal distribution of their houses were taken. Additionally, during the development of the sketches, residents had the chance to confirm or correct me if what I was drawing was not what they had in mind, triggering a

spatial awareness and reflective process for them, turning sketches into residents' voice, only this time recorded on paper instead of on audio. The sketches were 'transcribed' into AutoCAD drawings during the data analysis process, which will be shown in Chapter 7.

Despite the limitations related to residents' privacy, it was possible for me to take photographs of the general housing developments and the exterior of the dwellings. These photographs complemented the semi-structured interviews by registering the changes of the physical and spatial characteristics of the houses and the general characteristics of the housing developments.

4.3.5 Triangulation

Using only one source of data in case studies is not recommended since it is less likely to allow a broad range of "historical, attitudinal and behavioural issues" to be revealed (Yin, 2003, p. 98). Yin states that an important advantage of more than one source of evidence is the development of "converging lines of inquiry" (Yin, 2003) that will allow a theory of triangulation or a triangulation of perspectives of the same data.

The logic of triangulation is based on the idea that "no single method ever adequately solves the problem of rival explanations. Because each method reveals different aspects of empirical reality, multiple methods of data collection and analysis provide more grist for the research mill" (Patton, 1999, p. 1192). Research studies that rely only on one method are more vulnerable to errors related with that particular method than to studies that use multiple methods in which different types of evidence provide cross-data validity checks (Patton, 1999).

This research is not only based on different methods of data collection but on different views of the same phenomenon. The research employs a method of triangulation through the analysis of semi-structured interviews, document analysis, direct observation and participant observation. Additionally, for contributing to the verification and validation of the qualitative analysis, there will be a "theory/perspective triangulation" (Patton, 1999, p. 1193) since multiple observers will provide their impressions about the researched phenomenon: the residents, the professionals, the archival documents and the researcher herself.

Triangulation represents the use of multiple methods to analyse the same dimension of a research problem (Jick, 1979). However, this assertion does not mean to demonstrate that the different sources of data and the different perspectives of the same phenomenon point to the same result. Different types of research methods are sensitive to diverse real world nuances hence, "an understanding of inconsistencies in findings across different kinds of data can be

illuminative" and "finding such inconsistencies ought not be viewed as weakening the credibility of results, but rather as offering opportunities for deeper insight into the relationship between an inquiry approach and the phenomenon under study" (Patton, 1999, p. 1193). In this research, inconsistencies between the views of residents and some professionals were very productive in revealing contradictions in residents' experiences of their houses..

4.4 STORING AND ANALYSING DATA

During the collection of the data, all the information retrieved was managed in physical and electronic formats. The material obtained from interviews and observational methods was stored physically and electronically, backing up the visual material, scanning sketches or drawings developed in the fieldwork. The documents related to the original physical status of the housing development (i.e. sketches, drawings and layouts), were also stored electronically and physically, scanned when they have been provided on paper and backed up if they have been obtained as electronic files. Some of the software used for storing and managing the information has included word and spread sheet processors (i.e. Microsoft Word, Microsoft Excel), data analysis software (NVivo) and computer assisted design software (i.e. Autodesk AutoCAD, Adobe Photoshop and Illustrator).

The interviews were all held in Spanish, audio recording the process and taking notes in paper, which included the development of sketches. The analysis was also made in Spanish for maintaining the fidelity of the interpretation considering jargon, idiomatic expressions, or the diverse cultural and social meanings embodied in people's words and expressions. The analysis and transcription will be done looking to maintain the richness of the concepts, ideas and feelings of people using footnotes that will explain particular expressions or terms (Crane, Lombard, & Tenz, 2009, p. 61). The interviews, visual material, field notes and documents were classified creating an annotated bibliography for facilitating the storage and retrieval of each piece of information. After its transcription and analysis, the key elements identified in each interview, visual material, field notes and documents were compiled in a summary for facilitating later access (Jackson, 2001).

The analysis of the data was done using a contextual, case study and holistic organisation for obtaining an in-depth understanding of the complexity that researching social processes represent (Mason, 2002). This research is context-dependent and this characteristic also requires considering the emergence of issues or topics that may be specific or idiosyncratic in relation to the use and modification of the houses (Mason, 2002). This could

refer to particular assumptions that the residents have about the physical or material appearance of their house or the way some spaces are used.

Through the interviews, it was expected to find out which elements of the house were modified, creating a historical review of the lives of the residents in parallel to the house life. It will be intended to retain the "holistic and meaningful characteristics" (Yin, 2003, p. 2) of the narratives provided by the residents through their responses. This will allowed to identify the "real-life events" (Yin, 2003, p. 2) that have influenced in the process of modification of the house such as the original characteristics of the house and the feelings towards them or the individual or family life cycles that required a change in the dwelling.

The analysis of the interviews was done reading data literally, interpretively and reflexively (Mason, 2002) looking for the possible meanings of it without forgetting the role the researcher is playing in the collection of it. It will be intended to identify the key elements involved in the relationship with the dwelling, dealing with the interviews as units that tell a biography of the residents in parallel to the house'. By identifying the key elements in each unit, a comparison of the arguments that arose from each one of them was possible, in order to maintain the holistic nature of the case study.

4.5 ETHICAL AND SAFETY ISSUES

Ethical dilemmas are significant concerns in research in social sciences because it involves human and social aspects, which require a constant awareness of ethical reflexivity. Mason (2002) suggests that there are ethical issues to consider when doing semi-structured interviews in general terms and also in particular terms depending on the subject of research. Some of those issues were anticipated but when conducting fieldwork there was the need to make intellectual and practical decisions in situ. As part of an introspective exercise, it is necessary to be aware that not all of the ethical issues involved in the research process can be anticipated in advance but a preparation is needed trying to foresee the types of ethical dilemmas that may arise and the possible responses to them.

Establishing rapport with the interviewees helped both the participants and the researcher to feel relaxed and open however, a constant concern during the interview was held about the participants providing or not the information that is expected or if they were revealing more than they should. In some cases and even without asking them, interviewees ended up talking about issues that could be considered to be private. Those were examples of "ethically important moments" in which "often subtle and unpredictable situations (that) arise

in the practice of doing research" (Guillemin & Gillam, 2004, p. 262) and for coping with those moments, Mason and Guillemin & Gillam recommend to work in the field with a reflexive attitude towards research, where reflexivity should not be thought of as a universally defined entity with a linear development but a cyclical critical process of awareness of our actions, interpretations and thoughts as researchers in the field work.

Subjects of research have the right to be informed that they are being researched as well as the nature of the research through the concept of informed consent (Punch, 1994). Punch recognises the right of the participants to know about the fact of being researched; nevertheless she questions to a certain extent the tight ethical codes that work as guidelines for researchers. For the author, it is a concern that the strict nature of some ethical codes may restrain or restrict the obtaining of information. For this research, a strict moral practice was adopted; participants were always informed about the nature of the research and the implications of their participation. However, the use of a signed consent form hindered, to a certain extent, the achievement of rapport with many of the residents. Some of the participants felt that signing a paper would compromise them if somehow their names, signature or address were revealed. This fear was not mitigated even after explaining them the confidentiality code under which this study was being made. The fear of their privacy potentially being violated was also present when asking them to allow me to take pictures of their houses. In the case of the signed consent form, those who were not comfortable with the idea were not asked to fill it in and sign it but still; they were fully informed about the implications of participating and verbal consent was requested. The photographs were not taken without the consent of the interviewees and for filling that gap in data sketches were made instead.

Some authors suggest that entirely revealing too much information about the nature of the research could bias the participant's answers (Wengraf, 2001) or that under particular circumstances, especially when interviewing high-status powerful people, consent may serve to reduce participation (Reiss, 1979). In this case, giving full information about the objectives of this research was never considered to hinder the information obtained and on the contrary, it was felt that an open explanation of the purpose of this work helped to obtain people's trust.

Translating data can mean a process with elements of friction and hesitation when trying to transfer the actual meaning of a certain expression in one language to another (Crane et al., 2009). The interviews were held in Spanish, which is the native language of the researcher and the participants. Research in a language different from the one in which the

research is going to be presented, can produce power and position aspects. Therefore, translation becomes a complex, political and subjective process in which the translator has agency through which sense is made and meaning transferred from one context to another and the social and cultural meanings of practices and artefacts are translated (Müller, 2007).

In this regard, the translation was developed taking into account the subtleties of the diverse cultural and social meanings embodied in people's words and expressions. It was done looking to produce "a richer insight into diverse cultural understanding of concepts, as well as maintaining an awareness of the difference implications of different terms" and trying to maintain the "intellectual honesty" (Crane et al., 2009, p. 61) of the residents' insights. The latter, as Crane et al. recommend, was done using footnotes in the interviews transcription.

My training as an architect facilitated the analysis and comprehension of the physical and spatial aspects of the data compilation (i.e. taking notes in the form of sketches and drawings) and the document analysis (i.e. being familiarized with the interpretation of architectural and engineering drawings and layouts). On the other hand, there was a constant awareness of the methods of conceptualizing the world, learned, acquired and put into practice after 15 years of a training process from being an architecture student to a designer and practitioner in the architectural design and construction field.

The interviews with the residents and the observation of the physical and spatial characteristics of the houses required having close social interaction with the inhabitants of the social housing developments in private settings. Safety issues were considered on both sides, on the researcher and on the subject of research (Craig, Corden, & Thornton, 2000). Despite the latter consideration, as a female researcher there was a constant awareness of the risk of doing research inside the residents' houses. During the interviews, it was necessary to continually watch out for unexpected conducts or improper behaviour such as physical or emotional threat. Foreseeing the possible risks while doing research in a social housing development, the fact of being familiarised with the city and the local customs and culture was certainly an advantage. This familiarisation with the research site came from the fact of having family contacts in the city and also in some of the developments to be researched. Nevertheless, safety due to the latter was not taken for granted and interviews were mainly done during the day and always stating my location to my family during the research work.

4.6 POWER AND POSITIONALITY

There were two types of interviews considered for this research; those in which the researcher interviews 'up' or where the interviewees have a relatively powerful position, and those in which the interviewees are relatively disempowered (Smith, 2006).

In her article, Smith (2006) highlights the need for a constant reflexive attitude towards the interview process. Even though she recognises the existence of empowered and powerless positions in qualitative interviews, she reviews the idea of power from different perspectives and conceptualises it as a subjective feature in the relationship between interviewer and interviewee. Smith suggests that is not possible to "clearly segregate people into dualistic categories of 'elite' and 'non-elite' (or 'powerful' or 'vulnerable')" since " no-one is removed from the effects of powers in societies" (Smith, 2006, p. 645). She highlights and shares the discomfort of other researchers with the connotation of superiority of the term 'elite' considering that power can be seen as a more diffuse and mobile characteristic and it can exists in different modalities.

Sharing the idea with Smith of the difficulty of defining a real position of power in relation to another person, the fact of interviewing the residents of social housing complexes did not necessarily mean that as a researcher I would be placed in an empowered position. When interviewing professionals from the construction and developer companies, it was not be assumed that the power associated with people was transferred directly onto the interview space but still, it was taken into account that patronizing attitudes could occur.

Based on these ideas, when interviewing the residents of social housing developments, professionals and construction workers, it was taken into account the reflexivity about the research process and special attention was paid to the "shifting dynamics of positionality and power involved in interviewing" (Smith, 2006, p. 647). Those 'shifting dynamics' were related with issues of place, age, gender, the origin of the interviewer and the expectations of the interviewees. The reflexion about the latter issues before going to fieldwork helped the researcher to be aware during the interviews of the potential problems in power relations regards that which can be encountered during the research work.

For this research, the origin of the interviewer played a minor role worth taking into account. In Mexico, the perception towards people originally from the capital can represent a disadvantage when trying to connect with people's opinions and feelings. Since I am originally from Mexico City, this characteristic was thought to influence negatively the interviewees'

disposition to talk given the suspicion people from the countryside have in regards to people from the capital. However, the negative connotation of an outsider from the capital was overtaken by the fact of my family being from the city of Mazatlán. This characteristic notably changed people's attitudes when asked to participate and helped in achieving rapport during the interviewing process.

In small and medium cities around Mexico, the issues of age and gender are relevant when connecting with people, particularly with men. Different from the capital, the conception of the role of women in society was thought to bias the attitude towards the researcher during the interviews in the form of a paternalistic pose in the case of older men or a reluctance to talk in the case of young men. In practice, this issue did not materialised and interviews conducted with men happened to be as fluent as with women and gender did not become a hindering factor for obtaining information. In the case of women, it was not assumed that the researcher was going to encounter a 'power-free' disposition from women. Rapport with both men and women was looked through an honest explanation of the purpose of this research and by using the knowledge about the idiosyncrasy of local culture.

Before fieldwork, reflections about the interviewer being an academic were considered, particularly in terms of how this issue could play a two-way role during the interviews. It was thought on one hand, that the attitude some people hold towards professionals[10] could place the researcher in an empowered position since professionals and practitioners are seen as persons who hold knowledge and therefore, who may have some type of influence on the decision making. On the other hand, and together with the issue of gender and age mentioned above, the attitude towards a female interviewer could hinder or facilitate the quality of the responses during the interview or even the interview itself.

In all cases, it was possible to establish a trustful and respectful conversation with residents, construction workers and professionals. Although in the case of professionals, the participants were seen in an empowered position, the interviews were done as a conversation among peers. In this case, my professional background helped to communicate using a common technical language. In the case of residents and construction workers, it was possible to note shyness from the participants; they frequently confessed not feeling able to provide the information I was looking for. After a few questions, they felt noticeable more comfortable and

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[10] *In this case, the use of the word professional is intended to translate the term 'profesionista' used in Mexico to refer to people who have obtained at least a bachelor degree.*

confident about their answers and this attitude improved while realising the aim of the interview was not to make them feel patronised by the interviewer.

CONCLUSION

This chapter has presented the research strategy used for this research, providing an account of the methodology and methods, the management of data and analysis approach, the ethical and safety issues, and power and positionality dilemmas. The following, will be the first of the analysis chapters of this research, focusing on the definition of 'social' in policy documents, regulations, and its change through history.

CHAPTER 5

THE MEANING OF 'SOCIAL' IN SOCIAL HOUSING

INTRODUCTION

This chapter will address the first of the research questions posed for this study, 'What does 'social' mean in social housing?' drawing primarily on policy analysis. This analysis will include how the social character in the provision of housing for workers has changed since the creation of INFONAVIT in 1972, also covering an analysis of the first definitions of housing for workers and the social character of it in policy documents prior to that year.

Section 5.1 will analyse the concept of housing for workers and the social character of it as stated in the 1917 Mexican Constitution and the 1970 Federal Labour Law. It will argue that the concept of housing for workers and the social character of it were established as a result of the revolutionary discourse inherited from the 1910 Mexican Revolution and were used as the basis of a social provision policy instead of actually addressing the housing demand and the improvement of the quality of life of workers.

Section 5.2 will focus on the years following the creation of INFONAVIT and the political, economic and social changes that influenced the creation of this institution, as well as the policy reforms in 1992. It will review the principles of the original INFONAVIT Law and the impact of the new financing and housing provision system on other documents. It will argue that the production and provision of housing by INFONAVIT was constantly and closely linked to political interests that turned housing into a political negotiation tool through the intervention of unions.

Section 5.3 will analyse the global forces that influenced a major housing policy reform in 1992 and the consequences of it until 2006. It will argue that the imposition of neoliberal recommendations such as those from the Washington Consensus, turned housing into a commodity. It also eliminated the concept of 'housing for workers' and turning workers' national housing funds into accounts managed by banking institutions, leaving little room for a social character in the policy. This transition marked the detachment from governmental institutions from the production of housing and the delegation of it in the private sector.

Finally, section 5.4 will analyse changes in the administration of INFONAVIT and the creation of housing policies since the year 2006 to date. It will argue that the social character

of the financing of housing for workers in the most recent version of the INFONAVIT Law has disappeared and in recent housing laws, it appears to be a detachment of governmental institutions from the production of housing for the most vulnerable parts of the population, delegating it to the population itself.

5.1 THE (NORMATIVE) REVOLUTIONARY 'SOCIAL' HERITAGE

In this section, the concept of 'social' will be explored through the analysis of housing as a constitutional social right and the meaning of 'social utility' and 'social security' as workers' tools to access housing used in the Mexican Constitution. The concepts that may have an impact on the physical characteristics of housing will be also highlighted, revealing the way those concepts were applied in the 1970 Federal Labour Law and the role of unions in the housing production process. It will argue that instead of looking to address the quantitative and qualitative demand for workers' housing, the years after the 1910 Mexican Revolution established the foundations of a selective, clientelist and corporative housing system.

5.1.1 THE 'SOCIAL' RIGHT TO HOUSING OF WORKERS - THE MEXICAN CONSTITUTION

The Mexican Revolution was a social movement that started in 1910 pushed by workers' and rural population's struggles inherited from centuries of Spanish colonisation. One hundred years after the independence from the Spaniards, social justice had not reached the most oppressed parts of the population. One of the immediate consequences of the Mexican Revolution was the creation of a new constitution in 1917; since the Revolution was mostly motivated by inequality in relation to land ownership and distribution in rural areas and in general, workers' rights, the new document created for the new nation was deeply based in the interests of farmers and workers, the sectors of the population that strongly supported the movement and became essential elements for the legitimisation of the post-revolutionary government. According to Carbonell (2010), in 1917 "any other legislation in the world (even the most developed), ruled on the matter" of housing as a constitutional right, which turned the right to housing stated in the Mexican Constitution into one of its most important contributions and an avant-garde document worldwide.

Satisfying the need for housing is a right with a composite property, which means that its violation affects other fundamental rights like the right to labour (Carbonell, 2010); without a secured domicile, having access to or maintaining a job turns out to be difficult. The added peculiarity of the right to housing in the case of Mexico challenges the latter statement relying

on the sector of the population it addresses; it does not look to guarantee the right to housing of every Mexican citizen but of a specific sector of the population: the employed.

The 1857 version of the Mexican Constitution already stated the right to labour, establishing the freedom of every Mexican citizen to choose a profession or job without detailing the particular rights of workers. In the 1917 Constitution created after the Revolution, a section titled "About Labour and Social Provision" containing one single article was destined to address the entitlement of workers to a minimum wage, a maximum eight-hour working day, to unionise and to housing. In this article, the Congress and the legislatures of each one of the states[11] "shall enact laws on labour, based on the needs of each region that should not contravene the following basis, which govern the work of workers, labourers, domestic servants and artisans, and in a general to all labour contracts" (CPEUM, 1917, Art. 123), which as mentioned, were the most marginalised sectors of the population so far. One of the mentioned bases is the one manifesting the obligations of employers in relation to housing.

> *"Article 123. ... XII. In any agricultural, industrial, mining or any other work business, employers are obliged to provide their workers with comfortable and hygienic accommodation, for which the employees will be able to charge the workers with rents that will not exceed the average monthly per cent of the assessed value of the properties. Employees should also establish schools, hospitals and the necessary services to the community. If the work place is located within a town and it holds more than one hundred workers, employees should comply to the first of the mentioned obligations. [...]" (CPEUM, 1917)*

This article made employers responsible for providing housing to workers when the working centres were located outside towns or cities, and when within towns and cities, they employed more than one hundred labourers (Andrade, 1991). Workers' accommodations in both cases should be accompanied by unused pieces of land for the allocation of public markets and buildings for recreational purposes and municipal and governmental use, forbidding the establishment of businesses that promote the consumption of alcoholic beverages or gambling (CPEUM, 1917, Art. 123, Base XIII). The number of employees was thought to be just a consideration of the size and financial force of a company (Ruiz Massieu,

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[11] *Mexico as a nation is constituted by 31 federal states and one Federal District, where the capital (Mexico City) is located.*

1975) during an era when technological and industrial development was still under construction. The reference to the allocation of spaces that allowed the establishment of public markets, governmental buildings and recreational centres in work centres might have expressed an awareness of the principles for the creation of new settlements however, evidence of an interest in establishing the basis for planning or creating new communities was not found. Instead, it was found to be just a response to employers' needs in regards to keep their labour close to the source of employment. This requirement might have followed the concerns of French trends in relation to labourers' control around work centres, revealing a strong paternalistic approach to labour management, probably inherited from the company town model analysed in the following chapter. The facilities required by the article 123 on the other hand, were necessary to fulfil the need for services and urban infrastructure that the government could not meet during an high industrial expansion era (Andrade, 1991).

Nevertheless, what was stated in Base XII of the article 123 that would oblige owners of capital to provide housing to their workers was not exercised in practice (del Rivero & Romero, 2010; Ruiz Massieu, 1975) and considered to be a "dead letter" until the creation of INFONAVIT (Andrade, 1991, p. 331). It was suggested by Andrade (1991) that the reason for the latter was the state's unwillingness to upset the interests of groups that right after the Revolution benefited from real estate speculation. Properties offered for rent around the country were owned by former active participants of the revolutionary movement, including generals and former presidents (Andrade, 1991). The interests of that elite and its relationship with the state, hindered housing reforms in regards to the rights of tenants and landlords revenues and properties, limiting the majority of housing options to properties for rent in urban areas. It is possible then, that this process diverted the attention from the employers' obligation to provide accommodation to their employees. The renting sector remained as the main source of housing until between 1950 and 1960, when housing for rent was two thirds of the total housing stock just in Mexico City (del Rivero & Romero, 2010; González Sánchez, 2006).

The article 123 is the only one in the Constitution that uses the concept of 'social utility', defining it as tools that would benefit every person within a labour relationship. Those tools are defined as popular insurance accounts administrated by the Government for helping workers and their families in the case of disability, accidents, involuntary dismissal from their job or death (CPEUM, 1917, Art. 123, Base XXIX). Social provision on the other hand and although not defined in the Constitution, refers to a set of legal measures aiming to satisfy the "urgent needs of the working class" (Morales, 2008, p. 129). The 'social' attribute of 'social

provision' turned this concept into legal tools created for protecting labourers' needs, setting a social responsibility over those who employ others (de la Cueva, 1972).

In 1960, the article 123 of the Mexican Constitution was reformed for the fifth time although for the first time in relation to housing for workers. In addition to the existing employees' obligations, the organisation of a 'social security' structure for workers was outlined, considering insurance and medical care for workers and their families, and working women's right to medical assistance, maternal leave and access to nurseries. Housing is mentioned again in the article 123 as part of the new social security schemes.

"Article 123. ... B) Among the Branches of the Union, Mexico City government, the federal territories[12] and its workers: ... XI. Social security will be organised based on the following minimum basis: ... f) Cheap housing will be provided to workers for rent or sale, according to previously approved programs. [...]" (CPEUM, 1960)

As mentioned, housing as a right for workers declared in 1917 in the article 123 is a watershed point in history; it stated that within the institutional character of the Mexican government, no worker should be left unprotected and the working class had the right to enjoy the benefits of social security. However, for this research it would be simplistic to grant the right to housing as well as all rights stated in the 1917 Mexican Constitution with a 'social' spirit only due to the fact of being a document which was an outcome of a 'social' revolutionary movement. Those behind the proposal of including housing as a right for workers during the development of the 1917 Constitution were not "romantics or irresponsible paternalists" (Andrade, 1991) aiming to provide housing for mere idealistic motivations. Their proposal aimed to respond to the economic situation that the private and industrial sector was going through. Nevertheless, it should not be dismissed that it also resonated with ideas of not only satisfying housing and health needs, but also it addressed the raising concerns of the European capitalist society since the 19th century about controlling the 'dangerous classes' and addressing the 'social question' (Harloe, 1991), or experimental formulations of a new paradigm of social control (Niethammer, 1981) in work centres.

As mentioned above, the 'social' character involved in housing emerged from the fact that housing was part of 'social provision' measures and one of the 'social security' tools

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[12] *The federal government of Mexico is constituted by three branches, the legislative branch, the executive branch and the judicial branch.*

available for labourers (de la Cueva, 1972). Nevertheless, the 'social' element of the right to housing for workers could be also embedded in its characteristic of housing being a primordial human need and first of all, a human right. At a constitutional law analysis level the difference between individual and social rights are stated, where the first are those were the state abstains itself from intervening in any form that affects the individual's rights, where as social rights are those where the state is characterised by its ability of acting (del Rivero & Romero, 2010). In the case of housing for workers in the article 123, it is not the state who is the one obliged to provide housing but the one in charge of issuing laws and guidelines that should not contravene the employers' obligation to provide accommodation to their workers, which reveals an ambiguous 'social' character as will be explained below.

Housing for workers is considered to be a social right since it can be related to benefit rights that are those that "instead of being satisfied through an abstention of the obliged subject (mainly the state), they require a positive action, normally translated into the benefit of a good or service" (Cruz Parcero, 2001, pp. 90-91), which refer to economically measurable goods or services (e.g. unemployment subsidies, sickness or age, health, education or housing) that groups or individuals have the right to, but can also have access to if it can be afforded, even from private providers. Both in 1917 and 1960, housing was considered as a right of workers accessible through 'social utility' tools and 'social security' programs but not for the rest of the population, which turns it into an exclusive privilege; the right to housing of every Mexican family regardless of their labour status was only established in 1983.

According to the Social Security (Minimum Standards) Convention, social security programs should allow the state to provide a safety net for its citizens in the case of unemployment, sickness, injuries, old age, retirement, invalidity and family responsibilities in the form of health care, income security and social services. Social security aims to "enhance productivity and contribute to the dignity and full realisation of the individual" (International Labour Organisation, 1952). In the case of Mexico, social security has been defined as "a general and homogeneous system of benefits of public right and state supervision that has the objective of guaranteeing the human right to health, medical assistance, the protection of the sustenance means and the social services for the individual and collective well-being, through the re-distribution of national wealth, especially aiming to correct misfortune" (Macías Santos, Moreno Padilla, Milanés García, Martínez Martínez Velasco, & Hazas Sánchez, 1993, p. 1).

Housing for workers is considered a family benefit in international conventions and recommendations that must "ensure structural safety and reasonable levels of decency,

hygiene and comfort" (International Labour Organisation, 1961), and one of the minimum standards of social security (International Labour Organisation, 1952). In Mexico, through the intervention of the employers, the conception of housing aims to benefit low-income workers and labourers who otherwise would not be able to build their own accommodation. Taking into account that during the 1950s Mexico went through its largest rural migration to urban areas, it could be argued that the idea of housing considered in the article 123 of the Mexican Constitution focuses on providing a roof over the heads of labourers or factory workers, which would comprise the majority of the urban labour force during the first half of the 20th century in Mexico.

'Comfortable' and 'hygienic' are terms used for describing the most basic characteristics of accommodations for workers, along with 'cheap' in a later mention of the characteristics of housing that should be "acquired on ownership by workers within certain periods of time" and that would be constructed through "social utility" tools, such as cooperative societies (CPEUM, 1917, Art. 123, Base XXX). The latter characteristics of housing in the Mexican Constitution refer to the built environment in an abstract manner and although it is difficult to translate those characteristics into measurements or materials applied to a house, it is understandable to have this level of abstraction in a document that states the principles of the rights and obligations of Mexican citizens, and a more detailed analysis and definition would be expected in lower-level and more specialised documents (i.e. housing laws, construction and design regulations).

Nevertheless, comfortable and hygienic seemed to look for an improvement of the quality of the built environment of workers that before the Mexican Revolution were employed under conditions of slavery, without rights to cash payment, unlimited hours of work and even less, to hygienic and comfortable housing facilitated by their employers.

The first considerations of housing at a constitutional level did not attempt to tackle the quantitative or qualitative demand for housing of workers or the general population; it only meant at this point, an establishment of the foundations of a social provision system for labourers, a sector of the population that along with the rural population, formed the supportive pillars of the revolutionary movement. Therefore, it established the basis of a selective housing policy, looking to benefit specific groups. The Federal Labour Law, the second document analysed in this section, would continue elaborating on the latter considerations.

5.1.2 THE FEDERAL LABOUR LAW

The Federal Labour Law currently in force was promulgated in 1970 following the abolishment of the Federal Labour Law issued in 1931. The new labour law reasserted the obligation of employees to provide housing to their workers as stated in the article 123 of the Mexican Constitution.

"Article 136. Those required to provide accommodation to their workers are.

I. The agricultural, industrial, mining industries or of any other kind, outside of populations. It is understood that industries are located outside the towns if the distance between the two is greater than three kilometres or where, if less, there is not an ordinary, regular transportation service for persons; and

II. The same companies mentioned in the previous section, located within populations, when workers occupy a number greater than one hundred." (Federal Labour Law, 1970)

The articles 136 to 153 constitute the third chapter of the Federal Labour Law and make exclusive reference to "Accommodation for Workers", including the provision, type and payment of it. Although considered a right of every worker, the right to housing is posed as a conditional both in the Mexican Constitution and the Federal Labour Law, since companies with less than a hundred employers would not be obliged to provide any type of housing (Federal Labour Law, 1970). By conditioning the provision of housing to the amount of workers employed by a company, it has been suggested that company's owners or shareholders could opt for subdividing their industries into smaller firms in order to dodge the latter requirement (Miranda, 2010). This was not an uncommon practice, also allowing employers to keep the size of workers' organisations and unions within the company's control (Miranda, 2010, p. 114).

Echoing the Constitution, the Federal Labour Law requires industries to provide shelter considering the location of the work centres and being more specific about the conditions of distance and workers' mobility in the first article of this section. It also reasserts the characteristics of housing provided by industries as "accommodations [that] should be comfortable and hygienic" (1970, Art. 138). To this point, the Federal Labour Law coherently reaffirms what has been stated in the 1917 Constitution.

The Federal Law does elaborate on specific considerations to employees in regards to the requisites for having access to housing and the ways for requiring it. The length of employment is the minimum requirement workers must comply with, which had to be least one-year (1970, Art. 139). When distributing housing, there were groups of workers that were given preference over others. In order of importance, those being considered first would be workers with more seniority and when with the same seniority, those who are head of household in the first place, and unionised in second (1970, Art. 148). Priority was given to workers who did not own any other kind of property; if a worker already owned a house, he or she would not be provided with another one unless it had been acquired outside any work relation with any company and this would happen only after the needs for housing from the rest of the employees mentioned in the article 148 was satisfied (1970, Art. 149).

To request a house, workers had the possibility of negotiating directly contacting the governmental representatives in each state or the "Ministry of Employment and Social Provision", the institution still in charge today of the supervision of the relationships between employers and employees, and work-based reconciliation (1970, Art. 144). Although direct negotiation between workers and the authorities was possible, unions were considered a conduit for employees to let their employers know about their need of housing.

> *"Article 140. For purposes of the preceding the article[13], employees shall let know the company directly or through the union, their desire to be provided with accommodations." (Federal Labour Law, 1970)*

The role of unions as workers' spokespersons in front of the employers worked in both ways; companies or industries which did not have enough housing stock to satisfy their workers' demand for housing should communicate this to the unions but also the workers themselves (1970, Art. 141, 142 & 147) and would look to negotiate or provide housing as soon as possible (Art. 143). This role as the conduit for workers to claim for their right to housing was arguable since in some cases, the provision of housing was conditioned by the ruling political party[14] in exchange for support from union members and unions.

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[13] *Article 139. Permanent workers with a length of employment of at least one-year, have the right to be provided with accommodations.*
[14] *Until 1938, the ruling party was the Partido Nacional Revolucionario (PNR, National Revolutionary Party), which would become the Partido Revolucionario Institucional (PRI, Institutional Revolutionary Party), which held power in the presidency until the year 2000 and returned in 2012.*

The unions' movement took on particular importance after the beginning of the Mexican Revolution inspiring the creation of *La Casa del Obrero Mundial* (House of the Workers of the World) in 1912, a workers' organisation based on socialist and anarcho-syndicalism principles, looking to promote education and organisation among labourers and artisans and aiming for the creation of unions and workers' associations (Ribera Carbo, 2010). However, unions kept their autonomy for a short time and in the 1920s, ideologically unprepared workers and union leaders keen on maintaining a governmental patronage when the opportunity appeared displaced the unions' movement from its original principles.

The relation between unions and the state was officialised in the 1931 Federal Labour Law and reaffirmed in the 1970 version. This way, a relationship where unions became vote-buying tools for a one-party political system had started, along with a symbiotic relationship that lasts until today, although not anymore in close relation to the provision of housing.

Regardless of the relationship between unions, employers and political actors, housing was planned and the stock determined by the number of workers who manifested their interest. The payment methods would result from negotiations between workers and their employers, according to the Labour Law. Interestingly, the physical characteristics of the dwellings would also be part of the agreement between the two parts but only when, like mentioned in the article 142, the company or industry in charge did not have enough houses to provide.

"Article 145 The agreements mentioned in previous the articles will contemplate: … III. In the case of the article 142, the characteristics of the accommodation to be built, including the area of the accommodation, number and dimensions of each room, sanitary services, kitchen and other additions. [...]" (Federal Labour Law, 1970)

There was also flexibility when considering the type of housing to be provided. Housing could be single-family or multi-family type, "allowing to build accommodation with different characteristics and costs, taking into consideration the company's salaries tabulator" (1970, Art. 146).

Just like the Mexican Constitution, the 1970 Labour Law did not approach housing for workers considering the quantitative or qualitative demand of it either, even though it established a detailed social provision system not only in regards to housing for workers, but to

workers' rights and employers' obligations. However, it legitimised the relationship between unions and the state, which would play a relevant role in the creation of INFONAVIT and the production of housing, establishing the foundations of a corporatist housing policy, which paid attention to the interests of specific actors involved, and a clientelist approach that looked for sources of political support, as will be discussed in the following section.

5.2 SOCIAL RIGHT... 'SOCIAL' HOUSING?

The creation of INFONAVIT was as a response from the state to the need for housing from workers with middle- but mostly low-income (Maya et al., 2008). INFONAVIT's foundation was a result of the lack of interest from the private sector in investing in social housing and the incremental urban growth particularly in Mexico City (García Peralta, 2010), which led the government to take a stronger role in the promotion of housing.

5.2.1 INFONAVIT

In June 1970, the Board for the Study of Housing was carried out in order to know the thoughts of the representatives of business and working sectors in relation to the demand for housing of workers. The outcome of this meeting was a reform to the article 123 of the Constitution, modifications to the Federal Labour Law and the issuance of a law that would create INFONAVIT. However, behind the governmental response to the need for housing was the pressure of strong labourers' organisations like the *Confederación de Trabajadores Mexicanos*[15] (CTM) that pushed the federal government to create a commission that involved the labourers, businesses and public sector to solve the demand for housing of workers throughout the country (Alderete, 1983).

> *"Well, INFONAVIT was created as a response to the need for housing of workers in the seventies. Labour organisations like the CTM that had a lot of power back then, had a vision for creating that institute, in order to build houses and provide their workers and their unionised members with, well... stability and a patrimony that allowed them to have the best possible performance at work. (Real Estate Appraiser, Int@APRONO, 24.10.2012)*

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[15] *The Confederation of Mexican Workers, created in 1936 is the largest confederation of labour unions in Mexico and has traditionally worked closely to the centrist PRI.*

The pressure applied from worker's organisations for the resolution of housing problems is highly significant in the creation of INFONAVIT and its further role as the principal housing promoter in the country. During the 1970s, Mexico was going through a political legitimacy crisis after President Gustavo Díaz Ordaz's term (1964-1970) and during Luis Echeverría Álvarez's term (1970-1976). The attention paid to workers' demands showed the government interest in maintaining the support of strong labour institutions. As a result, a tripartite commission constituted by representatives of the government, private sector employers and workers was built for the analysis of the housing problem, which proposed to create a National Housing Fund.

The Workers' National Housing Fund Institute (INFONAVIT. *Instituto del Fondo Nacional de la Vivienda para los Trabajadores*) was created in 1972 for administering it, using contributions from private sector's employers, which would consist of 5 per cent of their workers' salary. In its original mission, extracted from the acceptance speech of the first director of the institute Jesús Silva Herzog, INFONAVIT would attend to the constitutional right of workers to comfortable and hygienic housing in a "systematised and organised way" (Silva Herzog, 1972, p. 393), through a "social solidarity approach" to the housing problem (p. 395). The latter was translated into the institute's four objectives and into a housing fund that would work as a collective account or "solidarity fund" (García Peralta, 2010, p. 41), which through the contribution of all workers regardless of their income, would facilitate housing credits to workers earning the lowest salaries. The institute's objectives were stated in INFONAVIT Law's third article:

> *"Article 3. ...*
>
> *I.- To administrate the National Housing Fund;*
>
> *II.- To establish and operate a financing system that allow workers to obtain sufficient and cheap credit for:*
>
> *a).- Acquiring for ownership comfortable and hygienic accommodation;*
>
> *b).- The construction, repair, enlargement or improvement of their existing accommodations, and*
>
> *c).- The payment of liabilities acquired through the aforementioned concepts;*

III. To coordinate and finance housing construction programs for workers' housing ownership; and

IV. Everything considered in the fraction XII, section A of the article 123 of the Constitution and the Fourth Title, Chapter III of the Federal Labour Law, and what the present law establishes." (INFONAVIT Law, 1972, Art. 3)

Employees from the public sector would not benefit from INFONAVIT but instead from FOVISSSTE, a housing fund created in 1974 that would play the same role as INFONAVIT and those working in the militia, by the *Fondo de la Vivienda Militar* (FOVIMI, Military Housing Fund). The latter division responds to the lack of a unified social security system in Mexico; even today, there are three main autonomous bodies in charge of it: the *Instituto Mexicano del Seguro Social* (IMSS) that benefits workers from the private sector, the *Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado* (ISSSTE) for workers from the public sector and the *Instituto de Seguridad Social para las Fuerzas Armadas* (ISSFAM), for members of the army. INFONAVIT stood out from FOVISSSTE and FOVIMI due to having the larger amount of beneficiaries and for having the necessary structure and capacity for financing the growing demand for housing (García Peralta, 2010).

The institute's objectives not only showed a concern about housing ownership but also about housing quality. The main objective was the production of houses for sale that would be easily acquired by workers through their housing fund's accounts and would also allow them to invest in their existing accommodations. Although housing for workers was offered for sale in the previous decades before the creation of INFONAVIT, it was through programs limited mostly to housing developments in Mexico City. After 1972, social housing and ownership become two linked concepts in programs at a national scale that took Mexico away from trends found in other parts of the world. In Europe, social housing was commonly provided for rent and through non-profit organisations that aimed to address the needs of very specific groups, which included not only the employees as in the case of Mexico, but also vulnerable groups, such as women and people living in unsanitary accommodation (Scanlon, 2014). Public housing in the United States, was the housing model that aimed to address the needs of the most vulnerable sectors of the population since the 1930s, however, by the 1970s this model was considered, by some, a failure, since its location and specific demographic target, marginalised public housing projects inhabited by people with low residential mobility (Briggs & Wilson, 2005). Although different from the United States, in relation to the principles for

profiling the inhabitants of social housing, in Mexico residential mobility and choice will become part of the wider problems that will capture workers in a specific type of housing, as is discussed in section 5.3.2.

The changes applied to the article 136 and 137 of the 1970 Federal Labour Law are also coherent with what is expressed in the INFONAVIT Law and the reforms to the article 123 of the Constitution.

"Article 136. Any agricultural, industrial, mining or any other kind of work source business is required to provide workers with comfortable and hygienic accommodation. For this obligation to be fulfilled, companies must contribute to the National Housing Fund with five per cent of the wage of their workers. (Federal Labour Law, 1972)

Article 137. The National Housing Fund will aim to create financial systems that allow workers to have access to affordable and sufficient credit for acquiring in property comfortable and hygienic accommodations, for the construction, repair or improvement of their houses and for the payment of liabilities acquired by these concepts." (Federal Labour Law, 1972)

The "Accommodation for Workers" section however, are completely transformed echoing and reflecting the role and objectives of the Housing Fund (Federal Labour Law, 1972, Art. 138 & 139). References to the minimum amount of workers needed in a company for providing housing or the location of work centres were eliminated from the Labour Law. The first change can be seen as an advantage since with this modification, every worker regardless of the size of the company he or she works for, would have the right to a housing credit. References to working centres as elements that trigger the formation of new communities on the other hand are lost, which could be justified and considered an obsolete criteria.

The creation of INFONAVIT and its law happened in parallel to changes in the Mexican Constitution and the Federal Labour Law. In relation to the Mexican Constitution, the implementation of the INFONAVIT Law required to reform the article 123, still referring to the characteristics of housing which should be 'comfortable' and 'hygienic' and to the provision of housing for rent or sale as an employers' obligation. The addition to this article is that the latter obligation will be fulfilled by the employers' contributions to a national housing fund in order to benefit their workers through access to "cheap and sufficient credits" (CPEUM, 1972).

The concept of 'social utility' appears again in this article and refers to the character that the law that coordinates and regulates the management of the housing fund must follow.

The contributions to the housing fund are considered as companies' and industries' "social utility expenses" that will look after the worker's benefit in terms of accessibility to credits or devolution of savings (Federal Labour Law, 1972, Art. 141). It is also stated that the organisation in charge of administering the Housing Fund, will "determine the amount of money for financing housing programs that will be acquired by workers and that will be used for acquisition, construction, repair or improvement of such houses" (1972, Art. 149), and will determine the equitable distribution of resources throughout the country and for the individual allocation of credits, a raffle system will be applied when necessary.

References to unions as actors in the housing provision and production disappear from the 1972 version of the Federal Labour Law, trying to show a more transparent relationship between workers and INFONAVIT and without intermediaries. As mentioned in section 5.1, the role of unions became relevant in the production and distribution of housing before the creation of INFONAVIT as the intermediaries between employers and employees. Although that role was no longer stated as needed in labour policies, these organisations maintained a place in the housing provision game on the following years, as the following INFONAVIT official's account reveals.

"It was like this. In the past INFONAVIT built for CTM, CANACO[16], CANACINTRA[17], several unionised groups and non-unionised groups... basically three sectors: CTM, the Chamber of Commerce and CANACINTRA and the hotel industry. In the beginning there wasn't a difference in regards to the salary and the type of housing you got. Every worker got the same. You could work for a company that belonged to CTM, they created a trust, which meant that BIMBO, Envases de Sinaloa[18]... every company that belonged to the CTM got a certain number of houses that were distributed among the workers." (Official, Int@INFONAVIT, 12.12.2012)

The intervention of unions and their symbiotic relationship with the ruling party turned housing into a vote-buying tool and INFONAVIT into an important catalyst of political

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[16] *National Chambers of Commerce, funded in 1917.*
[17] *National Chamber of Industry and Transformation, funded in 1941.*
[18] *A company located in the state of Sinaloa, were Mazatlán is located.*

co-optation and economic power (García Peralta & Perló Cohen, 1984). The intervention of unions in the production and distribution of housing would last until at least the late 1980s, as backed up by some residents from the housing development 'INFONAVIT Jabalíes', built by INFONAVIT and finished in 1988:

> "Adela: I started working in Teléfonos de México and was lucky enough to get a house through the union after about five years of being working there.
>
> Antonio: You could submit the application to INFONAVIT on your own. In our case, Teléfonos de México's union got a package of 40 houses and (Adela) and her workmates were told that those who wanted a house, there were 40 houses available. That's how she got it." (Adela & Antonio, Int@InJa, 23.05.2012)

> "Ángela: (Her husband) asked for the house for my mother-in-law and other five persons to live and he got it through the union [...]. It was the only type of housing they could give to him. The problem was his age; being too old he was not entitled to acquire a house. There was a house in a corner in Insurgentes Avenue and he chose it since it was offered to him by the union. In other INFONAVIT developments like INFONAVIT Playas, you got your house through a raffle. Supposedly you submitted your application and they were raffled but I don't know depending on what. I submitted around five applications and never got a house. In his case, it was offered directly to him by the union, because he was part of the new administrative board." (Ángela, Int@InJa, 01.02.2013)

From the interviewees' perspective, unions facilitated the acquisition process even when in those cases the requirements were not strictly fulfilled by the worker. Despite the acknowledgement from academics (Alderete, 1983; Connolly, 1998; García Peralta & Perló Cohen, 1984; Garza & Schteingart, 1978) and professionals interviewed of the importance of unions in the creation of INFONAVIT and the distribution of housing, the interviewees testimonies in 'INFONAVIT Jabalíes' showed that in most cases unions did nothing for them when looking for a house. The sample of interviewees from a development built in 1988 analysed for this chapter do not reflect the scale of the influence of unions at an individual scale. However, unions might have been playing another kind of role at higher levels, not exclusive to the distribution of houses among their unionised members but more related to the construction and financing of social housing, as will be discussed later in this section.

The newly created INFONAVIT Law aimed to protect the worker by stating the employers' obligation of enrolling their employees in INFONAVIT's census, contributing to the National Housing Fund and making discounts to workers' salaries in accordance to what is authorised in the Federal Labour Law (INFONAVIT Law, 1972, Art. 29). The latter ensured that the worker would not be excluded by his or her employer from his right to a housing credit and the contributions from both the employer and the employee will be executed in due time and form, making the registration with INFONAVIT also a procedure that the worker should not worry about. In case the employer omits to fulfil that responsibility, workers could claim their right directly from INFONAVIT, which would not exempt the employer from contribution and would then risk being sanctioned (1972, Art. 32).

In relation to the physical production of housing, the 1972 INFONAVIT Law made an account of the use of the resources of the institute, which would be for the acquisition of land or plots for building housing developments where housing should be 'comfortable and hygienic', looking for an equal distribution of resources throughout the country (1972, Art. 45) and in addition it also provided on the one hand, the granting of credits to workers for acquiring, repairing of improving their houses, and on the other hand, funds for financing the construction of housing developments.

"Article 42. The resources of the Institute will be used for: ...

II. Financing the construction of housing developments which houses will be possible for workers to acquire using credits granted by the Institute.

The mentioned financing will only be conceded through requests for tender for housing developments approved by the Institute and that adjust to the applicable construction regulations.

The Institute, for every financing granted for the construction of housing developments, will establish the obligation of those who develop them to preferably acquire the construction materials from ejidal *companies, when these materials are found to be of equal quality and price than from other providers. [...]" (INFONAVIT Law, 1972, Art. 42)*

The resources for the production of housing were supposed to be administered first in relation to housing demand and the different needs for housing "giving preference to low income workers in the different regions of the country"; secondly, in relation to how feasible it

was to construct the housing developments and finally, in relation to the budget and number of workers that required housing throughout the country (INFONAVIT Law, 1972, Art. 46). For the first time in policies related to the production of housing, the type of worker that will be treated preferentially by housing programs is clearly stated. Housing stock and demand will be determined by low-income workers around the country in accordance to projects' feasibility and regional budgets from INFONAVIT resources and not from market tendencies. This showed an interest in prioritising and benefiting those workers in a vulnerable economic situation, and a significant symbolic engagement with the political notion of 'social' in social housing.

Credits in each region of the country would be granted also following a set of priorities, taking into account the number of family members, the worker's salary and the price of the houses that will be available. Within a group of workers with similar characteristics, a raffle would be executed with the presence of a notary (Art. 47). The maximum amount for each credit will be determined by INFONAVIT's Administration Council, in accordance to the institute's General Assembly. In addition to the credit, the council would establish the maximum sale price for the houses considered to be acquired by workers (1972, Art. 16 & 48).

The General Assembly is the supreme authority within the institute, formed by three groups of fifteen members, each one representing the federal executive branch, national workers' organisations and national patronal organisations (Art. 7). The Administration Council would be integrated by fifteen members; five members would represent the Federal Government, five representing workers and the rest representing the employers (Art. 12). In theory, the tripartite composition represented the workers, the employers and the government, which through an equal decision-making power, would ensure an equal establishment and distribution of resources and credits. The Assembly and the Council would create the credit and financial policies within the institute and the rest of the administrative personnel of the institute, such as the institute's director and sub director, the sectorial directors and other commissions within INFONAVIT, would act as the executers of those policies.

However in practice, both the Administration Council and the General Assembly appeared to lack real power since the creation of INFONAVIT, the institute's director and the administrative body were the main actors responding to the internal and external pressures and were responsible for taking action on the decision-making process (Nuñez, 1974). The Council and the Assembly were only a reflection of a state deeply rooted in an authoritarian

and corporatist philosophy that granted INFONAVIT's actions a "paradoxical" character during the first years after its creation (Alderete, 1983, p. 345), like the substitution of a computerised system for allocating housing or 'direct promotion' scheme, for an 'external promotion' mechanism for the grant of credits and construction of housing developments.

The mentioned paradox refers to the fact that housing was originally allocated by INFONAVIT and not by unions through the above-mentioned 'direct promotion' system; a socioeconomic computerised analysis that identified workers in more need for housing. It was designed by request of the first institute's director Jesús Silva-Herzog (1972-1976), who considered it to be the best way for ensuring a just, efficient and corruption-free method (Alderete, 1983). The latter system was not completely infallible and safe from biased management but it was considered to be "an important step forward in relation to the discriminatory ways used in other state institutions, where political factors have set the rules" (Garza & Schteingart, 1978, p. 160).

The search for a better system from the first director of INFONAVIT had a radical impact on the way housing was promoted and produced, and consequently, on the social character of the institution, allowing him to oppose the implicit corporatist contract by leaving union leaders to deal among their unionised, setting the basis of the 'external promotion' mechanism mentioned earlier, in which unions are the ones establishing the housing demand and distributing housing amongst labourers (Alderete, 1983). Although considered "apparently naïve [but] efficient focus" (Alderete, 1983, p. 347), Silva-Herzog's actions were of somebody whose position in an institution allowed him to generate specific outcomes, highlighting the importance of considering the role of individuals in institutional and organisational processes (Benson, 1977). Individuals' roles within organisations will help to obtain a deeper understanding of the processes behind INFONAVIT's performance and transformation, avoiding a demonising argument in regards to its loss of social character, as it will be argued in Chapter 6.

It is clearly interpreted from the article 42 mentioned above that refers to the use of the institute's resources, that INFONAVIT was not created as an organisation that would work as a developer or construction company; the construction of housing projects would be made by constructors that bided the housing projects based on designs and programs approved by INFONAVIT. Nonetheless, the article 42 – that would remain unreformed until 1981 - did not reflect what happened in practice during the first years following INFONAVIT's foundation or

the changes in the way the development and construction of workers' housing to constructors or construction companies was assigned during the first years of life of INFONAVIT.

During the first six years after INFONAVIT's creation, INFONAVIT was closely involved in the whole housing production process except in the physical construction of the housing projects, which was done by constructors through the 'direct promotion' process (Connolly, 1998). According to Connolly, INFONAVIT was never in charge of the construction of the houses, an argument challenged by Alderete (1983), who acknowledges that during the first years of the institute INFONAVIT built the housing developments and this changed as years passed by with the implementation of the 'external promotion' process. Testimonies from some interviewees referred to INFONAVIT as 'the one' in charge of the construction of the housing developments or as 'one developer' the one in charge during the first decade of life of INFONAVIT, which suggests there was a direct involvement from INFONAVIT in the physical production of the projects or a close relation to a particular constructor or developer.

"In the 1970s the institute was indeed, the one building and selling the dwellings but at the same time, I think on those years and believe that there was more value, there was more morality and less interest from people in making profit by doing the wrong thing." (Real Estate Appraiser, Int@APRONO, 24.10.2012)

"It was interesting back then, in the 1970s, 1980s when you had only one developer [...]. Nowadays, INFONAVIT leaves the construction game, it stops being the one setting the rules and allows different actors to play a role". (Architectural Design Manager, Int@ARA, 11.09.2012)

The assignment of the development and construction of the housing process changed after 1978 and lasted until 1992 when the 'external promotion' system started (Connolly, 1998), in which INFONAVIT "only approve(d) and finance(d) 'housing packages' promoted by representatives of the labour and business sector" (Alderete, 1983, p. 318). Both Connolly and Alderete agree on the relevance of the combined work of workers' organisations and the business sector at this point in the history of housing for workers, which lies in the loss of transparency during the housing distribution process and control over the design of the houses from INFONAVIT.

The added 'moral' value of INFONAVIT's work mentioned above by an interviewee (Real Estate Appraiser, Int@APRONO, 24.10.2012) and highlighted by other participants as a more evident 'social character' risks sounding like a romanticised perception of the past history of INFONAVIT. Nevertheless, the computerised housing distribution process utilised before the 'external promotion' system actually appeared to focus on the most vulnerable workers in relation to access to housing.

Alderete (1983) considers that the external promotion system is a result of unions', governmental or business sector's initiatives, leaving INFONAVIT only in control of the financing and supervision of the housing projects, and the provision of land for the allocation of developments, an argument backed by Connolly (1998). Under the external promotion system "the private promoter, generally a product of the association between a union and a construction company, had the initiative over the project's direction and the distribution of credits", leaving INFONAVIT only in charge of the normative control of the design of housing "by applying design prototypes and in the majority of the cases, by contributing with (the institute's) territorial reserves and administration of the credits" (Connolly, 1998, p. 35).

In any case, the direct involvement of INFONAVIT in the supervision of the development's construction is confirmed by one interviewee who has been working for INFONAVIT in the state of Sinaloa since the 1970s.

"I've worked for INFONAVIT since the beginning and happened to work for it as a supervisor back then. We demanded quality. We were stuck to the construction site following a strict timeline. I used to coordinate a small team of supervisors and made them aware of what was happening and told them 'look, over there they're going to pour concrete for the foundations, check that!' The construction company sometimes complained about us! But it was part of how things were done and I loved that because we had the chance to be in the site." (Official, Int@INFONAVIT, 12.12.2012)

The direct supervision of INFONAVIT at the construction sites guaranteed better levels of material quality of the houses delivered, according to the official interviewed. The social interest of INFONAVIT, according to him, was not only to benefit the worker but also to maintain a relationship with the unions on good terms. In any case, none of the interviewees was able to identify the name of the developer or developers that made bids or worked for INFONAVIT during the 1970s or 1980s, although it is highly improbable that it was a unique

developer at a national level. It was suggested by interviewees however, that members of the institute might have taken advantage of their position and benefited their close circle of relatives or friends over the years.

It is during the 1970s and early 1980s when the role of unions and the relationship with public and private sector emerges again as an important factor in the analysis of the physical production of housing for workers. As argued above, unions might not have been in complete control of the individual distribution of housing among workers according to the evidence collected for this research. However, evidence suggests that some unions were playing a different role at a different scale in the housing process.

According to García Peralta (2010), "businessmen, public officials and union leaders that integrated the tripartite commissions, took advantage of their role for creating construction companies" and they, along with construction companies that produced housing at a large scale, benefited the most with the creation of INFONAVIT (García Peralta, 2010, p. 41). As part of his experience working for INFONAVIT during the 1980s, the same interviewee cited above hinted at the role of an INFONAVIT delegate in the state of Sinaloa who was also brother of a deputy for the Institutional Revolutionary Party (PRI) at that time, to help avoiding a particular construction company being meticulously supervised by the interviewee and his team.

5.2.1 HOUSING FOR EVERY FAMILY

As discussed in section 5.1, the conception of housing as a right at a constitutional level appeared to be exclusive for workers. Housing programs since 1917 have been detailed in policy documents in benefit of the employed, who would have access to 'hygienic and comfortable' accommodations through 'cheap and sufficient' credits. The principles of this post-revolutionary housing policy were based on a selective social provision system that focused on benefiting those groups that supported the revolutionary movement, mainly the labourer sector, but left aside the rest of the population that had no work relation with any business sector.

The fourth article of the 1917 Mexican Constitution guaranteed the right to practice to any profession or occupation as long these are lawful (CPEUM, 1917) and in 1974 this article was reformed and instead, it began by contemplating gender equality and family planning and in 1980, the parents' duty of ensuring children's well-being (CPEUM, 1974). In 1983, the right to health care was elevated to a constitutional level along with the right to housing.

"Article 4. ... Every family has the right to enjoy dignified and decorous housing. The necessary tools and support for achieving the latter objective will be established by the law. [...]" (CPEUM, 1983)

As in the article 123 of the 1917 Mexican Constitution, the fourth article refers to the characteristics of housing in abstract terms, as 'dignified' and 'decorous', going along with the standards of housing as a social security benefit stated by the International Labour Organisation in 1961. However, it is not clear the reason behind the distinction between 'comfortable' and hygienic' for workers, and the characteristics of housing for every Mexican family. Despite the expected level of abstraction in the Mexican Constitution, Carbonell (2001) and del Rivero and Romero (2010) propose a discussion about broadening the concept of housing at a constitutional level and about the adoption of a conception with less "moral baggage (that) infers more than a mandate, a referent of desires" (del Rivero & Romero, 2010, p. 11).

The discussion proposed would fit into the idea of 'adequate' housing posed by the United Nations that would not only encompass the right to 'enjoy' dignified and decorous housing, but the right to adequate housing, in which legal security of tenure, affordability, habitability, availability of services and infrastructure, accessibility, location and cultural adequacy should be guaranteed (UN-Habitat, 2009). This discussion of housing as a fundamental right emerged from the need for a wider discussion about housing as a fundamental human right in the legal realm, where "the dominant tone of the reflections (on this topic) has been of resignation, where the right to housing often appears displaced to the evanescent world of ethic aspirations with scarce legal relevance" (Pisarello, 2003, p. 19). The latter argument could be equally valid in the definition of the built environment in social housing, where concepts like habitability, privacy or flexibility are considered to be luxury assets, a topic that will be discussed in Chapter 7.

During the 1980s, there were not modifications made to the 1972 INFONAVIT Law's articles discussed for this chapter and the modifications made in the Constitution did not have a direct impact on the institute law or structure. In 1983, President Miguel de Madrid Hurtado (1982-1988) presented his *Plan Nacional de Desarrollo 1983-1988* (PDU, National Development Plan) proposing to achieve four objectives: to preserve and strengthen the democratic institutions, to overcome the economic crisis, to recover the country's growth capacity and to

initiate the qualitative changes needed in the nation's economic, political and social structures (PND, 1983).

Along with the PDU, President De la Madrid created the *Programa Nacional de Desarrollo Urbano y Vivienda 1984-1988* (PNDUV84, National Urban and Housing Development Program) following his government's objectives posed in the PDU. The PNDUV84 considered that urban development, housing and the natural environment were the basic elements in which the quality of life was manifested and therefore, the priority for developing better cities (PNDU, 1984). The consideration of the built and natural environment as triggering elements of a better quality of life turned this urban program into a watershed point in Mexican housing policy history.

One of the outcomes of the creation of the PNDUV84 was the issue of the Federal Housing Law in the same year. The 1984 Federal Housing Law echoes the recently reformed fourth article of the Constitution in relation to the characteristics of housing, clarifying the 'social interest' of the document.

> *"Article 1. The present Law is regulatory of the fourth the article of the Mexican Constitution. Its dispositions are of public order and social interest, with the objective of establishing and regulating the tools and support so every family can enjoy dignified and decorous housing. [...]" (Federal Housing Law, 1984)*

The housing law's guidelines attempted to focus on the interest of the most vulnerable parts of the population, including those without a job. Although the INFONAVIT Law focuses only on the employed groups and in INFONAVIT's case those in the private sector, the Federal Housing Law established that on housing programs at a national level, there would be a priority on satisfying the need for housing of the vulnerable and unprotected. Additionally, the Federal Housing Law aims for a coordinated collaboration between the public, social and private sectors in order to integrate a National Housing System, which would be the "the integrated and harmonious set of legal, economic, social, political, technological and methodological relations that provide with coherence to the actions, tools and processes in the public, social and private sectors that aim to the satisfaction of the housing needs" (Art. 2, Sec. VI & V).

In relation of the production of the physical dimension of housing, the guidelines state the need for the improvement of the physical status of the current housing stock is presented as well as a priority and an improvement of the housing production processes and the "promotion of socially approved constructive systems" (Art. 2, Sec. VII & VIII) looking also for the direct participation of the communities benefited by housing programs and promoting a more informed and involved participation (Art. 2, Sec. IX & XIII). Housing should be integrated to its natural surroundings and to take into account the preservation of the natural resources (Art. 2, Sec. XI), setting the basis of an ecologically sustainable development. Finally, the production of construction materials used for the production of housing should be promoted and supported for achieving lower prices in housing (Art. 2, Sec. X).

The guidelines posed in the second article of the Federal Housing Law also show although in a broad way, an awareness of the social, political, economic and physical dimension of housing, and an acknowledgement of the need for the participation of all the sectors involved in the housing process, as a necessary factor for the successful achievement of the national housing policy's objectives. Following the general guidelines, the first definition of 'social housing' in a housing policy is presented as well as further references to their physical characteristics.

"Article 3. ... For all legal purposes, social housing is understood that which value at the moment of its termination does not exceed what results from multiplying ten times the general minimum wage per year and according to the area of the country." (Federal Housing Law, 1984, Art. 3)

The definition of 'social housing' so far, had emerged from criteria based on cost. The average minimum wage during President De la Madrid's term was over three thousand pesos, which would correspond to $128.91 (±£5.86) in the present. Therefore, the cost of a social housing unit located in Mexico City in 1983 would be the equivalent of around $47,000 (±£2,136) today. If applying the minimum wage in force in 2015, which would be $70.10 (±£3.18), the cost of a social housing unit nowadays, would be around $25,586 (±£1,163) following the latter criteria. This definition of social housing would allow housing prices to go up or down in proportion to workers' income.

Nevertheless, social housing is not a term used in INFONAVIT Law and the criteria for establishing the sale price of housing was not unfolded in its first version apart from being left

to the consideration of the institute's Administration Council (INFONAVIT Law, 1972, Art. 48). In a reform in 1981, the sale price is said to be the one that results from "the appraisal value of the accommodations, the property tax and payments for the right of water consumption, as well as the donations and urban equipment" (INFONAVIT Law, 1981, Art. 42).

Regardless of the criteria for determining the price of housing, at this point and until the late 1980s, credits granted by INFONAVIT and even by FOVISSSTE were backed by financial aid to low-income workers through highly financed subsidies. The latter would allow beneficiaries of social housing programs to have access to cheap houses and to pay their credits in a relatively short period of time. Some residents of 'INFONAVIT Jabalíes' confessed have done this, although some of them complained that the discount to their salaries was excessive.

"Adela: After I got my INFONAVIT house sometimes I spent months feeling like dying! They discounted me a lot since my salary was not a fixed amount. But still, I paid the house in three or four years...

Antonio: Around five or six.

Adela: Yes. But they took away a lot of money. If we went out on vacations, I knew in advance I was going to have three months with zero money. It was very tough." (Adela & Antonio, Int@InJa, 23.05.2012)

"My dad didn't last much paying this house. The discount to his salary wasn't that much. He spent 15 years paying the house but it could have been lees if it wasn't because he went unemployed for a while" (Adriana, Int@InJa, 24.05.2012)

Credits granted by INFONAVIT and FOVISSSTE until 1987, covered almost the total price of a house and were supposed to be paid in a maximum period of time of 20 years through monthly discounts to the worker's salary (20 per cent) with an amortisation that allowed workers to pay the loans in three or four years (Connolly, 1998), something that drastically changed after the 1992 policy reforms and the intervention of banks in the management of the National Housing Fund. This will be discussed in the following section.

In the Federal Housing Law, the physical characteristics of social housing are not detailed beyond the general consideration of housing to be "dignified" and "decorous", and

available for every Mexican family through the tools provided by the law. However, there are general design norms that consider the classification and application of designs in the construction of housing, the modular coordination of its elements and architectural spaces in accordance to the different regions of the country (Art. 39). The quality and type of the construction materials and construction methods should be in accordance to those needed or available in each part of the country. The use of 'ecotechnics' is considered for a more efficient use of water as well as the use of prefabricated construction elements at a national level.

The sections of the Federal Housing Law mentioned above that refer to the physical characteristic of housing attempt to create designs and construction methods that respond to the geographical and climatic features of the different regions throughout the country. This would not only create houses whose design actually varied in area or height, construction materials or architectural design, but would promote the use of local labour forces specialised in the techniques of each region. However, since the first housing designs and developments promoted by INFONAVIT, it is not been possible to observe a real variation between housing typologies built by the institute throughout the country, contradicting what it is expressed in the housing law.

INFONAVIT was created as a result of the increasing demand for housing and the pressures of workers' organisations. Despite the social character of INFONAVIT's objectives, workers' organisations and members of the institute's board that played an important role on the creation of the institute also played a role on the distribution of housing. Although the institute was created on the basis of a solidarity fund and with an interest in benefiting the most vulnerable parts of the working population, the clientelist interests of those in charge of the production deprived INFONAVIT from its social aims. The latter, in addition to the anticipation of the neoliberal reforms that will be discussed in the following section, initiated a decline in the social character of social housing.

5.3 NEOLIBERAL REFORMS

In 1989, the US government and international financial institutions released a set of ten recommendations based on a framework that included fiscal discipline, public expenditure priorities, tax reforms, financial liberalisation, exchange rates changes, trade liberalisation, privatisation and deregulation techniques, and the reduction of the role of the state. The recommendations from the Washington Consensus were controversial since its implementation was conditioned under the International Monetary Fund and the World Bank.

5.3.1 THE WASHINGTON CONSENSUS

In Mexico, the period of time from the 1970s until the late 1980s was known as the era of the "Welfare State" during which state housing programs were subsidised and considered a benefit for the working class (Puebla Cadena, 2002). By the second half of the 1980s, the Mexican economy was facing recession and inflation problems after three decades of good economic indicators and relative price stability; workers' purchasing power decreased in 1986 and the annual gross domestic product was not enough to counteract the population growth or the decrease in economic activity in the same year, which did not favour a positive development in the housing production and provision sector (Montero, 1988).

The Washington Consensus' recommendations meant an internationalisation of the approaches taken to the housing demand and production from the housing sector. This internationalisation aimed to apply measures and solutions based on concepts coined in developed countries, such as housing standards, affordability, property rights and even the causal factors behind social or economic problems related to housing. The impact of the World Bank and other international aid agencies had in promoting and imposing "their favoured (and changing) theories and practices of housing" (Pugh, 2001, p. 400), disregarded the fact that each country develops its own housing and urban policies within its own political, economic and cultural context.

The 'recommendations' from the Washington Consensus had direct impacts on Mexico on the production, provision, financing and distribution of housing. The impacts resulted in reforms to the INFONAVIT Law, particularly in relation to the management of the housing and retirement accounts, and reforms to the Agrarian Law related to the acquisition and management of *ejidal* land for urbanisation. Based on the World Bank recommendations and seeking a less interventionist role, the Mexican state deregulated land and the housing sector aimed to achieve a more effective real estate market through the creation of facilitator strategies (Esquivel, Maya, & Cervantes, 2005), which would be:

1. The development of the right to property.

2. The promotion of the financing of mortgages.

3. The rationalisation of subsidies.

4. The provision of infrastructure for residential urbanisation.

5. The regulation of the urbanisation of land and of the construction of housing.

6. The coordination of the construction sector.

7. The improvement of the necessary institutional framework for administering the housing sector. (Puebla Cadena, 2002)

The latter recommendations had a particular effect on the urban and architectural shape of housing developments and would lead to the conception of a new typology of social housing; one that would be turned into the archetypical 'social interest' housing unit or as commonly known, the 'INFONAVIT house'. This section will only analyse the impact of the neoliberal reforms imposed in 1992 at a policy level; the urban and architectural consequences for the design and planning of housing projects will be discussed in Chapter 6.

5.3.2 SIGNIFICANT INFONAVIT LAW'S REFORMS

The 1992 reforms to the INFONAVIT Law and other policy documents were applied during the term of President Carlos Salinas de Gortari (1988-1994) and ended two decades of an institute founded on a Keynesian approach to the production of housing. After the reforms, the provision, production and financing of social housing changed to a neoliberal policy whose priority was not to benefit the most vulnerable parts of the populations, but to create an open market system that would mainly benefit the private sector, as will be argued in this section.

In Table 3, it is possible to observe the number of articles reformed WITHIN INFONAVIT's law during 1992, the year in which the institute suffered its largest policy transformation in relation to first, the way the National Housing Fund accounts were managed and credits granted, and second the land distribution and commercialisation system.

Table 3. Years of reforms applied to INFONAVIT Law since its creation and the number of the articles that were affected.

1974	1981	1982	1983	1985	1986	1989	1992	1994	1997	2001	2005	2012	
									5				INSTITUTE'S ORGANISATION, STRUCTURE AND ADMINISTRATION
											6		
							10				10		
							15						
							16	16	16		16		
									17		17		
											18		
								ADDED >			18 BIS		
											18 BIS 1		
											19		
								ADDED >			19 BIS		
											19 BIS 1		
											20		
											21		
23			23				23	23			23		
									25		25		
								ADDED >			25 BIS		
											25 BIS 1		
											28		
		29					29	29	29				EMPLOYER'S OBLIGATIONS AND EMPLOYEES' RIGHTS
			30				30	30	30				
									31				
									32				
									33				
		34							34				
					35		35	35	35				
	36	36					36						
							37		37				
							38	38	38				
							39		39		39		
	40	40	40				40	40	40				
			41				41		41				
42							42		42				USE OF RESOURCES AND ALLOCATION OF CREDITS
							43	43	43			43	
					ADDED >		43 BIS		43 BIS				
			44				44		44			44	
							45		45				
							47		47	47		47	
							48						
			49						49				
			51	51					51				
							51 BIS		51 BIS				
							51 BIS 1						
							51 BIS 2						
					ADDED >		51 BIS 3						
							51 BIS 4						
							51 BIS 5						
							51 BIS 6						
			55					55					SANCTIONS AND CONTROVERSIES
									56				
58											58		
			59				59		59				ACCOUNTS REFUND AND RETIREMENT
							60	< ABOLISHED					
	61						61						
			64						64				MAINTENANCE OF DEVELOPMENTS
							65	< ABOLISHED					MANAGEMENT OF THE INSTITUTE'S BUDGET AND RESOURCES
											66		
			67				67						
	68												
									69				
									70				

Source: Developed by the author (2015).

Specifically, the reforms in relation to the workers' account meant to eliminate the voluntary continuation concept, to offer the possibility of a refund of the savings account when a worker turns 65 years old, the extension of credit payment terms to 30 years and the chance to obtain a 12 months payment respite in case of becoming unemployed (Portal INFONAVIT, 2013). In regards to the management of land, it meant a deregulation of *ejidal* territories favouring a more ordered urban growth around cities and economic stability through a free market. In the same table it is also possible to observe how in 1997 INFONAVIT suffered a refinement of the modifications made in the early 1990s. Finally, in the year 2005 modifications related to the institute's administration would be made that would change the operation system of INFONAVIT, and that will be discussed in the final fourth section of this chapter.

Workers' accounts, credits and minimum wage

The credit granting system changed after 1992 to a point-based system. Since this year, credits were stratified in accordance to workers' income, age, and time working in a business; labourers would need a minimum of 116 points for requesting a credit, which is calculated considering the employee's age and salary (Table 4), the employers' contributions measured in minimum wages (Table 5), and the number of bimonthly periods the employer had continuously contribute (Table 6).

Table 4. Points earned according to the worker's salary measured in minimum wages and the worker's age.

AGE	SALARY					
	1.0 - 2.6	2.7 - 3.6	3.7 - 5.2	5.3 - 6.7	6.8 - 11.0	11.1 +
Up to 17	30	31	32	34	39	40
18 - 20	56	57	58	60	65	66
21 - 34	60	61	62	64	69	70
35 - 42	63	64	65	67	72	73
43 - 49	66	67	68	70	75	76
50 +	51	52	53	55	60	61

Source: (Puntos INFONAVIT, 2014, September 14)

In addition to the latter change, in 1997 the types of credits available through INFONAVIT were presented in the law as more diverse and flexible tools for beneficiaries of housing programs. The changes made showed a reclassification and relabeling of the way the resources of the Housing Fund would be used, which would be to acquire new housing, for constructing, repair or modify existing accommodations, and for the payment of other liabilities (INFONAVIT Law, 1972, Art. 3). This is analysed in this chapter in section 5.2.

Table 5. Points earned according to the amount contributed bimonthly by the employer, measured in minimum wages.

AMOUNT CONTRIBUTED	POINTS
0 - 1.70	24
1.71 - 2.20	27
2.21 - 2.60	31
2.61 - 3.10	33
3.11 - 3.70	35
3.71 - 4.50	37
4.51 +	39

Source: (Puntos INFONAVIT, 2014, September 14)

Table 6. Points earned according to the number of continuous bimonthly periods the employer has contributed.

BIMONTHLY PERIODS	POINTS
Up to 5	0
6 - 12	16
13 - 15	23
16 +	38

Source: (Puntos INFONAVIT, 2014, September 14)

The use of the institute's resources was outlined and detailed in the article 42 of the 1992 INFONAVIT Law as five 'lines of credits'. 'Line one' would refer to the financing of housing developments just the way it was originally posed in the 1972 INFONAVIT Law, which would be for acquiring housing in developments built with financing conceded through requests for tender for housing developments approved by the Institute. The following four 'lines' would be for the acquisition in ownership of accommodations, for the construction of housing, for the repair, enlargement or improvement of accommodations, and to the payment of liabilities acquired from any of the other lines " (INFONAVIT Law, 1992, Art. 42).

Although present in the INFONAVIT Law since 1997, the first type of line of credit is no longer applicable, since the institute does not 'built' housing developments since 1992.

"Line one doesn't exist anymore; that was new housing for sale through an INFONAVIT credit, when INFONAVIT built the housing developments and it's not the case anymore. Line two (is buying a new house built by a private construction company). [...] Line three is when you have your own piece of land and want to build your own house. Line four means that you already have your house and want to modify it, and line five is when let's say, you buy a piece of land with a bank credit and you say to INFONAVIT, you know what? I don't want to pay to the bank anymore! If the debt you have with the bank is more than your INFONAVIT credit, then you just have to pay the difference." (Official, Int@INFONAVIT, 12.12.2012)

Despite the relabeling of the first types of credits, INFONAVIT has put particular emphasis on to the diverse uses of the credits since then. Since 1992, the different lines have become different alternatives that workers can take, not limiting them to a few housing typologies or locations like in the past, providing them with a freedom of choice that will be discussed along with the new housing typology which emerged after land reforms at the end of the present sub-section.

Private developers and land reforms

Constitutional and agrarian reforms in 1992 modified the principles of administration and management of *ejidal* land for urbanisation purposes held for the majority of the 20th century. Article 27 of the Constitution has referred since 1917 to the preservation of the natural resources, land tenancy and the distribution of it. Before the neoliberal reforms, the *ejido* was considered "inalienable, imprescriptible and unseizable" (Olivera Lozano, 2005), therefore it was illegal to urbanise *ejidal* land despite the imminent urbanisation process Mexico had been going through since the first half of the 20th century. However, the illegal nature of the urbanisation of *ejidal* land at a constitutional level did not prevent the incorporation of it to urban areas, creating an informal and irregular urban sprawl that municipal authorities could not control due to, even for them, the untouchable characteristic of the concept of *ejido* despite also being forbidden since the first Agrarian Law.

The first Agrarian Law was created in 1915 for dealing with the extremely unequal distribution of land carried out since the 19th century, which inspired the Mexican Agrarian Reform as part of the political adjustments Mexico was going through during the 1910 Mexican Revolution and as a response to the rural population's interests and needs; the other sector of the population that along with labourers was strongly supporting the revolutionary movement.

Article 27 of the 1917 Constitution reflected the ideals of the 1915 Agrarian Law reaffirming that "(t)he ownership of land and water encompassed within the limits of the territory of the nation, corresponds to the Nation" (CPEUM, 1917). It followed stating that "the Nation has the right to transmit the domain of (land and water) to individuals, constituting private property" and that land and water "will not be able to be expropriated but for public utility causes and through indemnification" (CPEUM, 1917, Art. 27).

The social revolutionary ideology of the article 27 and the Agrarian Law aimed to benefit the general population over the particular interest of a few individuals or groups, breaking with the "individualist conception" of the 1857 Mexican Constitution in relation to

land ownership, where "property was an absolute right in which individuals had no limit in relation to real estate issues" (Hernández Gaona, 1991, p. 85). The public benefit over the private interest ideal would be challenged by the reforms applied to the Constitution and the new 1992 Agrarian Law, showing a neoliberal approach that reminds the post-colonial constitutional approach to land ownership held in Mexico in the 19th century.

Before the 1992 reforms, the land used for developments promoted by INFONAVIT and other housing promoters (i.e. FOVISSSTE, FOVIMI) was acquired by them in order to build a territorial reserve for 'comfortable' and 'hygienic' housing that would be offered to workers and acquired through the institute's credits, accomplishing what was stated in the INFONAVIT Law since 1972. Therefore, since 1992 the Mexican Constitution and the new Agrarian Law overruled the taboo of the *ejido* as an untouchable concept, allowing the change of its status from rural use to land for urban development purposes.

"Article 87. When the plots of an ejido *are located within the growing area of a settlement, the* ejidal *population centres will be able to benefit from the urbanisation of their land. In any case, the incorporation of* ejidal *land to urban development shall be liable to the in-force laws, regulations and plans in relation to human settlements."*
(Agrarian Law, 1992)

This shift would allow in principle, a modernisation and more efficient development of the rural territories through the legal commercialisation of *ejidal* land. The possibility of commercialising the *ejidos* would also allow a formal incorporation to the urbanisation process and attempt to control the illegal acquisition of *ejidos* for the creation of the *colonias populares* that in many cases, was provoking an irregular growth of cities (Olivera Lozano, 2005), aiming to achieve an ordered urban growth through the upswing of the free market under the recently adopted neoliberal policy. Since 1992, although Puebla Cadena (2002) argues this was an issue since 1989, for INFONAVIT and the rest of the housing institutions which meant not to acquire land anymore and to sell their reserves to private housing promoters, following the free market approach to the administration and commercialisation of land. In addition to selling their territorial reserves to private actors, private developers would also have access to a free land market and the chance to speculate in order to obtain as much profit as possible from cheap land on the outskirts of the cities.

"(The reason for buying land on the outskirts of the city) is because it's inexpensive, not because it's available. For us to decide to build a development, the land value shouldn't be above seven per cent of the total revenue. This means that in order to offer a cheap house on the market, you cannot buy land costing over 100(±£4.50) or 150 pesos (±£6.80) per square metre. So tell me, where within the limits of any city in Mexico can you find plots costing 150 pesos per square metre?" (Architectural Design Manager, Int@ARA, 11.09.2012)

Financing provided by INFONAVIT for the construction of housing developments would be awarded to "those inscribed in the register of constructors elaborated by the Institute through public bidding after the call for proposals" (INFONAVIT Law, 1992, Art. 51 bis). The call for tenders could refer to more than one housing project and will be displayed in major newspapers throughout the country (INFONAVIT Law, 1992, Art. 51 bis 1) and those who decided to participate must guarantee to INFONAVIT that the resources will be used and invested in accordance to the institute's rules and interest rates (INFONAVIT Law, 1992, Art. 51 bis 2 & 51 bis 3).

Freedom of choice and individual responsibility

Choice has been one of the claimed benefits of the reforms in housing policy; individuals would be free to choose among different products, namely a house, a housing development or even a type of credit and debt, as discussed above. The neoliberal thought adopted in Mexican housing policies is based in the political ideas of human dignity and individual freedom as the core values of civilization that would challenge any type of state intervention that threatens individuals' freedom of choice; individual freedoms are guaranteed by freedom of the market, which in essence reflects the interests of the private sector and capital (Harvey, 2005).

"INFONAVIT left the construction game and left aside its normative role and allowed different actors to enter the scene. What is good about this is that nowadays you can compare what one actor produces with another product and you can choose."
(Architectural Design Manager, Int@ARA, 11.09.2012)

The reforms in 1992 brought a series of changes that attempted to offer a more flexible system in relation to credits and wider availability of housing typologies. The new housing policy would allow "market supremacy and competitive freedom (to override) Keynesian state planning" (Villar Calvo & Méndez Ramírez, 2014) that in theory, constrained housing programs beneficiaries' choices through a few housing typologies throughout the country. Workers would be turned into consumers and would able to choose from a different range of products, no longer depending on one housing developer or housing project. Different developments in different parts of the city would be built by different construction companies, offering a wide gamut of possibilities. The freedom of choice would mean being able to select from different credits for buying a new dwelling designed or built by a private developer or by any other constructor. Houses could also be acquired from their previous owners and as well, there was the possibility of improving existing accommodations or building a new house in a plot of the workers' selection.

> *"Wherever you want. Nowadays you can even buy a house from its previous owner if I want. Nobody is imposing on you to buy a particular house. You have the freedom of choosing a house wherever you like." (Supervisor 1, Construction Site Supervision Team, Int@HOMEX, 28.11.2012)*

Sectors within an economy, such as housing, are thought to be freed from state intervention and institutional constraints, leaving individuals the responsibility of choosing what is best for them in accordance to their needs. Therefore, along with the freedom of choice would come a responsibility that the state and in this case also INFONAVIT were not willing to take, leaving workers in charge of deciding what is best for them and their families.

> *"Supervisor 1: If somebody realises that the house was not what they were expecting is because they didn't see the house beforehand, maybe. If I'm going to buy something, I see myself as a consumer and go and look at the house, the location and everything. From that it'll depend if I decide to buy the house or not.*
>
> *Supervisor 2: I see people buying a house in a rush and well, that's always going to end bad." (Construction Site Supervision Team, Int@HOMEX, 28.11.2012)*

The institute's detachment from supervising and controlling the final physical quality of the house is one of the additions made to the institute's law in 1992. After the reforms, INFONAVIT would not be responsible for the quality of the housing developments financed and would delegate the control of it in the private companies constructing the projects and the workers' judgement.

"Article 51 Bis 6.- The contractors financed by the Institute will respond to the acquirers in relation to flaws in the constructions, hidden defects and any other responsibility, within the terms of the applicable dispositions." (INFONAVIT Law, 1992)

Social housing projects would be authorised and supervised the same way as any other type of construction in the country. The constructor, in this case private developers, would have to request construction licenses from the municipal authorities and it was the planning body of each city council that was the one responsible for ensuring that constructors were building what was submitted and that they were following the corresponding design and construction regulations.

However, the delegation of the quality of housing's responsibility and even, the acquisition of land to the private sector had a direct consequence on the conception of social housing. In addition to the latter, the establishment of housing prices in line with market tendencies and developers' profit margins led to a reductionist approach to housing (Esquivel et al., 2005); which had an impact not only on the price of the dwellings, but on the physical quality of the final product.

The decade after the neoliberal reforms to housing policy accumulated complaints from workers and critiques from academics. During this decade, the development of large housing projects became the trend, on occasions allocating up to 20,000 households. Due to their size and expected population, many of the projects are allocated on the outskirts of the cities and could be in themselves the equivalent to towns (Maya et al., 2008). However, the developments or *fraccionamientos* are sometimes offered without proper urban infrastructure and public services and disconnected from job sources, resulting in a marginalisation of the inhabitants.

Despite the location and size of the projects, the concept of thousands of one- or two-storey, single family dwellings concentrated on a piece of land became the most profitable one,

since it allowed the achievement of the dream of most Mexican families of owning a patrimony (Esquivel et al., 2005), which usually meant to own a house and a piece of land. It could be said that it is during this period when the concept of the 'INFONAVIT house' was coined as the synonym of 'social interest' housing or 'social housing', on one hand because of INFONAVIT being the most important (and famous) housing credit provider and on the other hand, because of the impossible-to-ignore visual impact on the urban peripheries of cities throughout Mexico that was turning the urban image of the formal city into a monotonous and repetitive landscape, the consequences of which will be analysed and discussed in Chapter 6.

The quality, type, size and location of housing, and the price of it along with the debts acquired by workers, overall challenge the concepts of choice and individual responsibility as blessings and advantages from a neoliberal practice in the social housing production as opposed to the constraints of an interventionist state.

Within the Keynesian approach to economics, a "social and moral economy (sometimes supported by a strong sense of national identity) was fostered through the activities of an interventionist state" and "working-class institutions such as labour unions and political parties of the left had a real influence within the state apparatus" (Harvey, 2005, pp. 11, 12). The latter characteristics do not completely describe the 1970s Mexican political and economic panorama; the Mexican government was going through a legitimacy crisis after episodes of oppressive reactions towards social movements, and although a sense of national identity may have been part of the political discourse, it probably was not shared in the same way by the general population.

Nonetheless, as it has been discussed in this chapter, it was clear that the role of unions (but not left-wing parties, since this was practically non-existent back then) played an important role on the production and distribution of housing. Despite the latter, INFONAVIT's Keynesian approach to housing was aimed at benefiting "fundamentally low- and medium-income workers and (to) strengthened the corporative mechanisms of social control on one hand to a subsidised housing policy" (Villar Calvo & Méndez Ramírez, 2014, p. 2), revealing some of the 'social' and 'moral' spirit of the Keynesian approach.

Workers' choice, in the context of the 1970s INFONAVIT, was 'limited' to housing developments built by INFONAVIT or a few private developers assigned by the institute, offering a limited variety of housing typologies indiscriminately repeated throughout the country, possible to acquire through using the resources of a solidarity fund. Notwithstanding

the 'poor' variety in design, location and the credit 'limitations', the concept of single-family dwellings was larger in size and considered to be of better material quality than the ones produced since the 1990s, as will be discussed in Chapter 6.

Within the neoliberal scheme, INFONAVIT was turned from a housing promoter to a housing facilitator (García Peralta, 2010; Villar Calvo & Méndez Ramírez, 2014) and workers had different construction companies producing different typologies of housing that varied in cost and location in accordance to the market, for satisfying workers' needs, tastes and aspirations. The credits would fit the workers' economic limitations and could be complemented with other financial tools.

With this approach to housing and the housing market, INFONAVIT would be again part of a paradoxical transformation like in the 1970s and pointed out by Alderete (1983) and discussed in Section 5.2. The substitution of a "just" and "efficient" (Alderete, 1983, p. 318) computerised system for allocating housing or 'direct promotion' scheme, for an 'external promotion' mechanism for the grant of credits and construction of housing developments in which unions were the main actors. However, this time instead of delegating the distribution of housing through unions for a less corporatist system, the production of housing is being delegated to the private sector for a less interventionist state role looking for a reactivation of the Mexican economy through a more efficient real estate market.

This would result in a few housing typologies, not varying much from one developer to another in regards to the internal distribution and not considering the geographical and climatic characteristics of the region where the developments were placed, a scene not very different from the one criticised during the pre-neoliberal era. Quality was being sacrificed for quantity in the search for the satisfaction of the quantitative demand for housing. Despite the diversification of the types of credits, the housing policy's priority was no longer to benefit the low-income worker (Villar Calvo & Méndez Ramírez, 2014).; this sector of the working population, the one earning less than 5 minimum wages, was type casted in the lowest classification of credit availability hardly qualifying for a subsidy and only aspiring to the smallest and cheapest type of social housing unit, which represented resigning themselves to choose from housing projects in disadvantaged locations in relation to the city centres.

"(The variety of credits) is the same thing than in the past! If we have the urge of getting a house, in order to get one we're willing to plunge ourselves in a lifelong debt and

because we're needy, the government takes advantage of us, the workers." (Cecilia &
Celso, Int@PrD0, 08.02.2013)

The advantages of choice for low-income workers under the neoliberal housing policy are hard to perceive, since their housing and credit 'options' are limited to their income; if wanting to fulfil the aspiration of obtaining a house on their own and a piece of land, their only choice became a one-storey, single-family dwelling marginalised on the outskirts of the city.

"Bárbara: (My housing choice) depends on the location. I imagine this… if the
opportunity of buying a house in the city centre for the same cost of the one I have comes
out, well… obviously! I move there immediately! But of course, a house in the city centre
is absolutely impossible for us to acquire." (Bárbara & Belinda, Int@PrS0, 10.12.2012)

Mexico is considered one of the first states in Latin America that was incorporated into the neoliberal scheme worldwide through conditional recommendations from institutions like the World Bank and the IMF, demonstrating that under a neoliberal practice, the borrower (in this case Mexico) and not the lender, is the one "forced by state and international powers to take on board the cost of debt repayment no matter what the consequences for the livelihood and well-being of the local population" (Harvey, 2005, p. 29). This consequence appears to be replicated at an individual level; low-income workers have to opt for credits whose balance would only start going down after the first five years. Outside the social housing programs, low-income workers are pushed to look for progressive housing or self-help and auto-construction programs, as it will be discussed in the following section.

The results of neoliberal policies implemented after 1992 in Mexico, confirmed the critiques of neoliberal thinking, challenging the idea that a free market would ensure stability, improve wealth and general well-being (Harvey, 2005). Despite the attempt of interpreting concepts and practices coined in developed countries, such as habitability, housing standards or tenancy principles, in a developing country such as Mexico, the attempt has been "within the constraints of macro-economic development and underdeveloped institutions in housing and urbanisation" (Pugh, 2001, p. 400).

Unfortunately, for social housing credit beneficiaries, the price of a 'cheap house' does not reflect proportionately the inexpensiveness of the land. It does not reflect either the low

construction costs achieved thanks to a mass and serial production and the use of less labour force than traditional construction methods. Private developers accomplish low production costs through standardised and automatised methods, and through dealing with construction material providers without intermediaries. Despite the cheap production costs, housing units are highly priced according to the housing and land market, also including the financing expenses acquired by the developers for the construction of the projects.

5.3.3 THE 2006 HOUSING LAW

The Federal Housing Law created in 1984 did not suffer any changes during the twenty four years of its existence despite the modifications made to other policy documents such as the Federal Labour Law or the INFONAVIT Law. In 2006, the 1984 Federal Housing Law was abolished by President Vicente Fox Quezada (2000-2006) and a new law took its place: the Housing Law. The new law kept the main structure of its predecessor, elaborating more in depth in relation to the organisations and institutions involved in the regulation of housing, and the operation of housing programs. One contribution of this law to the definition of housing is the description of concepts present in the Constitution since 1983.

"Article 2. It will be considered as dignified and decorous housing that which complies with the applicable legal provisions on human settlements and construction, housing, health, expect basic services and provide its occupants certainty as to their ownership or lawful possession, and considers criteria for disaster prevention and physical protection of its occupants to potentially aggressive elements." (Housing Law, 2006)

For the first time the concepts 'dignified' and 'decorous' are posed in relation to other policy and legal documents and with a focus on the importance of tenure and physical quality. There is a new section addressing the quality and sustainability of housing, not necessarily making specific references to the physical characteristics that housing must comply with, but mostly references to the collaboration between public and private sector, the role of the different governmental organisations in the production of housing and the intervention of the newly created *Comisión Nacional de Vivienda* (Conavi, National Housing Commission) for guaranteeing the correct application of planning, construction and design regulations (Housing Law, 2006, Title Sixth).

Interestingly, the physical and spatial characteristics of housing are linked to the quality of life of people, which would be determined by the right balance between the characteristics of the house, the number of inhabitants using it, the access to public services and the use of environmental friendly technologies.

> *"Article 71. In order to provide quality of life for the occupants of the dwellings, the Commission shall promote, in coordination with the competent authorities both federal and local, that in the development of housing stock in its various forms and the use of resources and services partners, are deemed to have the habitable dwellings and adequate hygiene spaces based on the number of users, provide for potable water, wastewater evacuation and electricity to help reduce disease vectors, and ensuring structural safety and adaptation to climate with sustainability, energy efficiency and disaster prevention, preferably using standardized goods and services.*
>
> *It will also promote the use of renewable energies through new applicable to housing, environmental technologies according to bioclimatic regions, using standardized equipment and systems in all its forms. [...]" (Housing Law, 2006)*

According to the 2006 housing law, the design of housing in general is supposed to consider "the interior and exterior spaces; functional efficiency, construction and operating systems; the characterization and modulation of its elements and components, respecting the different areas of the country, natural resources, energy saving and housing arrangements" (Art. 78). This specification reaffirms the principles of housing design stated in the 1984 Federal Housing Law, including those referring to the consideration of the different characteristics of each region of the country. Nevertheless, once again when observing different social housing developments throughout the country built since the creation of INFONAVIT and now, since the creation of the first housing law, it would appear that this specification has been completely ignored.

Another contribution of the 2006 Housing Law is the social inclusion and equity character of the document, so "everyone, regardless of their ethnic or national origin, gender, age, disability, social or economic status, health status, religion, opinions, preferences or marital status can exercise their constitutional right to housing" (Art. 3). This reform echoes those made to the first article of the Constitution five years earlier, where for the first time discrimination motivated by "ethnic or national origin, gender, age, disabilities, social

condition, health condition, religion, opinions, preferences, civil status or any other that attempts against the human dignity and has as objective to undermine the rights and freedoms of people" is clearly forbidden (CPEUM, 2001).

One particular difference between the 1984 Federal Housing Law and the new 2006 Housing Law is the elimination of the concept and definition of 'social housing'. Housing is now classified in "housing production types and modalities", which include "among others, the one corporately promoted and the auto produced or self-constructed, in ownership, for rent or other legal forms of tenure" (Housing Law, 2006, Art. 5). As well, it is sorted in terms of 'housing necessities', referring to the acquisition of land, plots with minimum services, construction materials, improvement of existing housing, substitution of housing and provision of new housing (2006, Art. 5). Under these criteria, housing produced for workers or low-income population could fit into any of the latter categorisations or needs.

Despite the latter, the 2006 housing law holds the interest of promoting access opportunities to housing preferably to those in poverty, marginalisation or vulnerability conditions (Housing Law, 2006). In addition, it reasserts the need for a coordination between the private and public sector for satisfying the different types and modalities of housing, the consideration of the characteristics of housing within a respectful use and adaptation of the natural environment and the regional differences throughout the country (Art. 6).

As mentioned, the concept of 'social housing' disappears from the 2006 housing law. However, another term with a very specific 'social' character appears, not necessarily as a substitute for the first, but for promoting a form of production of housing based on self-help and auto construction. The 'social production of housing' is that "which is under the control of self-producers or self-builders and is mainly geared to meet the housing needs of low-income population, including that which is undertaken by self-managed and supportive procedures, prioritising the use value of housing over commercial, mixing resources, construction procedures and technologies based on their own needs and their management capacity and decision making" (Art. 4, Sec. VIII). The 'social producers' of housing are defined as "the natural or legal person that individually or collectively produce non-profit housing" (Art. 4, Sec. IX).

The governmental 'social' approach to housing for low-income population and those in the most vulnerable conditions shifts following a tendency of self-help and auto production of housing. After the 1992 housing reforms, the state's approach detached from the production

and provision of housing, and delegated these processes to the private sector. In this new approach, it appears to detach from it altogether, delegating the responsibility to the population itself.

CONCLUSION

This chapter analysed the concept of 'social' in social housing that emerged from the aim to provide labourers with the right to housing after the 1910 Mexican Revolution, and its transformation through the following decades until the present.

The inclusion of the obligation of employers to provide housing to their workers in the Mexican Constitution at the beginning of the 20th century was a breakthrough in the history of housing as a constitutional right. The consideration of workers as the specific part of the population benefited by this right was a response to the housing demand of groups that strongly supported the 1910 revolutionary movement in Mexico. The right to housing of workers promised to deliver the principles in the Constitution that would guarantee the improvement of workers' quality of life through the provision of 'comfortable' and 'hygienic' accommodations; in a way, through the improvement of their built environment.

However, this consideration failed in terms of addressing the demand for housing and through the first versions of the Federal Labour Law, which broadly elaborated on what was stated in the Constitution in relation to housing for workers. Instead of establishing the foundations of solid housing programs for the working population, revolutionary victors only established a policy of social provision that aimed to appease the groups that legitimised them, avoiding further legislation about housing programs and the regulation of housing. Workers' organisations that were consolidating their place in the political scenario after being legitimised at a constitutional level in 1917, and a state struggling to achieve social, economic and political stability, developed a symbiotic relationship that approached housing in a clientelist manner.

The creation of INFONAVIT in 1972 responded to the demand for housing of an increasing population in urban areas and the pressure of unions that demanded workers' needs to be satisfied. INFONAVIT originally aimed to establish social housing programs that benefited the most vulnerable parts of the working population and quickly settled as the most important workers' housing promoter. The relationship between workers' organisations and the state for creating a housing fund did not only respond to the interest on benefiting workers from the government, but also on legitimising itself through the support of strategic groups.

Decades of a symbiotic relationship between labour organisations and public institutions which kept each other in power before the creation of INFONAVIT, gradually changed the direction of the institute from an organisation with a partial social character to an important machinery of the ruling party and unions for political support and legitimisation, and for benefiting themselves from the housing production process financed by INFONAVIT.

Similar to the post-revolutionary 'social' achievements, the 'social' commitment of INFONAVIT faded as well with the implementation of neoliberal changes in 1992, which reforms affected the Federal Labour Law and INFONAVIT's Law. The solidary fund that aimed to benefit low-income workers disappeared; housing credits were stratified in accordance to workers' income and managed by banking institutions, and the physical production of housing was delegated to private developers.

Recommendations from the World Bank in 1989 to developing countries benefitted from conditional support from the International Monetary Fund, led to reforms in 1992 that transformed the conception of social housing for workers and the administration of the Workers' National Housing Fund in Mexico. These reforms detached the role of the public sector from the production of social housing and delegated this responsibility to the private sector. The management of workers' accounts was transferred from INFONAVIT to banking institutions, which raised the cost of housing in the long term in relation to the period previous to the reforms and the classification of housing after the 1992 reforms left behind the idea of housing for workers, turning housing overall into a commodity. The private sector substituted the role of workers' organisations in the latter symbiotic relationship, and under the neoliberal scheme, social housing took a corporatist approach.

In the beginning of the 2000s, INFONAVIT was forced to readjust its role in the supervision of the housing production after critiques from housing beneficiaries and academics. The national housing policy on the other hand, also adjusted guidelines and regulations in relation to the production of housing. The 'social' character of housing not only for workers, for the general population has shifted in the most recent Housing Law created in 2006. Housing policy is approaching the demand for housing through a self-help and auto-construction approach, apparently detaching governmental or decentralised institutions like INFONAVIT again from the production of housing, only now, delegating that responsibility to the population itself.

The following chapter will address the second research question posed for this study 'How is 'social' being translated into the built environment in social housing?' It will analyse the translation of the concept of 'housing for workers' and the concept of 'social' into housing developments and housing typologies, from the early antecedents of housing for labourers before and after the 1910 Mexican Revolution, to the creation of INFONAVIT and the 1992 neoliberal reforms.

CHAPTER 6

TRANSLATION OF 'SOCIAL' INTO THE BUILT ENVIRONMENT

INTRODUCTION

The present chapter will answer the second research question of this research: 'How is 'social' being translated into the built environment in social housing?' Following the chronological analysis of Chapter 5, this chapter will focus on the physical translation of 'housing for workers' and of 'social housing', analysing the approaches taken for the planning and design of it. It will argue that the translation of 'social' in social housing into the built environment, was not always a literal interpretation of housing policies and design regulations, but also the materialisation of policy makers', planners' and designers' professional and personal assumptions behind what 'social', 'housing for workers' and 'social housing' is supposed to mean.

Section 6.1 will review the early antecedents of housing for labourers that emerged from the 1910 Mexican Revolution, analysing the motivations behind the production of accommodations for workers and to what extent these motivations followed or not the first social provision guidelines in relation to housing stated in the 1917 Mexican Constitution and 1930 Labour Law. It will argue that since the main intention of the post-revolutionary housing policies was not to satisfy the actual demand for housing, the obligation of employers to provide 'comfortable' and 'hygienic' accommodation for workers was never fulfilled.

Section 6.2 will explore housing built after the creation of INFONAVIT in 1972 and will analyse the materialisation of INFONAVIT's law and the newly reformed Labour Law into houses and housing developments within the frame of a new institutional housing policy. It will analyse the values and assumptions of individual actors, organisations and institutions behind the first 'INFONAVIT developments' during the two decades that followed the foundation of the institute, arguing that the role of the those actors, organisations and institutions determined the 'social' character to a larger extent than housing policies.

Section 6.3 will explore the transformation of housing for workers built under a Keynesian approach of 'social housing' to a neoliberal real estate mass-production. It will be argued that the detachment of INFONAVIT from the production and supervision of the built environment, and the reliance upon the private sector as the ultimate social housing producer, had direct consequences for the physical quality and design characteristics of housing.

Section 6.4 will review the evolution of social housing in the last fifteen years, including the 2005 INFONAVIT Law reform and the physical production of social housing during this period. It will analyse INFONAVIT's response to critiques from residents and academics of the physical quality of the housing developments built by the private sector since the 2000s and the approach taken by the institute for responding to them. It will be argued that INFONAVIT attempted to recover its 'social' character and 'social' commitment with the workers' needs and interests, but due to the lack of control over what is being produced in practice, little can be improved in relation to the physical and material quality of housing developments.

6.1 EARLY ANTECEDENTS OF LABOURERS' HOUSING URBAN AND ARCHITECTURAL TYPOLOGY

The obligation of employers to provide housing for their workers as stated in the article 123 of the 1917 Mexican Constitution and 136 of the 1970 Labour Law, only existed in theory and was not applied in practice until the creation of INFONAVIT in 1972, as argued in chapter 5. Before INFONAVIT's foundation, there were three predominant housing alternatives from which the general population could formally acquire a house; housing for rent mostly located in urban central areas, isolated cases of state housing – mostly in Mexico City - and *colonias populares* (Perló Cohen, 1979). When not having access to any of the latter alternatives, the general population had the informal sector as their only option.

6.1.1 COMPANY TOWNS

Before the creation of INFONAVIT in 1972, housing for workers was not implemented in practice as a "contractual" concept (Ramírez, 1984, p. 109) or as the outcome of a relationship between employer and employees, despite being stated in the 1931 and 1970 Labour Law, and the 1917 Mexican Constitution. During the more than six decades that followed the Mexican Revolution, housing for workers was built under different concepts, one of them a legacy of the early industrialisation process Mexico went through in the 19th century after becoming independent from Spain.

By the time the 1917 Constitution was issued, industries or companies usually managed by foreign investors were already providing housing to their workers, accommodating them close to the factories or mines, and also facilitating the establishment of markets, schools, churches and recreation centres. Nevertheless, the type of housing offered by some industries was often offered for rent to workers in the second half of the 19th century, and was basic in design having one or two poorly built rooms (Andrade, 1991). These industries followed the

model of the 'company town', a concept coined in the late 19th century in the United States used for referring to settlements located around working facilities and where little attention was paid to the physical quality of the built environment in which labourers lived. Although coined in the second half of the 19th century, company towns existed since the 1830s (Garner, 1992) also in Mexico, as part of the mechanised textile industry (Gómez-Galvarriato, 2011).

During the last decade of the 20th century there were discussions in relation to the quality of labourers' housing in Europe, particularly in France, and on how to improve it (Garner, 1992). It is possible that the work of Émile Cacheux, an architect, hygienist and housing reformer on providing adequate accommodation to labourers around factories made their way to some company towns in Mexico (Becerril & Silva, 2014); 'San Rafael' (Plate 7), a factory close to Mexico City and dedicated to the production of paper, provided housing to their workers was part of a network of factories owned by French investors.

By the end of the 19th century, housing was originally built using the company's money but after a while, a percentage of the labourers' salary was used for the construction of the workers' houses. The size and quality of housing, built using locally available construction materials, varied in accordance to the seniority and qualification of the worker reflecting social differences among the employees, and showed the European influence in its design (Becerril & Silva, 2014). The settlement reflected architectural characteristics influenced by European trends containing two different areas, one for the production activities of the factory and another for the use of the workforce, which included churches, schools and recreation centres. As factories grew in size, the quality of the houses improved, but also the need for capital for building new housing increased.

By 1928, eleven years after the issuing of the 1917 Mexican Constitution, this factory had hundreds of houses for its workers, recreation spaces for the most qualified workers in a three-storey building called "*Casino Cosmopolita*" or Cosmopolitan Casino (Plate 8) and halls for different educational and cultural events for general use, a market for supplying the whole community and a recreational centre with a games room and a library, as well as sport facilities with for playing football and tennis, and a pool (Becerril & Silva, 2014). This model allowed workers to have a more healthy and hygienic environment, although not comparable to solutions implemented in France, and employers to watch over the behaviour of their employees (Andrade, 1991; Becerril & Silva, 2014).

Plate 7. Workers' accommodations in San Rafael (ca. 1907)

Source: Becerril and Silva (2014).

Plate 8. 'Casino Cosmopolita' in San Rafael

Source: Becerril and Silva (2014)

Although the French influence in this example provoked a direct physical connection between the home and the workplace and helped to create communities with an identity of their own, it also echoed the industrial paternalism that in France was helping to maintain workforces in a constant state of docility and lack of civil liberty (Magraw, 2002). Such an attitude reflected the deterministic approach to the design of housing for workers; an approach that also had an impact on the urban location of the settlements, disconnected from other communities or cities and that probably attributed them with a negative connotation like those in the United States (Clark, 1916).

The company town model was never part of state housing programs and did not prevail outside the initiative of a few private company owners and shareholders who mostly used this model for enhancing productivity and maintaining control over their work force. Even though the company town model followed the logic of the article 123 of the 1917 Mexican Constitution, where company owners and not the state should provide housing to their employees, company towns were not recorded as an accomplishment of the constitutional law. As a matter of fact and as discussed in Chapter 5, some state that the obligation of owners of capital to provide housing to their workers was not exercised in practice (del Rivero & Romero, 2010; Ruiz Massieu, 1975).

In spite of all the latter, some company towns in Mexico consolidated as towns and later as municipalities, like in the case of 'San Rafael' where nowadays it is possible to observe the original urban grid and some of the original buildings. As well, and despite the deterministic approach behind the planning and designing of company towns in Mexico, the sense of community and identity created within the settlements along with the evolution of unions after the 1910 Mexican Revolution, physically and politically transformed some company towns into 'union towns' like Santa Rosa and Río Blanco, in the state of Veracruz (Gómez-Galvarriato, 2011), creating a social and physical space where workers' organisations' power grew along with the town and had more influence over the community's governance.

6.1.2 FIRST ATTEMPTS AT PROVIDING STATE HOUSING FOR WORKERS

As argued in Chapter 5, the inclusion of the right to housing of workers in the article 123 of the 1917 Constitution did not attempt to satisfy the quantitative and qualitative demand for housing, but to set the basis of a social provision system that delegated the provision of workers' accommodations to the owners of private capital. Nevertheless, the article 123 was not put into practice and in addition, the lack of state housing programs led workers' organisations to demand a solution to the housing deficit.

It was until the beginning of the 1920s and during President Alvaro Obregón's term (1920-1924) when the first governmental attempt of a state housing system emerged. Consisting of "the promotion of housing [that] was legally and directly sponsored by the state, aiming to benefit a social sector or class selected by the state itself" (Perló Cohen, 1979, p. 780), it was a response from Presidente Obregón to the demands of unions representing low- and middle-class workers who required help for building their houses. Obregón's response happened in a still unstable economy where the majority of the government's resources were being used for supporting the army and the reconstruction of general infrastructure around the country after the 1910 Mexican Revolution (Perló Cohen, 1979).

Obregón faced the dilemma of deciding when and which social groups or labour organisations to benefit with the provision of plots, credits or tax exemptions for the construction of housing. The decision of President Obregón materialised in the acquisition of *ejidal* land around Mexico City for the development of working-class *colonias*. Thirty-two *colonias* for rural and low-, middle- and high-income labourers were developed between 1920 and 1938 and their character was determined in accordance to the industrial activity of each part of the city like in the north of the city for the industrial and manufacturing sector (Reza & Covarrubias, 2013). It is in this part of the city where President Obregón ordered to develop 'Ex Hipódromo de Peralvillo', a neighbourhood offered to workers belonging to the Federal Confederation of Mexican Workers (Confederación Regional Obrera Mexicana, CROM), a workers organisation that strongly supported the ruling party at that time (Perló Cohen, 1979).

Thereupon, it can be argued that the first attempts for satisfying the demand for housing from the working population responded to a governmental interest in maintaining the support of unions more than in solving the housing crisis. Nonetheless, despite the economic and political instability after the revolutionary movement that urged to attend the demands of a few organisations, the ideals of the 1910 Revolution were strongly rooted in the strategies adopted by President Obregón. Some of those appointed by Obregón to be in charge of governmental programs and ministries belonged to a group of politicians, artists and intellectuals that were firmly committed to the principles of the 1910 movement (Vázquez, 1989b).

One of the members of this group was Narciso Bassols (1879-1959), with a background in law and a socialist stand, was appointed by President Obregón to be in charge of the Ministry of Education from 1931 to 1934 (Carranza, 2010). Bassols was clear about the potential of a reform in the education system for transforming and improving the quality of life of the

people, placing a "utopian value on architecture" (Carranza, 2010, p. 145) for reforming Mexican education. Schools in 1932 were scarce in Mexico City, and were usually in buildings adapted for educational purposes and not originally designed for teaching. For reforming the education system through architecture, Bassols appointed a Mexican architect called Juan O'Gorman, who became the architect chief for the building department in the Ministry of Education from 1932 to 1934 (Sánchez Ruiz, 2005).

O'Gorman's approach to architecture was based on radical functionalism, where architecture was seen as the means for satisfying the basics needs of the people, and where architecture's beauty relied on the extent to which it was efficient and accomplished with its function (Sánchez Ruiz, 2005). His edifications, including the schools he designed, were debated as lacking aesthetic attributes; his argument against this critique was that beauty was not the mean, but a mere consequence of efficient design. O'Gorman's 'style' was a reflection of his moral convictions and interest in contributing to the solution of the political and socioeconomic problems Mexico was going through after the Revolution (Sánchez Ruiz, 2005).

Plate 9. Bassols-O'Gorman school in colonia *'Industrial', 1932. Facades (left) and typical classroom (right).*
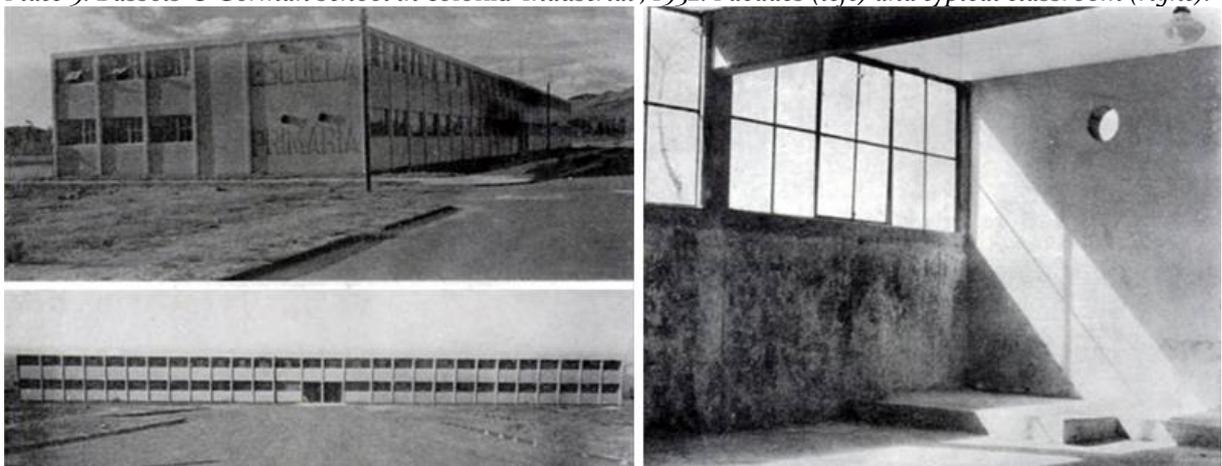
Source: Arias (2005).

O'Gorman's and Bassols' compatible ideals resulted in a public primary school model that condensed the revolutionary ideological state apparatus that aimed to cast "patriotic citizens who were prepared to work for national economic development" (Schell, 2003, p. 21). These schools were based on an economically feasible and functionally effective" architecture (Carranza, 2010, p. 147), constructed with reinforced concrete and a grid of structural elements (i.e. columns and beams) that made each school in each *colonia* easily adaptable. Following the principles of functionalism, ornamentation was discarded since it would add extra expenses to the construction costs and would not contribute to the ideological and social transformation of Mexican society (Carranza, 2010). O'Gorman would argue in favour of the latter asking if when

designing schools "are we going to think in spiritual needs? Are we going to think in the buildings' pretty features when what we urgently need is hygiene?" (Rodríguez Prampolini & O'Gorman, 1982, p. 320).

Plate 10. Bassols-O'Gorman school in colonia *'Portales', 1932*
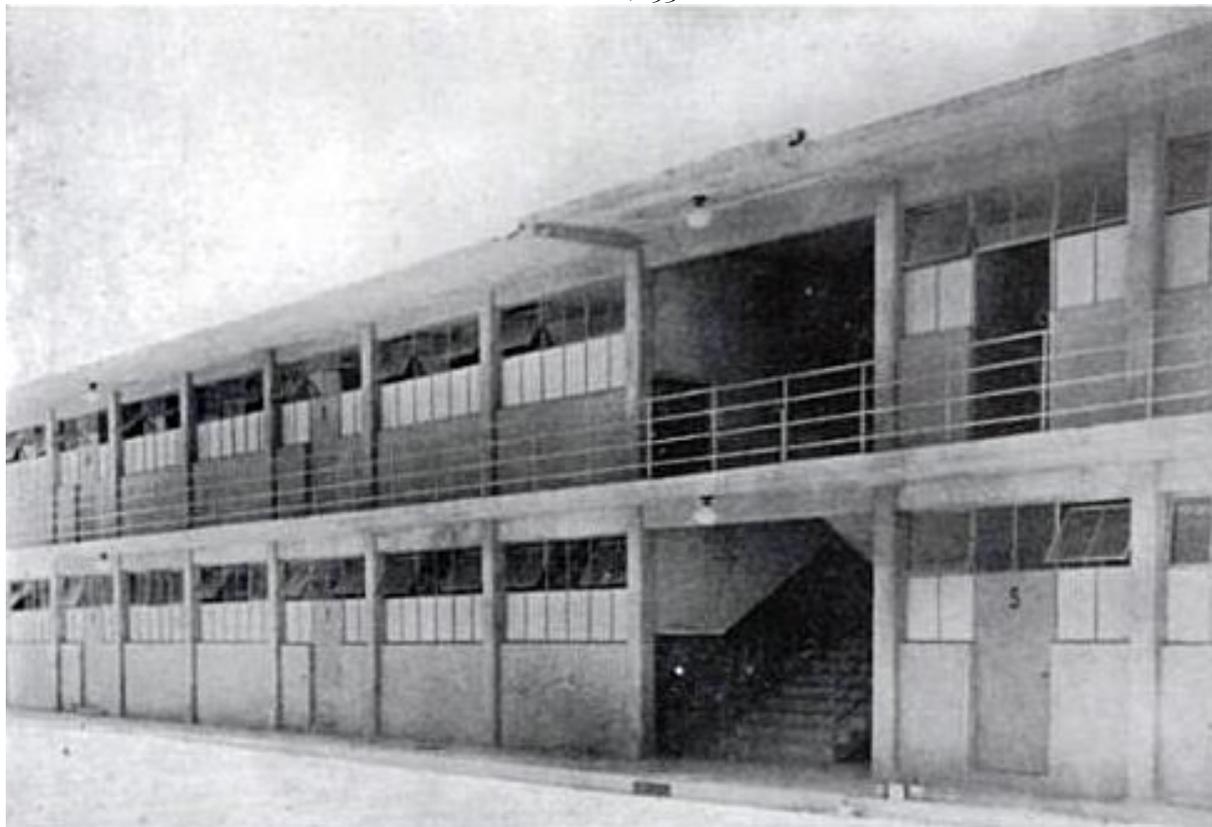
Source: Arias (2005).

The design of the 'Bassols-O'Gorman' schools included a generous number of classrooms in relation to the overall amount of students, kitchens, dining rooms, workshops, in some cases a pool, and open air spaces (Sánchez Ruiz, 2005). It became a model present in some of Obregón's *colonias populares,* such as working-class *colonias* 'Ex Hipódromo Peralvillo', 'Obrera', 'Moctezuma' or 'Álamos', and for middle-class family *colonias* like 'Industrial' (Plate 9) in the north of the city and 'Portales' (Plate 10) in the south also had Bassols-O'Gorman schools (Cruz, 1994).

In addition to education infrastructure, some of the *colonias* developed during President Obregón's term and his successor President Plutarco Elías Calles (1924-1928) displayed concern with the overall urban image of the neighbourhood, like in *colonia* 'Industrial' located in front of the first Ford Motor Company in Mexico, where the tracing of treed streets connected by roundabouts and public parks was considered, creating well-

structured paths through clear axes and landmarks, proving an awareness of urban design principles (Plate 11).

Plate 11. Urban layout of colonia *'Industrial' in 1930.*

Source: "Plano colonia Industrial 1930", Dge, June 7, 2013; Wikimedia Commons, Creative Commons Attribution Share Alike 3.0 Unported, modified by the author

However, there was not a standardised typology of housing and urban planning applied in these *colonias;* the creation of these working-class neighbourhoods responded to the need for housing from specific workers' organisations. For the latter, it is not clear to what extent these *colonias* were a product of state housing planning or just the legalisation of informal

occupation of land (Perló Cohen, 1979) Nevertheless, it could be argued there was a concern about the quality of life of the working class in relation to the built environment at least at a community scale. These *colonias* provided not only basic services, but an ordered and aesthetically pleasant environment designed based on an ideology that attempted to positively impact the everyday life of workers, having access to education, services and easy access to employment sources.

6.1.3 MODERNIST HOUSING

The demographic boom and increasing migration from rural to urban areas during the 1940s and 1950s as a consequence of the improvement of the Mexican economy required a quick and efficient response from the state to the demand for housing of the working population. As discussed in Chapter 5, during these decades the revolutionary ideals related to the provision of 'comfortable' and 'hygienic' accommodations hardly materialised in practise, and were transformed into governmental discursive tools for keeping the support of labourers and rural population (Alderete, 1983). The state not only kept alive the selective character of housing for workers, but a corporatist and clientelist approach to the production of housing for workers benefiting only those loyal to the ruling party (García Peralta, 2010), an approach that also gave birth to the creation of a private developer sector at a national level.

Regardless of the political alliances that inspired the foundation of a construction sector, the increasing demand for housing inspired architects and designers involved in the state housing process, to introduce housing models influenced by the modernist movement. The most important actor in this regard was Mario Pani, in charge of some of the most important high-rise housing developments in Mexico City such as multifamily housing development 'Presidente Miguel Alemán'. Pani was asked by the assistant director of Civil Pensions to design two hundred single-family housing units that would be allocated on a 40,000 square metres plot (Burian, 1997).

Inspired in Le Corbusier's principles of functionalism expressed in the Ville Radieuse (1946-1952), in France (Adriá, 2005), housing development 'Presidente Miguel Alemán' became an example of modern housing and inspiration for architects around the world. This housing concept consisted of multi-storeys buildings and housing units in the form of apartments with an internal area between 60 square metre and 120 square metre and outdoor urban equipment (i.e. gardens, sport facilities and leisure facilities), coining the term *multifamiliares* (multi-family housing complexes) that would be consistently applied for describing middle- and high-rise housing projects in Mexico (Burian, 1997). 'Presidente Miguel Alemán' (Plate 12) is

considered to be the first high-rise social housing development in Mexico City with 1080 housing units and located on the southern outskirts of Mexico City (Villavicencio & Durán, 2003). After the construction of this housing development, other settlements inspired in the same design principles were built around the city, like housing complex 'Presidente Benito Juárez' (1949), 'Unidad Independencia' (1959), and 'Nonoalco-Tlatelolco' (1964), all designed by the same architect.

Plate 12. Aerial view of multifamily housing development Presidente Miguel Alemán after its completion in 1948.

Source: www.arqred.mx

The new housing concept consisted of multi-storeys buildings and housing units in the form of apartments with an internal area around 60 square metres, and outdoor urban equipment (i.e. gardens, sport facilities and leisure facilities). Housing complex 'Presidente Miguel Alemán' is considered to be the first high-rise social housing development in Mexico City with 1080 housing units and located on the southern outskirts of Mexico City (Villavicencio & Durán, 2003). After the construction of this housing development, other settlements inspired in the same design principles were built around the city, such as urban housing complex 'Presidente Benito Juárez' (1949), 'Unidad Independencia' (1959), and 'Nonoalco-Tlatelolco' (1964), all designed by Mario Pani.

The housing development Nonoalco-Tlatelolco (Plate 13) stood out because of its size, containing almost 12,000 housing units (Adriá, 2005). During the 1960s an advanced capitalist

housing system was developed thanks to the changes in and expansion of the operative mortgage modalities and the intervention of the state in housing financing (Schteingart, 2002).

Plate 13. Panoramic view of some of the multi-storey buildings in urban complex Nonoalco-Tlatelolco, after its completion in 1964.

Source: Adriá, M. (2005)

This housing development marked the beginning of a socially and economically stable era finally achieved in Mexico since the end of the 1910 Mexican Revolution, and closed an era of modernist high-rise housing settlements. At the end of the 1960s, the concept of social housing held up until that moment was in crisis in relation to the method of provision and the type of housing. The amount of houses offered was not sufficient for satisfying the quantitative demand, pushing particularly low-income workers to opt for self-construction housing options or to be resigned to choose from options for rent (Villavicencio & Durán, 2003).

Like O'Gorman, Pani belonged to a generation of architects formed and active between the 1920s and 1960s that "truly understood culture, which was devoted to the role that the architect ought to play in society". In this regard, Pani did not just copy Le Corbusier's model but adapted it to the lifestyle of Mexican families. In Ville Radieuse, flats were developed in a single-floor layout but with a double-height distribution for the living room (Burian, 1998).

Plate 14. View of the open stair in one of the buildings in housing complex 'Presidente Miguel Alemán' in 1952
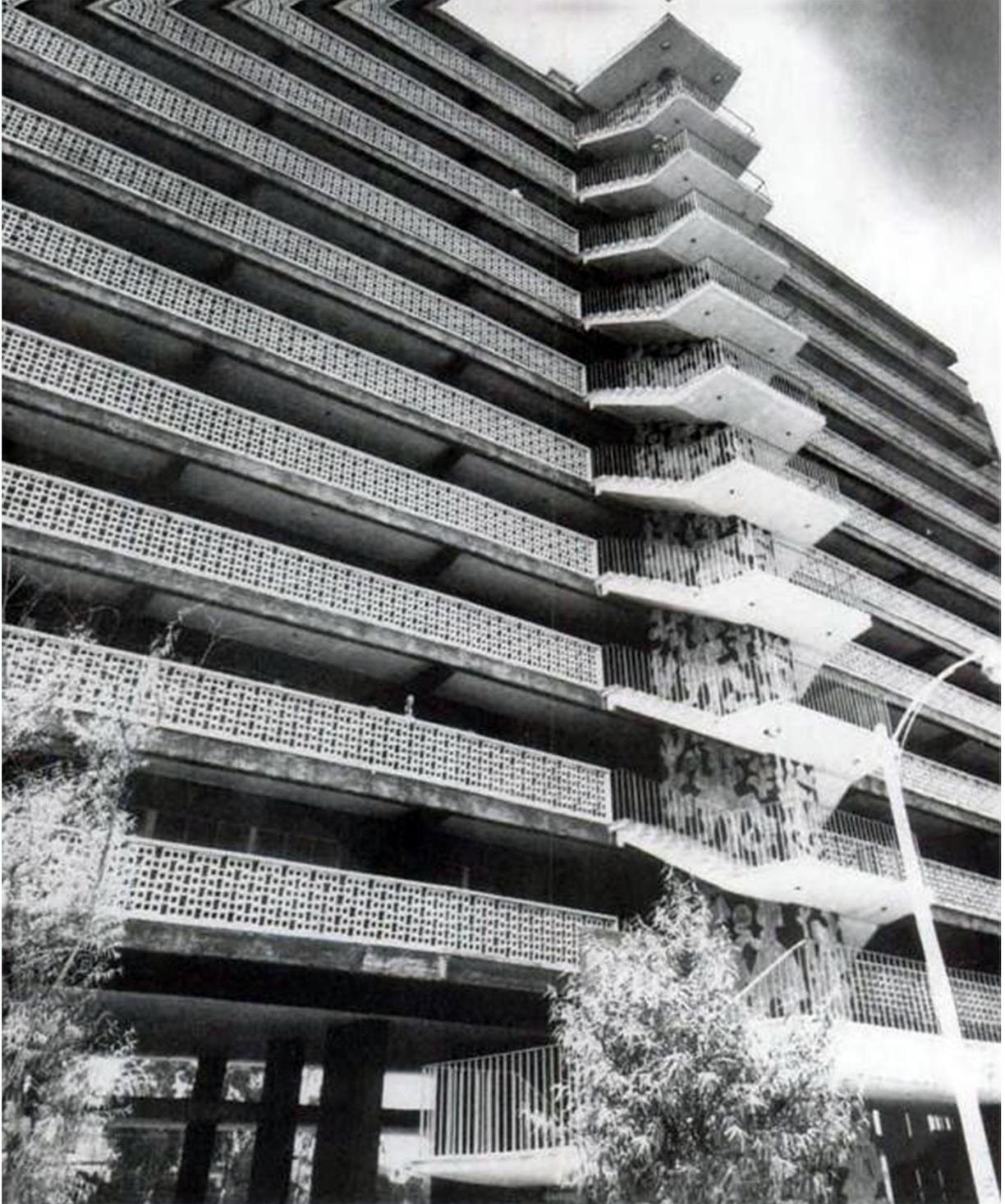
Source: Burian, E. R. (1997)

In contrast, Pani decided to keep public from private spaces separated in two-storey flats, with the most intimate parts of the house (bedrooms) on the upper floor, and the public and semi-public areas (living room, dining room and kitchen) on the access floor, respecting the importance of privacy for Mexican families.

Pani's designs looked for an economic rationalisation of construction methods and materials, achieving to obtain enough remaining funds for integrating different arts such as painting and muralism in his housing projects not only as a adornment strategy. Pani also aimed to achieve putting art and culture in reach of the working class through a real collaboration between architects and artists, and for breaking with the "abstraction and repetitiveness" (Burian, 1997, p. 184) of the Modernist International Style that received many critiques due to its monotony, abstraction and detachment of the human scale. In addition to the latter, the modernist housing developments were not part of a national housing strategy and were being built for satisfying the demand for housing in the capital and only at a small scale, which required a re-evaluation of the housing programs needed for an efficient solution to the housing demand.

Plate 15. Stair detail mural by Mexican artist Carlos Mérida in the open stair in one of the buildings in housing complex 'Presidente Miguel Alemán', showing abstractions of pre-Hispanic imagery
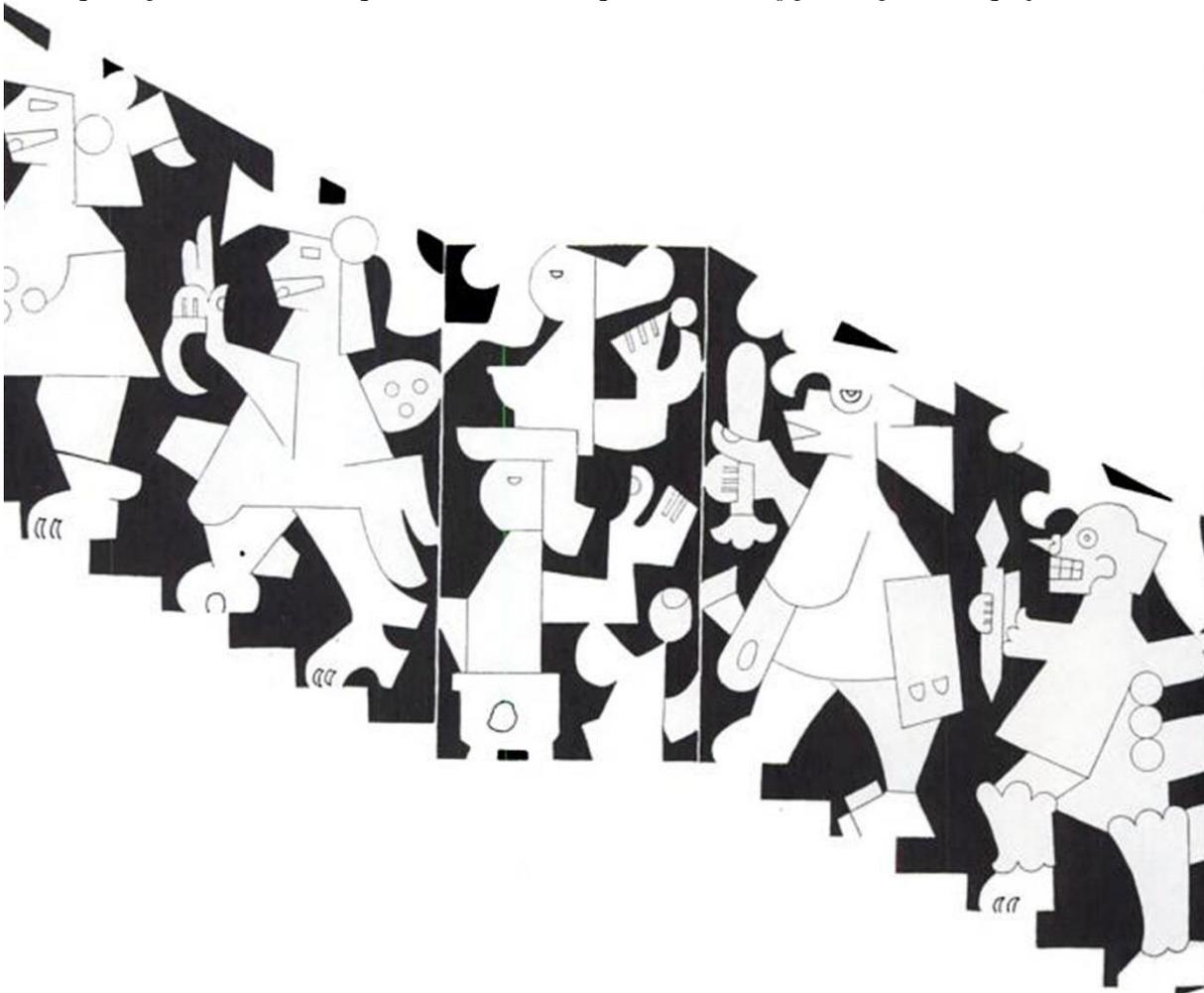
Source: Burian, E. R. (1997)

Although the design principles in which the abovementioned housing projects were drawing on a determinist approach to urban and architectural design, the ideology behind the housing projects mentioned above actually pursued the modernisation of the working class and the improvement of its quality of life through what, within the environmental determinism philosophy, was thought to be 'good design'.

6.2 INFONAVIT TYPOLOGIES

After its creation in 1972, INFONAVIT's strategy for tackling the housing demand, aimed to continue with the construction of multi-family housing developments, although not at the same scale as those built between the 1940s and 1960s. The multi-family model allowed for high-density housing hosting large amounts of people, and for the centralisation of the development's services, and urban infrastructure. A decade later, the institute would also incorporate, as part of the social housing typology offered to workers, mixed housing developments, with duplex and single-family dwellings, for an alternative option to middle-rise complexes that had lost popularity among the general population after the 1985 earthquake that hit Mexico City.

6.2.1 MIDDLE-RISE HOUSING DEVELOPMENTS

The first housing developments built right after INFONAVIT's foundation and that the institute coordinated, financed and supervised, were located in Mexico City. 'INFONAVIT Iztacalco' (1973-1978), 'El Rosario' (1974-1985) and housing project 'Los Culhuacanes' (1975-1990) followed the same Corbusian model of housing projects as self-sufficient cities, although at a smaller scale than the modernist urban complexes designed by Mario Pani. The above-mentioned developments had common use and service areas, such as schools, hospitals, nurseries, and commercial zones becoming a popular typology during the 1970s and 1980s (Esquivel & Durán, 2006; Villavicencio & Durán, 2003).

The first Director of the Urban Planning office of INFONAVIT from 1972 to 1977 and part of the founding team of the institute was the architect Mario Schjetnan. He was part of a group of Mexican architects that during the 1960s and 1970s obtained postgraduate degrees abroad, usually in the United States, and became involved in the planning of Mexico City.

Plate 16. ''INFONAVIT Iztacalco' right after its completion in 1974

Source: INFONAVIT

Plate 17. 'INFONAVIT Iztacalco'

Source: Reyes (2004).

Plate 18. Thamesmead Housing Estate, London

Source: "Thamesmead", by The JR James Archive, ca. 1969, CC BY-NC 2.0.

Plate 19. Thamesmead Housing Estate, London

Source: "Thamesmead, Bexley London", by Iqbal Aalam, March 21, 2008 via Flickr. Reproduced with permission from the author

Mario Schjetnan developed a master's degree in Landscape Architecture at the University of California in 1970 (GDU, 2013) and based his urban design ideas on principles of social integration and environmental justice (Trulove, 2001). He also collaborated on the landscape design of other large housing developments like 'Integración Latinoamericana', not financed by INFONAVIT but by FOVISSSTE, a housing fund whose direction in 1973 was in the hands of another architect, Enrique Álvarez Riquelme, who was directly involved in the promotion and coordination of the project (López, 2013).

The translation of Schjetnan's principles were easy to observe in 'INFONAVIT Iztacalco' (Plate 16 and Plate 17), a housing project located in the east side of Mexico City, designed to hold 5,200 households in four different sections (Esquivel & Durán, 2006). Following the compact city concept and middle-rise typology of housing, 'INFONAVIT Iztacalco' held services areas and buildings, continuing with the tradition of modernist architecture inherited from housing developments built in the 1950s and early 1960s.

However, different from 'Nonoalco-Tlatelolco', 'INFONAVIT Iztacalco' innovated in the consideration of landscape as an important feature in social housing. With what looks as a reinterpretation of Thamesmead, built in the mid-1960s in London (Plate 18 and Plate 19), Schjetnan's project aimed at "modernising the working class" (Reyes, 2004). 'INFONAVIT Iztacalco' stood out for integrating service and common areas with green paths, water zones and parks around the development. Except for the water feature, the same concept and was used in other projects built around the same time in Mexico City such as 'Unidad Habitacional Vicente Guerrero' and 'Unidad Habitational Plateros', in the west side of the capital (Soto, 2012).

The planning and design of 'El Rosario' (Plate 20), the second of the developments mentioned above, was the result of the collaboration between the Mexican architects Pedro Ramírez Vázquez and Teodoro González de León. Ramírez Vázquez was born in 1919 and was part of a generation influenced by the stream that pretended to transform the armed revolution into a social revolution (Canales & Hernández, 2011), whose nationalist architecture was supposed to be a tool at the service of society, and capable of changing it (Uribe, 2015). González de León, born in 1926, worked for Mario Pani while still studying architecture and after he graduated, worked for a short time in Le Corbusier's studio in France ("Semblanza", 2001). Both architects belonged to a different generation to those involved in 'INFONAVIT Iztacalco' and 'Integración Latinoamericana', however, their work was imbued with the urban and architectural principles of functionalism.

Plate 20. ''El Rosario'

Source: news.urban360.com.mx

Plate 21. Aerial view of 'El Rosario' in Mexico City.

Source: Google Earth (2015)

'El Rosario' was conceived with a spatial distribution of corridors and single-family apartments for four persons (Plate 21), up to 60 square metres, in multi-stories buildings. Inner

streets and avenues provided mobility to both its inhabitants and visitors through the 15,976 housing units arranged in duplex and multifamily buildings (Villavicencio & Durán, 2003). Unfortunately, 'El Rosario' was not in the end, completely faithful to the architects' conception. During the construction of it, which lasted until 1985, more buildings were added resulting in fewer open spaces.

'Los Culhuacanes' (Plate 22) is another example of multi-family housing, built in the mid-1970s and located in the south of Mexico City. Also a large-scale housing development, it has 19,788 households and green spaces and common use open areas. The majority of the large scale housing developments built in Mexico City during the 1970s and 1980s were located on the outskirts of the city where there was an availability of land due to their size, considered to be 'cities within the city' (Villavicencio & Durán, 2003).

Plate 22. 'INFONAVIT Los Culhuacanes'
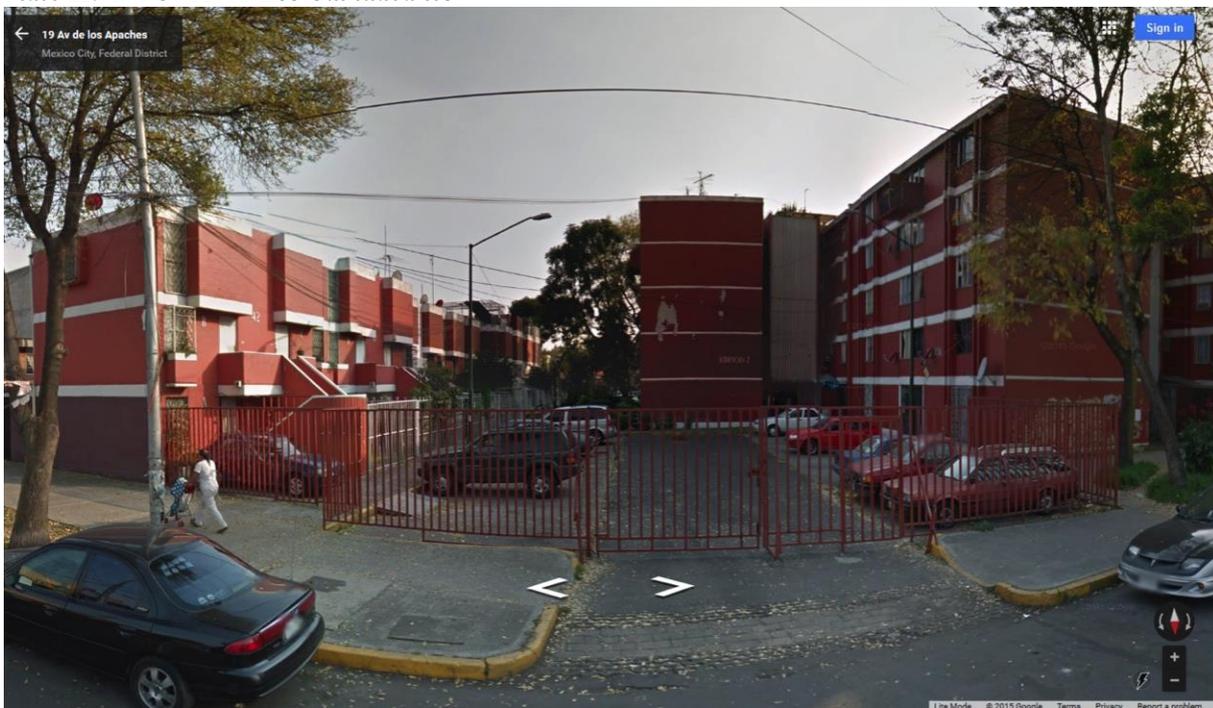
Source: Google Maps (2015)

Nevertheless, the multi-family concept as applied in the projects mentioned above had a relatively brief heyday. Multi-storey buildings remained as a typology of housing financed by INFONAVIT during the 1980s, but design consideration towards the visual and physical quality of the buildings' surroundings gradually declined. One of the reasons behind the latter could be attributed to the problems that emerged from the lack of maintenance and consequent deterioration of the common open areas and residents' complaints.

The administration of the common areas within social housing developments is considered a dimension of the habitation process by Villavicencio (1996) and Villavicencio and Durán (2003). The different dimensions of the habitation process emerged from Villavicencio's and Duran's work will inform the analysis presented in Chapter 7, and although the dimension referring to the administration of common areas will not be analysed in depth, it will be addressed for the purpose of this section.

According to Villavicencio and Durán (2003), within the administration dimension there are elements that once housing has been delivered to residents, could represent problems that lead to the deterioration, not only of the built environment, but of the private and collective life in the development. The list of elements included the lack of an institutional presence that helps in the administration and organisation between residents and the maintenance of the open areas (Villavicencio & Durán, 2003). During the 1980s, local or municipal governments did not intervene in what happened with the physical quality of recreational or services areas after the occupation of the housing projects. Instead, it was left to residents to sort out the maintenance of parks, buildings or paths through self-organisation or through paying external administration services.

Self-organisation among social housing residents in multi-family complexes was not a successful model in the 1980s according to Villavicencio and Durán (2003), since it represented an extra expense for residents with a constrained income or in other cases, simply a lack of interest or cohesiveness among the inhabitants. Despite the existence of laws and regulations for residents of these type of housing developments, there was not an actual system that penalises those who did not fulfil their responsibilities (Villavicencio & Durán, 2003).

By the end of the 1980s and beginning of the 1990s, a review of the way housing was being conceived changed not only as a consequence of the 1985 earthquake, but due to the changes in the national and global economy, that led the Mexican government to promote the participation of the private sector in the production of housing (Lindón, 2006). Although housing or land policies were not yet influenced by the neoliberal wave, discussions about changing the way social housing was produced and land used were already being held in Mexico.

A mixed typology of housing appeared, combining single-family dwellings and either duplex or middle-rise housing throughout the country. In the city of Mazatlán, the middle-rise typology mixed with single-family dwellings was used in 'INFONAVIT El Conchi' (Plate 23), a

housing development located in the then outskirts of the city that has presented many problems between residents, allegedly due to the inability of local people for getting along with each other in a non-single family housing typology, which was acknowledged by one of the Sub director of Planning in Mazatlan City Council.

"The fact that in Mazatlán we've been talking in the same terms than in Guadalajara or Monterrey is worrying. Developers just come and plant their [middle- and high-rise] housing... but that it's not housing! We [in Mazatlán] are not used to that kind of housing. In El Conchi you have four-storey housing with flats and people have had a lot of problems and I know many who have left because they don't want to own 'air'." (Subdirector of Planning, Int@CITYCOUNCIL, 13.01.2013)

Plate 23. Street views of housing development 'INFONAVIT El Conchi'.

Source: Google Maps, 2015.

The idea of living in a flat was against a deep-rooted concept of home in Mexico, especially in small cities, which means to have not only a place to live, but to own a piece of land (Esquivel et al., 2005). The reference made by the interviewee to the second and third

biggest cities in Mexico also emerged from a reflection about the continuous and spreading urban growth provoked by new housing developments and about the re-densification of city centres.

Continuing with the discussion about the administration and maintenance of housing developments, 'Nonalco-Tlatelolco' currently deals with problems related to the structural integrity of the buildings and the deterioration of the common use areas, as well as with high levels of insecurity and crime within the limits of the development (Casillas & Pérez, 2014). 'INFONAVIT Iztacalco' on the other hand, suffers considerable levels of physical deterioration in its buildings' facades and green areas due the lack of neighbourhood organisation or involvement from authorities (Soto, 2012).

The ideals on which 'INFONAVIT Iztacalco' was designed in the 1970s considered the landscape as a tool for achieving social inclusion and as a feature to which low-income population had the right (Trulove, 2001). Nevertheless, it is possible that Schjetnan's and Pani's idealistic and possibly deterministic approaches to the architectural design and the design of landscape did not take into account the complexity of social relations in multi-family housing, when factors like economic constraints and a lack of housing options obliges people to live in an imposed built environment and to interact with people they did not choose as neighbours (Rosales, 1999).

The analysis of resident's lives at a micro scale in middle-rise housing developments requires a consideration of the overall history of the everyday life (Giglia, 1996), which includes everyday practices within the development as well as the relationship between residents and local authorities. It is not possible to make residents completely accountable for the physical quality of their built environment in social housing on the other hand, if factors like the lack of community sense, lack of awareness of laws, regulations and responsibilities as tenants in a common hold system, social and cultural differences, lack of participation and inappropriate use of power are overlooked (Marván, 1994).

Nevertheless, it is indubitable that the urban and landscape design of the developments gradually decreased in quality over the years, reflecting the economic constraints that INFONAVIT was going through and turned landscape design and a good quality urban image into luxury assets during the mid-1980s. High inflation rates during the 1980s affected the price of construction materials and the institute had to reduce the size of housing (Alderete, 1983), which also impacted on the quality of the outdoor services within

housing developments. Furthermore, the involvement of individuals that influenced the ideology behind the design of large social housing developments, such as Schjetnan or González de León faded and instead, although still under the supervision of INFONAVIT, construction companies possibly with little interest or expertise in ground-breaking architectural styles, or without a socially-committed architecture, became in charge of the design and planning of social housing.

As it has been presented in this section, Pani's, Schjetnan's and even González de León's approach to the modernist design and planning of social housing were the subject of criticism due to their environmental deterministic approaches and disconnections from the human and social scale. Similarly, O'Gorman's work in the 1930s was criticised due to its "ugliness" (Sánchez Ruiz, 2005, p. 17), lack of aesthetics and rigorous follow up of functionalist design rules as presented in Section 6.1. Despite the disputed arguments behind each architectural style, when contextualising the work of these architects and landscapers it is possible to read in their designs a social concern with the needs of both the population and the city.

As analysed in Chapter 5, when reflecting on the transformation of INFONAVIT, Alderete (1983) advocated for an analysis that considers the practices of individuals in day-to-day political and economic processes, based on the idea that these actors can generate particular organisational or institutional models following their individual interests and ideas (Benson, 1977). Furthermore, the same principle can be applied when analysing the translation of 'social' into the built environment. Juan O'Gorman, Mario Pani's, Mario Schjetnan, and Teodoro González de León worked as part of an institutional structure; the Ministry of Education in the case of O'Gorman, the architect in charge of the development of new housing projects appointed by Mexico City's government in the case of Pani, and INFONAVIT in the case of Schjentnan and González de León. Despite being framed by political and economic agendas, each one of them had a position in each institution and as part of each process that allowed them to materialise their own views, ideals and goals.

Without attempting to idealise architectural design ideologies or styles, each one of the architects mentioned above attempted in their own way and within their historical context, to contribute to the redesign of modern Mexico. O'Gorman tried to respond to the social concerns through an austere architecture, also part of the urge to reconstruct a Mexican identity after the 1910 Revolution. Pani believed in the modernisation of the working class, and Schjetnan advocated for social equality and inclusion through 'good' landscape design.

However, soon after the creation of INFONAVIT, the role of actors in charge of housing design and planning with a social concern and commitment gradually disappeared. On the one hand, the latter could be attributed the fact that the institutionalisation of housing widened the scope of social housing programs to a national level, and improved the quantitative production of housing stock. The need for satisfying the demand for housing stock throughout the country, led INFONAVIT to standardise its housing designs. On the other hand, the legacy of clientelist and corporatist tendencies inherited from the first half of the 20th century, partially emerged from the symbiotic relationship between governments and unions, had an impact on the housing typologies, as will be discussed below.

6.2.3 INFONAVIT SINGLE-FAMILY HOUSING

Although single-family dwellings became the archetypical social housing unit after the neoliberal reforms in 1992, single-family housing was a typology already present in projects financed by INFONAVIT in the late 1980s. A simple housing prototype for mass-production makes sense when aiming to satisfy the quantitative demand for housing. However it neglects aspects of taste, local culture or climate and overlooks the urban impact of monotonous housing blocks. The internal distribution of the house followed the same idea and did not change from development to development either, according to interviewees.

In the first examples of this typology of housing the geographical characteristics of the location of housing developments were ignored. The design solution proposed was a universal housing prototype that would be replicated across the country. This contradicted what was stated in the INFONAVIT Law (INFONAVIT Law, 1972), where the housing design financed by the institute should consider the regional and geographical characteristics and needs.

When analysing the characteristics of the houses in different regions of the country (Figure 13) built by the end of the 1980s and beginning of the 1990s, it is possible to identify a similar architectural design, without variations in roof height, windows sizes or plot shape. There is little variation in the external appearance of the houses, showing no consideration to the climatic differences or cultural and regional tastes. In practice, the testimony of interviewees involved in the production and appraisal of housing acknowledge that there was no difference among the single-family typology throughout the country.

"Yes, it was interesting back then in the 1970s, 1980s... you had only one developer therefore only one product. So if you picked an INFONAVIT house, it was going to be the

same in Playa del Carmen, Tijuana or Mexico City because it was the same architectural

project designed with the same construction materials everywhere." (Architectural

Design Manager, Int@ARA, 11.09.2012)

The uniformity in the design was also a symptom of the centralised nature of the institute; INFONAVIT's housing policy reflected the core philosophy not only of the fundamental principles of the Mexican state at that point in history, still displaying a paternalist state policy.

"All the architectural projects were designed in Mexico City. Before the 1990s everything

was done there, designed, planned and approved in Mexico City. Changes to the design

weren't allowed." (Official, Int@INFONAVIT, 12.12.2012)

The house was designed to the minimum in order to fit into the fixed dimensions of the plots. However, what was considered a basic social housing unit by the end of the 1980s differed in size for what became the minimum in later years, which in comparison showed a considerable decrease in the size of housing.

"It has been gradually improving (INFONAVIT). We have to contextualise the houses in

history. Those houses built by INFONAVIT in the 1980s like 'INFONAVIT Jabalíes'

indeed, were larger but INFONAVIT only had one or two types of houses back then and

workers were classified in a different way. Now it's different and yes, if you compare a

house from back then to one built nowadays, well... you realise that a closet doesn't even

fit inside the bedroom, for example.." (Real Estate Appraiser, Int@APRONO, 24.10.2012)

The spatial characteristics of social housing show that the idea of 'minimum', 'social' and 'housing for workers' was different in the late 1980s and by comparison, better than what was offered after housing reforms and what is being produced nowadays.

One of the case studies addressed for this research and detailed in chapter 4, is a housing development financed by INFONAVIT and finished around 1988 in the city of Mazatlán. Along with other developments in the same city, 'INFONAVIT Jabalíes' shows a mixed type of housing; duplex and single-family housing are present, with the majority of the

housing stock being single-family dwellings. Other developments with single-family houses are 'INFONAVIT Playas' also financed by INFONAVIT and 'FOVISSSTE Esperanza' for workers from the public sector, both finished during the second half of the 1980s and showing the type of housing for workers offered during the first decade of the institutional production of social housing.

The three developments mentioned above show a similar architectural design and a similar internal distribution, the latter regardless of having been financed by INFONAVIT or FOVISSSTE. The physical characteristics of these developments are found in other developments financed by these institutions around the country, making it difficult to differentiate them from another and revealing little about the climatic characteristics of the regions they are located in (Figure 13).

Examples of the uniformity in the architectural design of housing can be seen around the country, in neighbourhoods or *colonias* in different states. Houses kept to the minimum dimensions required in each state without any variation apart from flat slabs to pitched roofs or within the house, in relation to the internal distribution.

The designs approved by INFONAVIT did not show an acknowledgment of regional architectural identity or design preferences. Vernacular architecture evolves in accordance to the geography and climate of a particular area, presenting a more suitable response to local weather and landscape. The architectural design of vernacular buildings presents a better bioclimatic response to the regional characteristics due to the use of local materials and a design that has been inherited from the experience of previous generations.

6.3 THE MATERIALISATION OF NEOLIBERALISM IN HOUSING

As argued in chapter 5, after the 1992 reforms the development of large single-family housing projects or *fraccionamientos* located in the outskirts of the cities became a marketable trend due to the availability of cheap land offered through a free market to private developers and the success of the single-family typology among Mexican workers. The production and planning of housing for workers was delegated to the private sector in accordance to the World Bank recommendations. The private construction sector was seen as an important source of employment during this transition, which would allow a reactivation of the national economy through a free and efficient real estate market.

In what appeared to be a leap of faith, INFONAVIT left behind the Keynesian approach to the production of housing and detached from the physical and material production of housing; it stopped being a housing promoter and provider and was turned into a housing facilitator (García Peralta, 2010; Villar Calvo & Méndez Ramírez, 2014). From this moment on, INFONAVIT would establish the amount of the credits granted (a certain number of minimum wages) which would also determine the maximum costs of a housing unit based on its new classification of workers and credits that would be the parameter for determining the size of social housing during the design process. INFONAVIT relied upon the city council's supervision and detached from the material production of housing.

Construction sites would be supervised in accordance to city council´s regulations; city councils would send their own personnel to verify that what was being built matched to what was presented in the construction permit application submitted by the construction or developing company. The latter was already a part of the supervision practice of every city council throughout the country; this way, construction companies became accountable to city councils and not INFONAVIT, despite the fact that they would be constructing housing that would be acquired with the institute's resources.

6.3.1 REDUCTION IN SIZE

The neoliberal reforms marked the beginning of a reduction trend in the size of social housing. Although there is not a detailed historical record of the size of housing produced, according to Lindón (2006) this tendency started in the 1980s after having showed a constant increase in the dimensions of housing for workers since the 1930s (Figure 14). Sánchez' data presented in Figure 14 does not reflect the 33 square-metre houses built during the 2000s, which were found in one of the case studies, 'Pradera Dorada' built in 2007, as well as in one of the first housing developments assessed by INFONAVIT using the housing assessment tools crated by the institute in 2009, 'Galaxia Almecatla', which will be analysed in section 6.4.

The changes in the size of housing do not reflect any particular changes in the INFONAVIT Law, the Labour Law, the Federal Housing Law or the Housing Law in regards to the physical dimension of housing. This reduction in the constructed area reflects other factors that determined the physical characteristics of housing. These factors can vary without needing to be registered on housing policies or regulations, such as land plot and construction costs and the acquisitive power of social housing beneficiaries (Lindón, 2006).

Figure 13.Case studies and housing developments built by INFONAVIT at the end of the 1980s located in different states of Mexico

Single-family houses in 'Infonavit Punta Banda', Ensenada, Baja California

Google Maps (2015)

Single-family houses in 'Infonavit Nacional', Chihuahua, Chihuahua

Google Maps (2015)

Single-family houses in 'Infonavit Fundadores', Nuevo Laredo, Tamaulipas
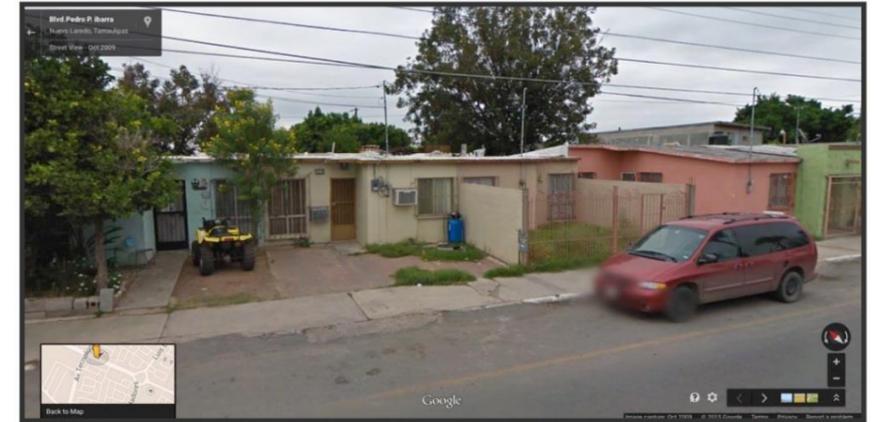
Google Maps (2015)

Single-family houses in 'Infonavit Jabalíes', Mazatlán, Sinaloa

Taken by the author (2012)

Google Maps (2015)

Single-family houses in 'Infonavit Santa Julia', Pachuca, Hidalgo

Google Maps (2015)

Duplex housing in 'Infonavit Jabalíes', Mazatlán, Sinaloa

Taken by the author (2012)

Duplex housing in 'Infonavit Constituyentes, Uruapan, Michoacán

Google Maps (2015)

Single-family houses in 'Infonavit Ciudad Industrial, Villahermosa, Tabasco
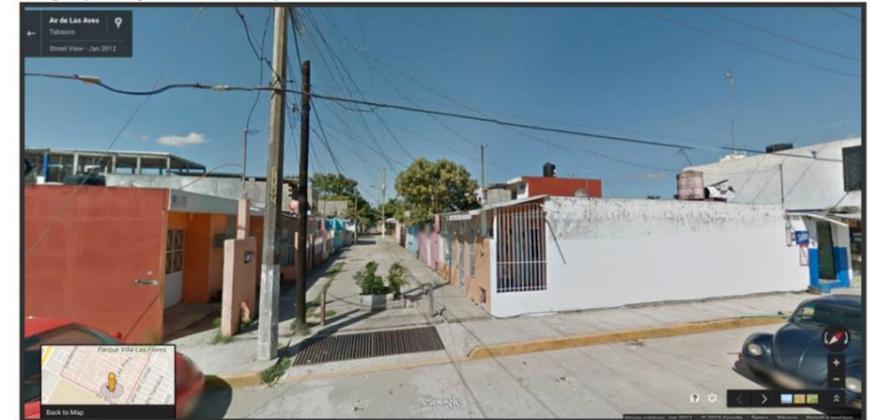
Google Maps (2015)

Source: Developed by the author (2015)

The construction cost would be directly affected by inflation rates, which in the case of Mexico has varied dramatically since the 1980s and has been significantly affected by global macroeconomic crisis and adjustments.

Figure 14. Changes in the size of housing.

Source: Developed by the author using own data and data from Sánchez Corral, J. (2006). La vivienda "social" en México. Pasado, presente, ¿futuro? Mexico City: Sistema Nacional de Creadores de Arte Emisión 2008.

As it was analysed and discussed in chapter 5, one of the impacts of the 1992 reforms was seen on the administration of land. The impact consisted of the change of status of *ejidal* land from almost untouchable, due to the post-revolutionary unseizable legacy, to available through an open market system. As a private developer or construction company, to generate profit from the construction of social housing within the costs established by INFONAVIT, they had to look for land as cheap as possible. This usually meant to acquire land in the outskirts of the cities, disconnected from the city centres, lacking public transport or services infrastructure. Construction companies could also have access to information related to governmental urban development plans before they were issued for public access, allowing practices that involved land and economic speculation.

As argued in the previous chapter, the price of social housing does not proportionally reflect the low costs of land or the low construction costs achieved through the mass and serial construction processes or the use of less labour than traditional construction methods. Nevertheless, it would be simplistic to attribute the cause of the reduction of the size of housing to private developer' economic interests. INFONAVIT was forced to reduce the size of housing due to inflation rates increasing the cost of construction materials, in order to reduce

construction costs and to satisfy the demand for housing. Once the amounts for credits were established not in terms of construction costs but in relation to times-fold minimum wages, the relationship between construction costs and housing size would not be directly proportional anymore. Minimum wages are affected by inflationary rates as it was analysed in chapter 5, and the implementation of workers' salary as the measuring unit for determining credits, debts and construction cost would play against the interests of labourers, particularly those earning low wages. The acquisitive power of workers would decrease, as construction materials costs would increase, also affected by inflationary rates.

> *GI: The reduction of the size of housing… thinking about what was being offered before law reforms and after law reforms, which ended up being 32 square metres; the question so far is why? What happened?*
>
> *PR1: Minimum wages. Because if a worker earns the minimum wage that today is something around sixty two pesos, more or less […] I mean, these people will never have access to a housing credit. When is that going to happen for them? How much money can they obtain for a housing credit? Around 50 thousand pesos. (Official, Int@INFONAVIT, 12.12.2012)*

In order to keep houses within the established budget, or put differently, in order to maintain a profitable housing production, developer companies' designers must design to the minimum. The cost limitations they face push the design process to a very simplistic rationale.

> *"For designing a house you make a very simple mathematical operation. You divide 240 thousand by 38 square metre and we get around 6 thousand pesos per square metres. […] The truth is, for selling a house in 6 thousand pesos per square metres, you have to apply an absolute minimum criterion. Why? Because 6 thousand pesos are not only for the house; those 6 thousand have to include water provision systems, collective drainage […] It's a house with minimum finishing materials… minimum! And that applies to the asphalt in the Street. If the municipal authorities ask you to install an asphalt layer of four centimetres, you give them those four centimetres (Architectural Design Manager, Int@ARA, 11.09.2012).*

The latter testimony makes the cost constraints appear as a limitation that 'forces' developers to design considering the minimum material quality levels and 'pushes' them to construct verging on the limits of physical adequacy. The profit generated by this practice however, shows that private construction companies are far from sacrificing their revenues for the well-being of social housing beneficiaries.

Private developers accomplish low production costs through standardised and automatized methods, and through dealing with construction material providers without intermediaries; despite the cheap production costs, housing units are highly priced according to the housing and land market, also including the financing expenses acquired by the developers for the construction of the projects (Esquivel et al., 2005). These criteria determine the quality of the spatial dimension of housing that will be explored in chapter 7.

Therefore, the reforms appeared not to represent a responsibility, but a new freedom that allowed developers to plan and design housing to the minimum, prioritising profit and quantity over quality. The mass production of housing practised by the private sector represented an economy of time, space and money; saving time and expenses during the construction process and access to cheap land, and an economy of space through designing to the minimum requirements.

6.4 2009 POST-OCCUPANCY ASSESSMENT TOOLS

The neoliberal approach to housing lowered the construction costs but also the material and physical quality of the dwellings provided. This change provoked criticism and complaints from residents directed to both INFONAVIT and private developers. As a response to these critiques and complaints, INFONAVIT decided to create and implement assessment tools for evaluating the quality of housing acquired with the institute's credits.

Therefore, in 2009, INFONAVIT decided to incorporate an assessment index for recently acquired houses. The institute selected J.D. Powers and Associates, a US marketing information company that designs and develops industry-wide and client-specific research, for developing the *Índice de Satisfacción del Acreditado* (ISA, Home Buyer Satisfaction Index). J.D. Powers and Associates developed a survey-based indicator that would "reflect the quality of service and product of the institution costumers received during their recent acquisition of a new home through the builder that sold them the property" (J.D. Power, 2014). In the same year, J.D. Powers and Associates was selected for developing the Vehicle Ownership Satisfaction Study in Mexico, revealing their dominance in the quantitative survey industry.

For the first time in INFONAVIT's history, the beneficiaries of the institute's credits would be able to assess the quality of the house they acquired and the developers' performance, in order to create a data base for providing beneficiaries with better tools for choosing a house and a housing development. The ISA was a tool praised by the Federal Attorney's Office of Consumer (Profeco, *Procuraduría Federal del Consumidor*), the institution in charge of protecting and promoting consumers' rights, "ensuring the equity in trade relationships that strengthen a culture of responsible consumption and access to better market conditions for products and services", and of "ensuring reliability, lawfulness and legal certainty with the regulatory framework of Human Rights for consumers" (Profeco, 2015).

Despite Profeco's approval and praise of the creation of ISA (Profeco, 2010), the purpose of this data base would be exclusively informative and not for applying sanctions to the developers that obtained low grades. Complaints from residents would be channelled directly to the construction company; INFONAVIT would not be obliged to respond to them anymore in accordance to the article 51 bis 6 added in 1992 that states that "the contractors financed by the Institute will respond to the acquirers in relation to flaws in the constructions, hidden defects and any other responsibility, within the terms of the applicable dispositions" (INFONAVIT Law, 1992).

Due to the superficial quantitative approach to the evaluation of residents' satisfaction (Appendix C), the results published by INFONAVIT do not reflect the specific complaints from the interviewees in relation to the physical quality of the developments and the houses. In this regard, reports from national and local newspapers have done more in recording residents' specific concerns that the institute's evaluations.

In 2009, the same year of the creation of ISA, the size a social housing unit was 32.75 square metres. During this year, one of the most important private developers in Mexico and part of the iH, Inmobiliaria SARE, offered for sale a housing development called 'Galaxia Almecatla' (Plate 24) in the state of Puebla. Residents from 'Galaxia Almecatla' issued a complaint to Profeco and legally denounced the construction company after a few months of having moved to the development. Complaints included the incompletion of houses, lack of public services, poor urban infrastructure and lack of green and common areas (Schteingart, 1984).

Plate 24. Housing settlement "Galaxia Almecatla" in the state of Puebla.

Source: www.imagen.com.mx/

City councils are responsible for supervising the progress of housing developments and of not allowing companies to offer anything for sale until at least 80 per cent of the construction is done. However in this case, the council of Cuautlancingo in the state of Puebla allowed it to happen and 'Galaxia Almecatla' was assessed as the worst housing development in the country according to the 2010 ISA assessment and Puebla was evaluated as the last but one state in the country that same year (Farías, 2011).

The problems were not solved and complaints remained constant during the following years, with one of them being the fact of having been misled in relation to the physical quality of the house. Residents declared that the model home that was shown to them displayed a better construction and material quality than the one they received, which showed after a short time, problems with the installations, walls that felt "like cardboard" and leakages in slabs (Schteingart, 1984; Videoconsulta, 2011).

As a partial response to the inhabitants' complaints, in 2011 Inmobiliaria SARE organised the reforestation of green areas within the development, which involved the help of the residents contributing to the company's aim of bringing communities together. The event also included the participation and approval of representatives of the city council (Puga, 2011a).

The so-called 'reforestation' consisted of the provision of trees by the construction company for residents to plant in areas that were presented as green zones in the original project, but were never finished. In 2013 it was reported that hundreds of families in 'Galaxia Almecatla' were still living without basic services, such as a proper sewerage system or a reliable water and electricity supply, as a result of the lack of interest and bad coordination between developers and municipal authorities (Castillo, 2013; Damián, 2009).

INFONAVIT's representative in the state of Puebla, Ricardo Mancisidor Landa, responded to criticism about the bad quality of housing developments in this state including 'Galaxia Almecatla', by clarifying that INFONAVIT is not responsible for the material quality of the houses or the developments, that the institute relies on the approval of council's supervisors for considering developments worthy of being financed by INFONAVIT and the ISA assesses housing features that have nothing to do with the construction of the houses but with the satisfaction of the beneficiaries (Puga, 2011a, 2011b). INFONAVIT's representative declared that although the institute has talked to the owners of construction companies with low grades in order to resolve the inhabitants' unconformities, he strongly recommends buyers to check and analyse their options before deciding "what it will be their patrimony" ("Sare Defraudó a Poblanos", 2012). The declarations of Mr Mancisidor reaffirm the free choice and individual responsibility approach taken by the institute and the developer companies since the 1990s, as argued in Chapter 5.

Developers not delivering what was submitted to the council and presented to residents was an issue that emerged during an interview with the Sub director of Developments and Urban Planning in Mazatlán's council.

> *"We had a lot [of problems with developers] in the mid-1990s, even around the years 2004 and 2005. [...] They left the housing developments unfinished and that, along with the bad quality of the construction materials they used for the roads and pavements, were the most common problems we had with them.*
>
> *There was a change in the construction regulations around 2001 and it was a change for good. Developers were required to use hydraulic concrete instead of asphalt on the roads as a response to the problems we had with them. The council was under a lot of pressure due to residents' complaints because roads didn't last. [...] Even today, many roads [from old developments] have been repaved through governmental programs because they*

looked like streets from Syria." (Subdirector of Housing Developments,

Int@CITYCOUNCIL, 13.01.2013)

In the case of Mazatlán, the council has been the one taking action in regards to residents' demands, using governmental budget for fixing poorly developed construction work. In the case of the houses, the council cannot do more than make recommendations to the developers or work as an intermediary.

Failure to meet building standards found in the case of 'Galaxia Almecatla' were present in testimonies from residents in 'Pradera Dorada' built in 2007 by MEZTA, and 'URBI Villa del Real', built by URBI, a construction company that, as with Inmobiliaria SARE, was part of the iH as described in Chapter 2. The above-mentioned failures also related to residents feeling they were misled, incomplete houses and development's poor infrastructure and the lack of interest and attention from authorities and developers, which will be explored in chapter 7 when analysing the residents' experience with their homes during the habitation process.

'Galaxia Almecatla' is an example of the complexity of the post-occupation process in social housing, not easy to assess with a broad questionnaire. The ISA is simplifying the habitation process and the problems involved and overlooking issues that reveal more in-depth problems in relation to the physical quality of the dwellings; it focuses on the short-term satisfaction of the residents, the treatment received from the developer and the cost of housing.

One of the lowest points in the spatial and physical quality of housing was reached in 2011, when the size of a social housing unit decreased to 33 square metres. Houses of this size had only one bedroom, a bathroom and a common area for kitchen, dining and living room. This size of housing qualified for governmental subsidy for low-income workers to have access to a house. The size and the internal distribution could be considered to be in the category of progressive housing, which is a concept usually applied for vulnerable parts of the population, such as the unemployed or people earning between 1 and 2 minimum wages. Despite the latter, it was considered to be appropriate in the category of a social housing unit, with a cost in 2009 of around $210,000 (±£10,000). At this point in the history of social housing in Mexico, the material quality of the dwellings appears to have reached the lowest point.

Profit is even more relevant since the construction methods used in social housing production allow reaching low construction costs. According to an interviewee, he could build a 33 square metres social housing unit just like the ones he has worked on as a freelance construction worker for almost half the market cost of a dwelling.

> *"These houses don't cost more than 60 thousand pesos. Let's start with the materials and construction methods. They use hollow concrete blocks and they don't make concrete roofs, they use polystyrene. One knows about construction materials and we know that a bag of cement lasts a lot when using it with hollow blocks. I'd say around 60 thousand, 70 thousand. The developer company sells it to you in 120, 130 thousand pesos." (Peraza, 2015)*

What the construction worker is not taking into account is the cost of the infrastructure that must be provided by developers. Nevertheless, if the individual cost of a house can be almost half the market price, mass-produced housing and systematised construction methods can push down those costs, increasing the profits margin.

As reviewed in Chapter 3, post-occupancy assessments with a costumer-product evaluation approach, although they help to understand the performance of architecture, they neglect the impact of the built environment on the lives of residents. Despite the claim quantitative success of the provision of social housing in Mexico as presented through the publication and implementation of the ISA and the ECUVE, the assessment tools used by INFONAVIT are disregarding the real needs in regards to housing from social housing beneficiaries.

CONCLUSION

This chapter addressed the second question of this research 'How is 'social' being translated into the built environment in social housing?', analysing the history of housing for workers focusing on the translation of policies into the built environment since the first attempts to provide housing for workers.

The translation of housing for workers into the built environment in Mexico has been strongly influenced by architectural trends developed in Europe even before the beginning of the 1910 Mexican Revolution. The principles of French work centres changed at the end of the 19th due to debates based on humanist ideals, which were concerned with quality of labourers'

housing. These debates affected company towns in Mexico and this model, although not part of state housing programs prevailed after the 1910 Revolution preserving each a community identity and some of them becoming the centre of towns and cities that still exist today.

The principles of housing around work centres stated in the 1917 Mexican Constitution suggested a similarity with the company town model. Nevertheless, it is unlikely that the latter pretended to preserve the company town model and it was instead, part of a state strategy for relying on private capital for the construction of urban infrastructure and services.

However, until the creation of INFONAVIT in 1972, company towns were the only example of labourers' housing built with private capital. In the meantime, the state attempted to provide housing to workers but as part of a selective and clientelist response. Still, these attempts followed many of the social ideals of the Revolution, which were translated into a functionalist architecture that aimed to modernise the working class a tendency that continued until the 1960s with the appearance of modernist architecture. Nevertheless, functionalism and modernism, although criticised due to its determinist approach to design and its disconnection from the human and social scale, was based on social ideals.

The 'social' character of housing remained as part of INFONAVIT's objectives and solidary fund in 1972, and was translated into multi-family housing developments. The architectural and landscape design held social ideals and similar to designs of previous decades, aimed to improve the quality of life and to dignify the working class. However, the ideological tendency lasted less than a decade, and changes in the institute transformed the way housing developments were conceived and assigned to constructors and distributed among workers.

The single-family typology that appeared at the end of the 1980s became the archetypical social housing unit or 'INFONAVIT housing' unit, anticipating the neoliberal reforms that would consolidate land reforms in favour of changing the way land was being administrated by the state. Although still with a social commitment that supported the material quality of housing, the ideal of a quality house and a piece of land for every worker faded with the arrival of the 1992 neoliberal reforms.

Social housing produced by private developers suffered from many of the problems attributed to institutional social housing and that neoliberalism would supposedly resolve, such as monotonous and repetitive design, lack of housing typologies to choose from, disconnection from the city centres, and lack of urban infrastructure and services at the

moment of deliverance. However, there were main differences that actually have had an impact on the everyday lives of social housing beneficiaries. These include the size of housing that has been dramatically reduced since the 1990s, the construction quality and methods utilised that economically and practically hinder further modifications to the houses, and the cost of housing in the long term. The stratification of credits in accordance to workers' income on the other hand, has mostly trapped low-income workers into a type of housing design to less than the minimum.

The following chapter will answer the third and last question posed for this research 'How is 'social' being experienced by residents in social housing developments?', focusing on the analysis of the dimensions of housing during the habitation process identified by Villavicencio (1996) and Villavicencio and Durán Villavicencio and Durán (2003) as part as their methodological proposal.

CHAPTER 7

THE EXPERIENCE OF 'SOCIAL' BY SOCIAL HOUSING RESIDENTS IN MAZATLÁN, MEXICO

INTRODUCTION

The last question of this research 'How is 'social' being experienced by residents in social housing developments?' will be addressed in this third and last empirical chapter. It will be answered by analysing the dimensions of housing during the habitation process, relying upon three of the five dimensions of housing identified by Villavicencio (1996) and Villavicencio and Durán (2003) that will be explained below, as part of a methodological proposal for analysing social housing after the occupation of the dwellings. Based on the latter proposal, this chapter will elaborate on those dimensions exploring and analysing the different layers identified in each dimension as a result of the empirical data analysis, focusing on the residents' experiences of the four case studies selected for this research and arguing for the importance of the study of the post-occupancy process of housing.

As explained in Chapter 4, this research is based on Villavicencio's (1996, 1997) methodological proposal, and Villavicencio & Durán's (2003) further development of the dimensions of housing as the means for a better and more in-depth understanding of social housing in Mexico. Furthermore, as mentioned in Chapter 4, this research draws on two of the five dimensions identified by the authors, the physical and the social, since it is one of the main interests of this study to understand the way architecture frames the everyday lives of people at a micro-scale, and how the actual physical characteristics of the constructive methods used and the architectural layout of the houses can hinder or facilitate desired modifications to the dwellings. The consideration of the above-mentioned authors' dimensions was not employed as the 'ultimate' definition of each, but rather as areas of study with the potential for a more in-depth and broader interpretation through the addition of layers of meaning.

Despite the focus on only two of the five dimensions, there were layers identified in each of the two dimensions analysed that overlapped with the urban, economical and administrative dimensions, and that will be acknowledged during the analysis. At the end of this chapter a temporal dimension will be analysed as part of the contribution of this research to the dimensions of housing, the research on housing and to the methodological approach of Villavicencio and Villavicencio & Durán.

Section 7.1 will focus on the social dimension, broadening the economic and demographic scope posed by Villavicencio & Durán. Drawing on the analysis made of the concept of 'social housing' and 'housing for workers' in Chapter 5, and the experience of residents living in the social housing developments selected as case studies, the social dimension will be analysed identifying additional 'layers', in addition to the socioeconomic scope identified by Villavicencio & Durán. These layers include the meaning of home in the context of social housing beneficiaries, and the meaning of 'social' in social housing, the extent to which social housing programs include or exclude the most vulnerable parts of the working population.

Section 7.2 will analyse the spatial dimension of housing, focusing on the architectural design of the dwellings, their internal distribution and construction methods and materials. It will elaborate on Villavicencio & Durán's focus on the physical characteristics and typology of the houses and the activities the internal distribution of the dwelling allows. For this dimension, the designers' and developers' values and assumptions behind the design process will also be explored and analysed from both the designers' and residents' perspective. Similar to the social dimension, additional layers to those identified by Villavicencio and Villavicencio and Durán will be identified and discussed, revealing a conflict between the residents' spatial needs in relation to housing, the values and assumptions of designers, and the actual design and construction regulations. Despite the focus of the spatial dimension for this research was on the micro scale (the houses' architectural design) in the first place, the urban dimension constantly emerged during the interviews, which was acknowledged and included in the discussion of this section.

Section 7.3 will present the temporal dimension of social housing identified in this research, highlighting the importance of the analysis of the different dimensions of housing identified by Villavicencio (1996) and Villavicencio and Durán (2003), while simultaneously considering the evolution of residents' lives through time. The analysis of this dimension revealed that the changes in the personal lives of residents had a direct effect on their spatial needs and expectations, which highlights the importance of the post-occupational study and assessment of housing and the physical and spatial flexibility of social housing design.

7.1 SOCIAL DIMENSION

This section will elaborate and develop on the definition of the 'social dimension' of housing provided by Villavicencio (1996) and Villavicencio & Durán (2003). Following the principle of analysing housing and its dimensions as multi-layered realms, this section will

attempt to take a step back from exclusively looking at the socio-demographic and economic characteristics of the residents to analyse the meaning of 'social' in social housing from the residents' perspective and the contrast of their ideas with professionals' points of views and values during the planning and design process, and to identify additional elements that form the social aspect of housing.

First, based on the definitions of 'social' discussed in Chapter 5, the meaning of home from the perspective of social housing beneficiaries will be discussed as part of the human scale of 'social', which as it will be argued in this section, is neglected during the housing production process according to people's testimonies.

Secondly, as well as argued in Chapter 5, social housing became an exclusive right in the 1917 Mexican Constitution, and reserved for those with a formal job. Despite the selective nature of housing as a right, the inclusion of housing as part of a social provision programs aimed to benefit the most vulnerable parts of the working population. This section will focus on the meaning of 'social' as aid for low-income workers from the residents' perspective, analysing the impact of having access to a social housing unit on their everyday life.

7.1.1 THE MEANING OF HOME (OWNERSHIP)

As discussed in the previous section, home ownership embodied different meanings for residents, from a phenomenological perspective (i.e. a place in the world, a social goal) to a more practical point of view (i.e. a long-term investment, an economic patrimony). The different definitions that emerged from residents' testimonies show the importance of home ownership as a way for improving, not only their lives but also, their children's.

The concept of 'social housing' and 'housing for workers' explored in chapter 5 referred to the definition of 'social' in legal documents when addressing housing and housing policies in Mexico, and the change of it over time. The attempt of benefiting the most vulnerable parts of the working population at least during the first decade of the INFONAVIT era, although in a selective manner, attributed social housing a social character for those in real need for a home.

Although it was impossible to identify an ultimate definition of 'social', it became clear that the ideas of 'social housing' and 'housing for workers' have a direct relation through the definition of housing as a social right and social utility accessible to workers as employment benefits. Additionally, what makes the definition of 'social housing' so difficult is the application of this concept over time in response to local and global trends in politics, economy and history.

Despite the concept of 'social housing' consistently being used to refer to housing for workers, the types the credits provided and the characteristics of available housing have changed over time along with the social housing beneficiaries' experience in and perception of social housing. In addition to asking residents about their definition of house, which will be discussed in the following section of this chapter, they were asked to reflect on the concept of 'social' in social housing. Regardless of the housing development where the residents were living, for the majority of residents the concept of 'social' in social housing embodied ideas of housing tenure, quality of life's improvement, and the house as a long term investment or a patrimony.

One of the most important changes in housing policies after the creation of INFONAVIT, was giving workers the opportunity of having access to home ownership, which was not available as part of the state housing programs previous to the foundation of the institute, and represented the fulfilment of an aspiration deeply rooted in Mexican culture, which is to own a house (Esquivel et al., 2005).

The idea of home ownership is closely linked to the meaning of home. The home provides stability and "the confidence that most human beings have in the continuity of their self-identity and in the constancy of their social and material environments" (Giddens, 1991, p. 92). According to Saunders (1990), home ownership provides individuals with the tools for achieving what Giddens calls 'ontological security', a state in which people are aware of their place in the world and society, and represents continuity and routine (Giddens, 1991). In a later work, Saunders and Williams (1988) claimed that the meaning of home is a reflection of the society around it but carrying and denoting a wide variety of cultural meanings, which also, must be placed into context for "[understanding] the long-standing, national preoccupation with land and home ownership and its economic, ideological and political importance" (Dupuis & Thorns, 1998, p. 26).

Owning a plot and the possibility of a house provided a sense of confidence and trust, what could be comparable to the feeling of 'being-in-the-world' (Giddens, 1991), or the means to achieve a sense of belonging and stability (Kellett & Moore, 2003) and contrasting to the feeling of having a flat in an apartment building instead, described by Alejandra (Int@InJa, 01.12.2012) as being like to "own air". Alejandra initially obtained a flat from 'INFONAVIT El Conchi', another INFONAVIT development built around the same time than 'INFONAVIT Jabalíes' at the end of the 1980s, which included four-storey buildings.

"It felt so nice [to have bought a new house]. Otherwise, it meant paying rent, risking it to be asked to move out by the landlord. You lose a lot when you have to be moving around from house to house. [...] but now, I thought, the house is mine! " (Alejandra, Int@InJa, 01.12.2012).

She preferred to go for a single-family dwelling for achieving a sense of independence and individuality, and for avoiding conflict with neighbours, which according to her is very common when living in flats. The latter testimony resonates with Archer's idea of home and land ownership, or private property, related to "one's freedom, individuality and autonomy far more closely [than] with engagement in the surrounding community" (2005, p. 296), which is present in his analysis of the role of home ownership in the 'American dream'.

Also in relation to the 'American dream' concept, Rank, Hirschl, and Foster (2014) found that United State citizens perceived owning a home as a synonym of feeling secure and comfortable due to having "something over your head, your [own] roof", and resonating with the United States' agrarian origins "in which land ownership was considered a democratic ideal" (Rank et al., 2014, p. 42), a similar claim made by the Agrarian Reform movement in Mexico in 1915, when the first Agrarian Law was created for dealing with the unequal distribution of land carried out since the 19th century inspiring the Mexican Agrarian Reform. The Mexican Revolution ideology of article 27 and the Agrarian Law aimed to benefit the general population over the particular interest of a few individuals or groups (Hernández Gaona, 1991, p. 85), allowing the most marginalised to have access to land property and turning land into an asset available to everybody.

Beyond Giddens' concept of ontological security (1991) and the phenomenological interpretations of the built environment, the house was constantly referred also as a valuable asset in economic terms. For Amparo and Alberto, a couple in their mid-fifties living in 'INFONAVIT Jabalíes', having acquired their own home in 1988 meant "something that [didn't] keep [them] up at night", but also that "not paying rent [was seen as] a life incentive" that allowed them to have something valuable to inherit to their children. For Berta and Braulio who live in 'Prados del Sol' built in the year 2000, the house was acquired thinking in the future of the child they were planning on having as soon as they moved in 2007.

The link between home ownership and economic patrimony was brought up by almost a quarter of the interviewees regardless of their age or gender, or the housing development

they were living in, showing the importance of home as an economic patrimony, long-term investment and an asset of on-going value.

The latter link between property and inheritance in Mexican society has been studied in informal settlements in Mexican communities (Grajeda & Ward, 2012; Ward, 2007, 2011, 2014), where the house although illegal, is an important asset that has on-going use value at the same time as potential exchange value (Ward, 2014). As well, although it might look like an oxymoronic construct when studying poor and informal urban settlers, housing inheritance is one of the main motivations for investing time and money in their built environment; informal squatters acknowledge the risks and problems of homelessness and hope for the 'regularisation'[19] of their housing status, which would allow them to "create a home in which to raise their family and to get a foothold in the property market" for having something they can inherit to their children (Grajeda & Ward, 2012).

Although in the case of social housing the concept of informality is inexistent, there is a notion of moving upwards when acquiring a new house; a transition that, instead of happening from an informal to a formal status, or from an informal squat to a formal settlement, is evident from renting and living with relatives, to becoming independent and having a house of their own.

> *"We thought it was really cool since we were just married and it was going to be our own new house! We wouldn't be paying any rent anymore and it was going to be our patrimony. The improvements we made to the house from then on were going to be on behalf of our children and in something that belonged to us." (Bernardina, Int@PrS0, 21.01.2013)*

> *"We had a lot of dreams but first of all, we weren't going to keep living with my mother–in-law or to have to rent somewhere else. We were finally going to have our own house." (Benjamín, Int@PrS0, 14.12.2012)*

For residents, home ownership embodied meanings at a phenomenological level, representing a place in the world and a proud face to show to others, and to "[en]gage [with

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[19] *A term commonly used in Mexico for describe the transition from informality to formality not only in housing but also in commerce. In relation to housing, it refers to the provision of services and legal titles from the government to informal squatters, usually after a certain period of time or for obtaining political support.*

the culture that binds into society" (Kellett & Moore, 2003, p. 126) through the relationship between them and their homes. It is a social goal and social housing beneficiaries see it as a point of departure for a new life in which they will invest time and money on behalf of their children. Aside from the phenomenological interpretations of home not exclusive of social housing, viewing the transition to home ownership as a starting point makes residents aware of the importance of a solid beginning in the form of a good material quality of housing.

7.1.2 A MARGINALISING SOCIAL RIGHT

As discussed in Chapter 5, housing became a selective right when it was first identified as a social benefit for the employed. This meant to leave the unemployed legally unprotected when aiming to have access to 'comfortable' and 'hygienic' accommodations. Nevertheless, despite the selective nature of the right to housing, within its scope and after the creation of INFONAVIT in 1972, priority was given to low-income workers from the private sector in the distribution of social housing. Although the production of it was controlled to a certain extent by unions, which made the right to housing even more exclusive, labourers earning the minimum wage were actually benefitting from social housing programs, allowing them to buy housing at low rates.

As discussed in Chapter 6, the options within housing designs and housing projects' locations was limited, leaving workers to choose from within a few typologies (i.e. multi-family, duplex or single-family dwellings) and depending on the city they lived, within one or two housing developments usually still under construction and located on the outskirts of the cities. The mentioned lack of options was one of the critiques of the pre-neoliberal era of social housing in Mexico, and there were attempts to overcome these through the 1992 neoliberal reforms that allowed the participation of the private sector in the production of housing, and the diversification of housing credits that would widen the scope of beneficiaries in accordance to their income.

From the residents' perspective, the idea of 'freedom of choice' brought by neoliberalism in regards to workers options was constantly challenged when observing that in practice, the diversification of credits only stratified the working class and pushed low-income workers to housing developments still built on the outskirts of the cities, but now with the minimum spatial and material standards in regards to housing. The illusion of choice, and what was offered after 1992 in comparison with what was being offered in 1988, led residents to feel marginalised, disempowered, and resigned.

Marginalised choices

For some residents, freedom of choice was acknowledged not as an idea for them to improve their quality of life, but as an illusion used by governmental authorities and developers for delivering what is more convenient to their interest and not for workers' wellbeing. Just as Danaé and Daniel who live in 'URBI Villa del Real' (2009), a young couple that despite not being able to 'aspire' to a larger house, the developer company gave them the opportunity of 'choosing the house they liked' from a group of ten identical houses in 'URBI Villa del Real', other residents living in post-neoliberal reform developments revealed that they faced similar circumstances when looking for a new house.

Interviewees from 'Pradera Dorada' and 'URBI Villa del Real' built in 2007 and 2009 respectively, declared that although they could choose, they did not consider as viable the options of housing developments that were too far from the city centre like 'Santa Fe', a housing development in Mazatlán and considered as a potential case study for this research, but discarded due to the safety risk it represented for the researcher.

The construction of 'Santa Fe' started in 2004 by HOMEX, one of the main producers of social housing in Mexico, and along with 'Pradera Dorada' and 'URBI Villa del Real' one of the largest social housing developments in the city of Mazatlán with more than six thousand dwellings. 'Santa Fe' is located away (Figure 15) from the city centre, a characteristic of new housing developments that also 'Pradera Dorada' and 'URBI Villa del Real' have. However, the latter two are located in what is still considered the outskirt of the city, whereas 'Santa Fe' was built completely disconnected from the city's urban limits.

The consequences of urban location of the housing developments will be discussed in detail in section 7.3, however here it is argued that freedom of choice is being disguised as social housing projects with identical housing typology and price, only differentiated by the location of the development in relation to the city centre; regardless of the construction company designing each social housing complex, the size, cost and material quality of housing is the same. Despite the price and typology of housing being the same, there are consequences that resulted from the poor location of housing that over time are reflected in the added value of housing.

Figure 15. Location of (A) 'INFONAVIT Jabalíes', 1988; (B) 'Prados del Sol', 2000; (C) 'Pradera Dorada', 2007;(D) 'URBI Villa del Real', 2009; and (E) 'Santa Fe', 2004 in relation to the city centre
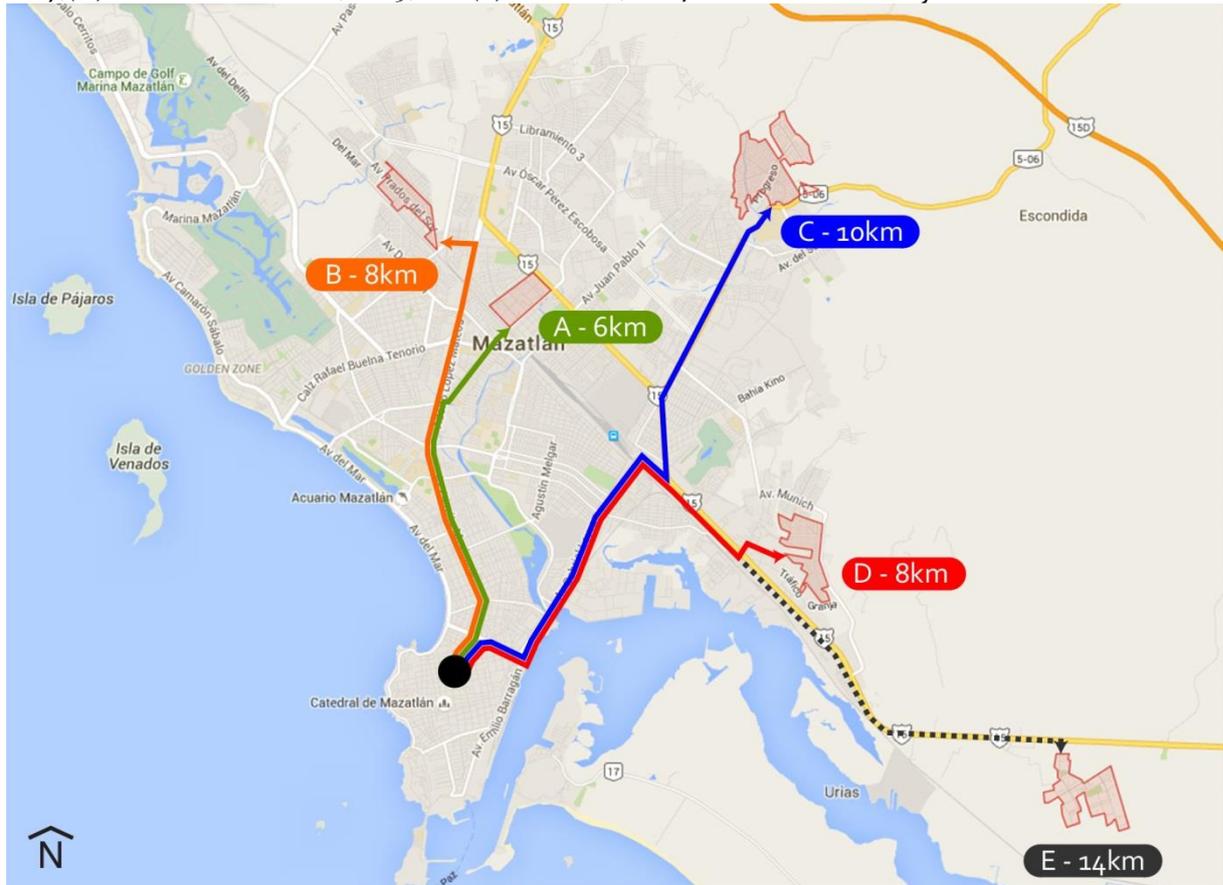
Source: Developed by the author (2015)

The location of social housing developments is determined by the cost of land, but also influenced by urban development plans at a municipal level. In the case of Mazatlán, the areas in the northwest of the city are destined for middle- and high-income residential projects, due to the proximity of high-end tourist areas. The north- and south-east sides are earmarked for the allocation of mostly low- but also middle-income housing, areas of the city where 'Pradera Dorada' and 'URBI Villa del Real' were built, surrounded by old troubled neighbourhoods and informal settlements and particularly in the case of URBI's development, close to the municipal dump.

As observed in Figure 15, 'Santa Fe' is not only located in the east part of the city but also completely disconnected from the city limits. Its location and lack of public transport options was acknowledged by the Subdirector of Planning (Int@CITYCOUNCIL, 13.01.2013) as the main reason for half of its housing stock being unoccupied and abandoned, making it prone to high levels of delinquency and perceived as an unsafe settlement and an urban failure (discussed in section 7.3). However, this development is part of the different 'options' from

which low-income workers can choose, apart from 'Pradera Dorada', 'URBI Villa del Real' and other smaller housing developments built around the same time.

"I was offered a house in 'Santa Fe' in my previous job but I thought it was too far and said no. My wife and I preferred to wait as long as it was necessary for her to have enough points for a house somewhere else with her own credit. [...] Can you imagine leaving your job at night and arrive at 10 or 11 at night to a development like that one? Definitely not." (Caetano, Int@PrDo, 02.02.2013)

"People reject houses in 'Santa Fe' because is too far. Maybe more than half of the development is empty. Some houses are occupied by illegal invaders, some are legally occupied but by people who work during the day and while they're away, their houses are robbed. [...] My niece lives there and had to put steel protections in doors, windows and over her back patio, like a bird cage. It's a doomed place! Can't understand how [the construction company] keeps building more houses there." (Carmen, Int@PrDo, 07.02.2013)

Other residents interviewed in 'Pradera Dorada', acknowledged that their options were limited to only a couple of developments from which they could choose only in accordance to the location. They revealed an awareness that the product they are being offered in relation to architectural design, material quality and price does not vary from developer to developer and the only asset they can focus and invest on, is the location of the housing development, which as mentioned above in the case of social housing is inherently disadvantaged.

The urban location of social housing developments is decided prioritising land costs over the needs of residents, pushing as Power and Wilson (2000) argue, vulnerable groups to the least popular areas of the cities, while creating the feeling of segregation and exclusion. Although satisfying the need for housing, the planning strategy used on social housing may be replicating what Rodríguez and Sugranyes (2004) identify as the problem of "those with a roof", referring to the potential problems caused through housing solutions without taking into consideration of the social and urban consequences of the physical production of housing. These problems related to the location and urban infrastructure of settlements, may be turning social housing projects into ghettos, suffering not only urban and spatial deterioration, but also a social one (Paquette & Yescas, 2009).

Disempowerment

The majority of residents in old and new developments declared that they felt happy when they acquired their new house, a feeling closely linked to the achievement of the homeownership status discussed above. Nevertheless, despite achieving homeownership, they still felt they deserved better in terms of physical quality and urban location, but the lack of options left them feeling disempowered.

In 'INFONAVIT Jabalíes' built in 1988, all thirteen interviewees declared to be satisfied with the development at the moment of the interview. The elements they referred to be happy with included having services and amenities close or within walking distance to the development, being well connected to the city centres, and close to main avenues, and having modified the house according to their taste. Similarly, in 'Prados del Sol' built in the year 2000, participants mentioned the advantages of having main avenues and public transport options that allowed them to move easily to the city centre, to have services and facilities close to their neighbourhood, to feel that their neighbourhood became a safe place, and to be surrounded by housing developments of higher economic status.

Nevertheless, the features highlighted by the interviewees in both projects mostly referred to characteristics that the developments acquired over time and over which they have no power. Those features do not exist when the housing settlements are first finished and are precisely the things residents from the more recent developments 'Pradera Dorada' and 'URBI Villa del Real', complained about.

The houses on the other hand, are the features of housing over which residents are supposed to have power. The dwellings are thought to be a starting point for residents, allowing them to modify them according to their needs and taste. Nevertheless, the power residents have over their homes is directly determined by their economic power (i.e. income, savings, and expenses) and the material quality and design of the house (i.e. adequate foundations for extra storeys, flexible internal distribution). The latter two features come hand in hand, since even simple modifications or enlargements made to the house represent big investments for workers with limited income.

There were characteristics of the house right after its delivery mentioned by interviewees (i.e. size, material quality, location within the development) as features that drew their attention. In some cases the latter features were planned to be improved or modified, although in many cases it was not possible to achieve those objectives. The mentioned features

related to the physical characteristics of the house will be discussed in the following section about the spatial dimension of house. However as part of the social dimension, what it is relevant is residents' perception at the time of the interview, that except in a few cases that declared to have achieved all they wanted to modify in their homes, the majority of residents mentioned felling dissatisfied with their homes and simply resigning themselves to its qualities.

Resignation

In 'INFONAVIT Jabalíes' and 'Prados del Sol', residents interviewed had been living for 25 and 12 years respectively at the time of the interview. Based on what was observed during visits to both developments, the amount of houses with visible modifications (e.g. porches, room extensions to the front, second storeys) was not as considerable as those without changes. However, the lack of modifications that could be interpreted as residents satisfied with what they had, turned out to be in the majority of the interviewees, residents that had planned to modify their homes as soon as they moved in or had children, but found themselves unable to achieve their objectives and were forced to accept their homes unmodified.

Contrary to the urban location and infrastructure, the houses are the features of housing over which residents are supposed to have power. The feeling of resignation emerged from not having had the economic capacity for enlarging their dwellings in order to have more space and privacy after having children. Despite acknowledging she would like to have been able to adapt their houses in accordance to her family's needs and taste, an interviewee declared that aspiring to more than what they got is clearly out of their reach, and after twelve years of living in 'Prados del Sol' with other four members of her family, they have found the way to use the limited space they have.

> "*Bárbara: We go used to be all piled up in those two little rooms. It is uncomfortable, indeed. In one room we have a computer and when [my children] are watching videos, we cannot watch TV... but like I said, we got used to it. [...] Of course I'd avoid this! I'd build another room for the computer so they have a place for using it...*" (*Bárbara & Belinda, Int@PrSo, 10.12.2012*)

The main reason for not modifying their houses to their desired full extent was the lack of money that despite the time living there, they never managed to save enough. As families grew, other priorities (e.g. house payments, births, children education) forced them to postpone and finally resign to what they had.

Similarly in 'Prados del Sol', the majority of residents shared that feeling of conformity with what they had after twelve years of residing in the development. However, some of them still express a strong desire for improving their dwellings if they have the chance. Age could be playing a role in the relationship between conformity and aspirations. In 'INFONAVIT Jabalíes' the average age of the interviewees was around 50 years old, many of them with children and even grandchildren. In 'Prados del Sol', participants are in their mid- or late-thirties, with small children and still hoping to be able to achieve their objectives.

In contrast, residents interviewed in 'Pradera Dorada' (2007) and 'URBI Villa del Real' (2009), who are mostly young couples in their early- or even late-twenties, still see the negative aspects of the development in relation to the location and lack of urban infrastructure and consider the potential modifications to their homes as something they will be able to do in the short term.

As reviewed in Chapter 3, one of the meanings of home includes the idea of having control over the physical surroundings that frame our everyday life and express ourselves through the modification of it (Sebba & Churchman, 1986; Watson & Austerberry, 1986). The feeling of resignation emerged from not having had the economic capacity to enlarge their dwellings in order to have more space and privacy after having children. Despite acknowledging that they would like to have been able to adapt their houses in accordance to their needs and tastes, interviewees try to look at the good side.

7.2 THE PHYSICAL DIMENSION

Villavicencio (1996) defines the physical dimension of housing as the 'spatial outcome' of social housing programs in her methodological proposal. The main focus of the latter definition is on the daily activities the mentioned outcome allows its inhabitants paying particular attention to the physical characteristics of the built environment (i.e. size of the developments, common use areas within the projects), and the type of activities that shape the everyday life of the residents inside the home and within the development. In further works, Villavicencio (1997) and Villavicencio and Durán (2003) identified problems within the physical dimension in social housing referring to overcrowding, reduced size of housing and

spaces of the house simultaneously used for different activities (Villavicencio, 1997). The problems identified in this dimension were also in relation to the development; the lack of maintenance and in some cases, lack of presence of common use areas, as well as the location of the developments in relation to the city centres (Villavicencio & Durán, 2003).

In Villavicencio (1996) and Villavicencio and Durán (2003) the house is analysed as an object that to some extent determines the everyday lives of residents. However, the latter approach emerges not from the theoretical stand of the authors, which is not deterministic, but from the type of social housing analysed, which is not single-family housed but flats. Although the residents are the owners, modifications to flats (e.g. spatial enlargement, adding or sub diving rooms) are not possible and spatial personalisation is limited to interior decoration or furnishing.

For this research, the approach taken for analysing housing considers a two-way dialogue between people and their built environment, discarding a deterministic approach to the analysis of the physical surroundings and its relationship with residents, as presented in Chapter 3. The latter approach is important for this research since in the case of the housing typology analysed within the case study, the houses are supposed to represent an economic patrimony but in addition, a starting point of physical development of the house for social housing beneficiaries.

It was argued in Chapter 6 that the current design process of social housing is based on a minimalistic approach in relation to the construction costs, speed of delivery, and space occupied for social housing. Furthermore, that this minimalistic approach to the design of housing has not been exclusive of post-neoliberal reforms; during the post-war years, there was in Europe a look to the satisfy the demand for housing as part of the reconstruction of cities, looking for an effective way for achieving the latter, minimising costs and space.

This section analyses first, how the concept of 'design to the minimum' in social housing has changed since before the 1992 neoliberal reforms and will argue that as an architectural design criteria, it has been transformed in order to reduce construction costs and speed of delivery at the expense of residents' needs with regards to their homes. It will include a description of the nature of social interactions in an environment designed to the minimum within the home. Secondly, the design and construction approach in social housing will be analysed, arguing that developers hold a strong deterministic approach to the design of housing developments and the houses.

7.2.1 DESIGN TO THE MINIMUM

As discussed in chapter 5, housing credits and housing needs correspond with design regulations, quality standards and construction specifications established by the housing institutions that provide the credits (Gómez Serrano, Valdivia, & Sifuentes, 1998). The criteria established by INFONAVIT and other housing institutions in relation to the size of housing, also correspond to what is stated in construction regulations. Therefore, the minimum size of plots, houses and construction costs defined by INFONAVIT, leave designers with specific requirements to fulfil. Following the current regulations, plots are required to be six metres wide by fifteen metres long, with a total of 90 square metres, and houses are required to have two bedrooms and a bathroom in spaces separated by walls, and a space for a kitchen, a dining and a living area.

The minimum size of plots has not changed since the 1980s, but the size of housing has. As discussed in the previous section, the size of a social housing unit for low-income worker was 58 square metres in 1988 as those found in 'INFONAVIT Jabalíes' and decreased to 38 square metres in 2012. In the case of the design specifications followed for 'INFONAVIT Jabalíes', the house and plot size restrictions were already considered to be "something that didn't leave much to do" for a 90 square-metre plot, only allowing some variations placing the kitchen at the front or in the back (Official, Int@INFONAVIT, 12.12.2012). Despite the latter, houses were designed thinking of the provision of extra space as an antechamber where it was possible for the allocation of stairs in the case of extending the house to a second storey (Figure 16).

The design to the minimum back in 1988 that considered the idea of a "house and piece of land for every worker" (Official, Int@INFONAVIT, 12.12.2012), was based on a structural design that used red clay brick walls and reinforced concrete slabs, foundations and supports. The three case studies selected apart from 'INFONAVIT Jabalíes' and built in 2000, 2007 and 2009, were constructed using reinforced concrete supports but hollow concrete blocks instead of red clay bricks, and prefabricated slabs. This method is used in the vast majority of mass-produced housing developments, regardless of the income level of the population targeted. This leads to houses where the 'shell' is of the same structural and material quality in high-, middle- and low-income developments, only differing in the type of finishing materials (e.g. floors, plasters, windows) and in the size of housing. The latter variation is not constant from one type of housing to the other; middle-income housing developments containing 38 square-metre houses are sold at higher prices, up to 350 thousand pesos (±£17,500), just due to having

more expensive finishing materials and better location, features that will be analysed and discussed in section 7.2.2.

Figure 16. Furnishing and calculation of 'liveable' area excluding circulation areas in 'INFONAVIT Jabalíes' (1988), and in 'Pradera Dorada' (2007) and 'URBI Villa del Real' (2009)

	A	B
1. Kitchen	4.72m²	3.97m²
2. Living area	10.54m²	10.44m² *
3. Dining area**	8.33m²	-
4. Antechamber	4.00m²	none
5. Bedroom (each)	8.83m²	8.20m²
6. Bathroom	3.61m²	3.14m² ***

* *Living and dining area calculated as one*
** *In A fits a 120cm round table, while in B only a 90cm round table*
*** *Although it is not confined by walls, the area around the sink was considered as part of the overall bathroom area*

A. Infonavit Jabalíes (1988)

Furnishing for 4 people in 58m²

B. Pradera Dorada & URBI VIlla del Real (2007 & 2009)

Furnishing for 4 people in 38m²

Source: Developed by the author (2015)

There are technical and cost advantages and disadvantages between red clay bricks and hollow concrete block that are the main argument for choosing between one method and another in mass-production. Brick-based construction methods allow flexible criteria for channelling walls for the placement of electrical, drainage and water installations. The combination of reinforced concrete structural elements (i.e. foundations, vertical and horizontal supports, slabs) and brick-based system in the houses built by INFONAVIT, allowed the construction of a second storey by just connecting the new structure to the original one and without reinforcing slabs.

In terms of cost, brick-based structures require more mortar for binding each brick and the use of vertical supports and slabs made with reinforced concrete contained with formwork, which needs to be left in place for 28 days before removing the supporting moulds from these

the structural elements, making red bricks a more expensive option than concrete blocks (Figure 17).

Figure 17. Red-brick wall and reinforced concrete supports
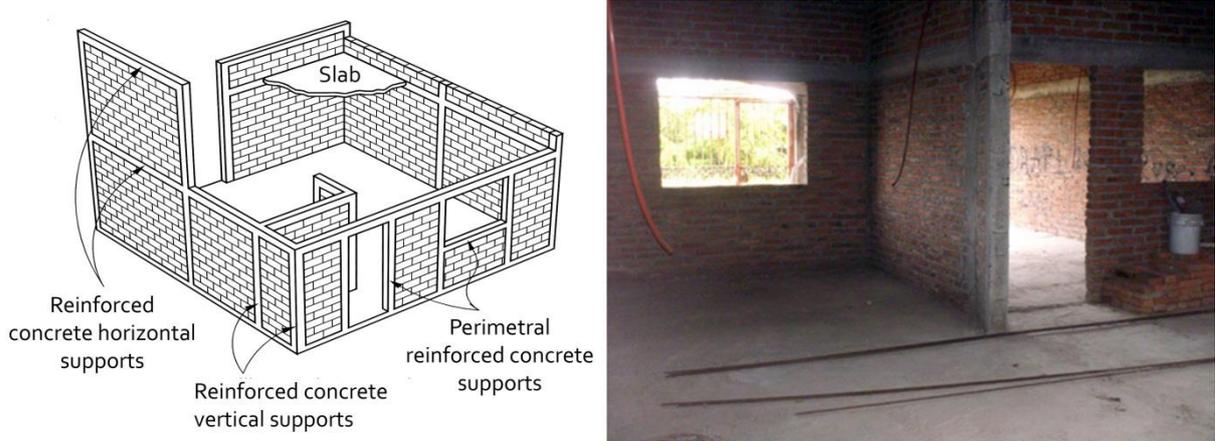
Source: Left image, NTC (2004) left image, translated by the author; right image sinaloa.quebarato.com

The latter is due to the installation of hollow blocks being faster since the block cavities work as formwork when filled with concrete. Blocks diminish the amount of mortar used for binding each element and the possibility of placing pipes, installations and structural reinforcements through the hollow spaces. In terms of flexibility, the slotting of blocks becomes very difficult and installations have to be placed at the same time that the wall is being constructed and provide limited flexibility in further modifications (Figure 18).

Figure 18. Hollow concrete wall, and wall under construction showing installations and reinforcements
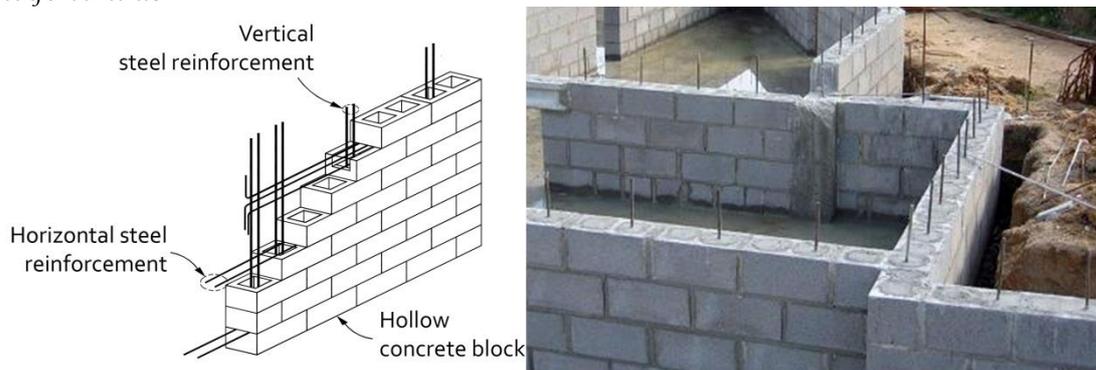
Source: Left image, NTC (2004) left image, translated by the author; right image bloqueshuecosmichoacan.mx

Despite limitations on or over the placement of installations, blocks have technical advantages that are significantly reflected in the construction costs. Nowadays, a social housing unit would not be affordable given the drive for profit-making, if it was not for these savings. However, the savings in mass-produced housing do not respond only to the use of blocks, which is per se an effective construction method that can provide the same structural

resistance and durability as brick-based systems. For construction companies to fit within the cost limits stated by INFONAVIT, apart from the use of blocks there are parts of the structure that have to be taken to the limit of time construction and cost constrains.

Slabs are no longer monolithic concrete elements capable of carrying the weight of a second storey, but prefabricated systems of concrete joists and polystyrene vaults whose only purpose is to cover the house (Figure 19). The prefabricated construction method is fast to install and creates a light roof, releasing walls from carrying the weight of a concrete slab, which also allows simpler foundations systems, such as thin concrete compression slabs. All the latter certainly permits a cheaper and faster housing production, but at the expense of residents' material and physical needs through time. In addition, the use of polystyrene in roofs provided residents with the feeling of having a 'fake' or fragile house.

Figure 19. Concrete joists and polystyrene vaults used with hollow blocks

Source: construydeas.com

Despite the technical advantages of concrete hollow blocks and the wider use of it in housing construction in Mexico, concrete block houses are seen as a representation of a style of life or a social group. Much of the informal settlements built in the outskirts of the cities consist of houses constructed with hollow blocks, which are built in stages. These informal

developments are easy to identify by the grey colour of its walls and roof, permanently waiting to be covered with stucco or paint.

This carries a strong cultural and social meaning for people who perceive hollow brick houses as poorly constructed buildings associated with poverty and marginalisation (Plate 25). Residents appeared to prefer houses built with bricks and mortar, referring to them during the interviews as 'real houses' or 'houses the way they're supposed to be' and complaining about the difficulties of having walls made with concrete block.

Plate 25. Irregular settlement in Mexico City.

Source: ProtoplasmaKid/WikimediaCommons

This nuisance is aggravated by the fact that some of the new houses are delivered without stucco or plaster on the interior walls that are covered only with paint. Nevertheless, some of them were not aware that the construction system used in their homes would not allow them to directly build over the existing construction, a feature registered in the architectural drawings they obtained after they bought the house (Appendix B), but which most residents were not capable of interpreting. The information provided by URBI is A4 size printouts of the architectural layouts of a typical house, using a technical visual and written

language easy to understand by architects or constructors but not residents, which for this research was obtained directly through URBI in the city of Mazatlán, but was also possible to observe in possession of only two interviewees in 'URBI Villa del Real'.

The foundations of the house therefore represent a problem for residents who aim to add an extra room or an extra storey. Since the foundations are designed for supporting the weight of a 'light' house, any addition to the structural capacity of the construction requires the development of a new structure from foundations to slabs. The structural elements of almost every type of construction can represent up to a quarter of the overall cost, which for residents represents an obstacle most of them are not able to overcome. Apart from revealing the assumptions behind the physical design of housing, the latter highlights a problem detected in the temporal dimension of housing, which will be discussed in the last section of this chapter.

The assumptions behind the design process are that construction companies are actually offering a good quality starting point for further physical modifications and any problems related with the modification to the building refers to the lack of knowledge of the freelance construction workers that residents hire (Construction Site Supervision Team, Int@HOMEX, 28.11.2012; Technical Manager, Int@URBI, 28.02.2013). Freelance construction workers interviewed on the other hand, although agreeing on concrete block and thin slabs being a faster construction method, challenge the idea of the construction system used by construction companies in recent years to be flexible and efficient.

"When you use mat foundations and you need to build something new, you need a new isolating footing system for the new structure and for that, you need to break and cut the steel mesh of the mat. [...] The mesh is the most basic one, very thin and not thick enough to weld proper steel rods for linking the new with the old foundations. I've seen houses where additions have been made without using footings and relying upon the strength of the mat; just the weight of boundary walls breaks the concrete and plucks the mesh." (Freelance Construction Worker, Int@PrSo, 26.01.2013)

In addition to the complications with the foundation system used by private construction companies, construction workers considered the red clay brick to be the best alternative for building housing. The use of reinforced concrete supports, slabs and foundations is acknowledged to be more expensive and take more time, but in the long term to

provide better construction quality and constructive flexibility. Brick-based systems were described by an independent construction worker with over fifty years of experience as 'the old fashioned' and 'proper way' of doing houses (Freelance Construction Worker, Int@PrDo, 20.02.2013), and who has worked in old and new developments such as 'Pradera Dorada' modifying and enlarging dwellings while working directly for the residents.

> *"The new houses are cheap because you can see the brick layer frantically placing blocks! In a week they're involved in two or three different houses [...]. But you also realise why they're cheap when you're breaking something for a modification. You can see the quality of the concrete they use, which is very sandy and gritty, revealing a very poor resistance. Not like in the past, when you used proper sized gravel. Now, it only takes a hammer blow to break things." (Freelance Construction Worker, Int@PrDo, 20.02.2013)*

Concrete is prepared with cement, gravel, sand and water in its most basic form, but additives can be added for accelerating the curing of concrete. Depending on the proportion of the ingredients used, concrete ends up with a higher or lower resistance factor, a variable useful to consider for different constructive elements of the loadbearing structure; the more sand and gravel, the less resistant the concrete will be.

Construction companies can hire the service of concrete factories that supply them with ready-to-pour concrete in trucks. However, other construction companies produce their own concrete *in situ*, as observed in 'Pradera Dorada'. One of the disadvantages of *in situ* concrete is that it does not permit a uniform quality of production; construction workers can be as attentive or dismissive in relation to the preparation of the concrete as the company's supervision. During the construction of a housing development, workers are organised into parties, each one responsible for a certain amount of houses, and for the tools and construction materials used. Without strict supervision and quality control, construction workers can deliver low material quality of concrete for example avoiding extra trips to the construction site warehouse for extra sacks of cement, as reported by one independent construction worker interviewed who had experience working for a high-income developer company in the city of Mazatlán:

> *"Some construction workers will use a sack of mortar if it's at hand instead of making a trip for more sacks of cement to the warehouse and look for the supervisor so you get his*

approval and find a truck for taking the sacks where you need it and maybe losing an hour in the process. They think, I'll get paid anyway and the developer company will sell the house anyway." (Freelance Construction Worker, Int@PrSo, 26.01.2013)

The same interviewee complained about the low wages paid by developers to construction workers and the superficial supervision made by companies, which overlook quality for quantity also pushing workers to fulfil their daily quota of jobs finished within the construction site in tight amounts of time. An example of the materialisation of the latter is observed in water or drainage pipes occluded with concrete; if pipes are not properly joined before pouring concrete over them, the mixture gets inside clogging them. Each task – the pouring of concrete and the installation of pipes - is developed by a different set of workers – cement masons and plumbers. It is the responsibility of plumbers to check that pipes work properly before the pouring of concrete, which requires coordination and the commitment of both teams. Plumbers can decide not to check the pipes in order to save time and move on to the next house, and cement masons can decide not to ask if everything is ready for them to do their job for the same reason.

Plate 26. Water pipes at ground level and concrete slabs cracked (left) in the front yard of an interviewee's new house, and pipes with electrical wires exposed in a nearby house (right) in 'URBI Villa del Real'

Source: Taken by the author (2013)

Considering that pipes are embedded in concrete or inside the hollow cavities of blocks, repairing a problem like the latter becomes a challenging and expensive job for

residents. Other examples highlighted by independent construction workers interviewed were ground slabs not properly levelled, which results in cracked or uneven surfaces not suitable for a proper installation of a ceramic floor; or installations not properly covered outside the house (Plate 26), which was systematically observed in 'URBI Villa del Real'. Residents in this settlement confirmed the problem with clogged water pipes and added than in some cases, houses have been delivered without electric wiring because the construction workers "forgot about it". A resident who faced the latter unsuccessfully asked the company to fix her problem within the house warranty period and it was not until she threaten to 'go to the newspapers', that the problem was solved (Dulcinea, Int@Urbi, 28.02.2013). In some cases, residents end up employing independent construction workers to maintain or modify their homes, who prefer to work as freelancers since they earn more money than for a company and have fewer problems since residents actually see and check the quality of the materials being used.

The 'design to the minimum' criteria not only have physical implications, but also implications related to the social interactions within the home. As shown above in Figure 15, the interior areas of the houses have been reduced since 1988, reducing the size and number of rooms available. As mentioned in Chapter 4, the average temperature in the city Mazatlán is around 26 Celsius, going above 35 Celsius during summer, a climatic characteristic to which the local traditional architecture used to respond, and that will be discussed as part of the residents' aspirations in relation to their houses in section 7.3.1. The architecture not only reflected the need for ventilated rooms, but also the port town culture that is present throughout the city. This means that most of the social interaction within old neighbourhoods around the city still happens through an unannounced, yet always welcomed visit that casually crosses the front door, which is open most of the day due to the hot weather. Porches in front of houses work as filters or soft barriers between the neighbours and the inhabitants of a house, who commonly have a couple of rocking chairs on the porch.

These characteristics of the local architecture and the nature of local interactions appear to be denied by the generic and monotonous design of social housing, as will be analysed in the following section. Due to the reduced size, and the inadequate response, of the architectural design of the dwellings, the social interactions are in some cases limited to the interior of the house. The use of air conditioning systems needed to cope with high temperatures is worsened by the lack of large windows and the low height of ceilings, which forces residents to close doors and windows, isolating them from their neighbours.

Most of the activities developed within the house as described by the majority of participants, happened around the dining and living area, usually in front of a TV. Families with children find this to be a problem when having to choose between watching a soap opera or cartoons. In order to avoid conflict, interviewees acknowledged that the best solution they found was to buy additional TVs, in some cases for each room, which also represented a problem considering the bedrooms are not big enough to accommodate additional furniture.

Children's activities were also observed during fieldwork outside the houses, in the shape of improvised football or baseball matches on the streets. However, even when some visits to the developments were made on weekdays during the afternoon, and during weekends, these scenes were rarely observed. The use of playgrounds and parks within the developments was almost absent during the visits, in some cases due to these areas being neglected or not properly equipped, as informed by participants. Those who considered the common use areas within the development to be inappropriate, were also concerned about the consequences of this issue on their children's development. Those with small children wondered what would happen when their kids reach an age when they will need privacy within the house and places to play outside, and those with older children regretted their teenage sons or daughters did not sufficient safe places outside the house where they could spend time.

7.2.2 DETERMINISTIC APPROACH

Responses from developers and designers interviewed revealed a strong deterministic approach when designing housing. This approach was noticeable when talking about the distribution of houses within a housing development and the way in which residents should furnish their houses.

About the distribution of houses within a settlement, an interviewee from the developer company Consorcio ARA, explained how through small clusters of 12 or 14 houses in housing projects, a sense of community can be achieved among neighbours. The latter is part of more recent tendencies of some construction company's latest developments. The rationale behind this criterion is that people living in small groups will get to know each other and create bonds in an easier way than in large groups of neighbours. Although this concept of housing clusters was not present in any of the samples researched, this argument was presented to some of the interviewees who did not find this idea to be true since they argued that it is impossible to know if you will have to share your street with 'educated' or 'conflictive' persons.

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The interviewee from Consorcio ARA also argued that in a small group of houses, there will be automatic control over the urban image of the houses established by the residents themselves. If somebody decides to drastically change his house breaking with the initial design uniformity, the other neighbours will prevent him from doing it.

"ARA: Instead of having the big centralised park we had in the 1970s and 1980s, now we have small gardens in the middle of housing clusters. What are we achieving with this? People knowing each other and so the process of creating a community sense within the neighbourhood is initiated." (Architectural Design Manager, Int@ARA, 11.09.2012)

As part of the strategies with which a developer company like Consorcio ARA tries to determine what residents should and should not do with their houses is the location of the dwellings in relation to main avenues and secondary streets. As described by the interviewee, in one of their housing projects they mix social and middle-income housing, placing the cheapest type of housing facing secondary streets in order to prevent residents turning their homes into convenience stores or local businesses, which is very common in housing developments throughout Mexico. Although in a different context, this attitude resonates with the ideology behind the paternalistic approach to the planning of company towns highlighted by Crawford (1999) and reviewed in Chapter 3.

From a developer's point of view, the idea of keeping control of land use within a settlement is justified in terms of the way services and infrastructures are designed. Energy, water and drainage infrastructure, for example, are thought to serve a certain amount of houses and if some houses consume more energy than expected for example, this can have a consequence in the development's energy performance.

At a different scale, some of the opinions from people in charge of the construction supervision of HOMEX revealed that the internal distribution of houses and the size of the dwellings in terms of the requirements for a family are features that are not really taken into account. In new developments, residents often complain about not being able to furnish their house according to their needs and tastes and find the size of the house too small to fit a dining table or a full set of sofas. They also complained about having to choose between those two options; in many of the houses visited, residents had only a table with chairs but not sofas. One of the residents interviewed in 'Pradera Dorada' placed her dining table outside the house.

When confronted with these testimonies, the HOMEX team stated that for them, that is not a problem related to the spatial quality of the house but to the fact that people do not know how to furnish their houses, revealing a significant detachment in their design and construction criteria, from the everyday realities of low-income workers.

HOMEX's argument was presented to residents from 'Prados del Sol', 'Pradera Dorada' and 'URBI Villa del Real' and some of them even felt outraged with such a response. They claimed that it is not easy for them to acquire the same type of furniture displayed in the construction company's show house. Trying to replicate the same furnishing style would mean to get rid of pieces of furniture they already have, sometimes given to them as gifts from relatives or taken from where they used to live. Furthermore, it would mean buying a completely new set of furniture, which goes beyond their economic possibilities.

Figure 20. Layout of a 38 square metre house in 'Pradera Dorada' (left) and 'URBI Villa del Real' (right) showing the distribution of furniture.
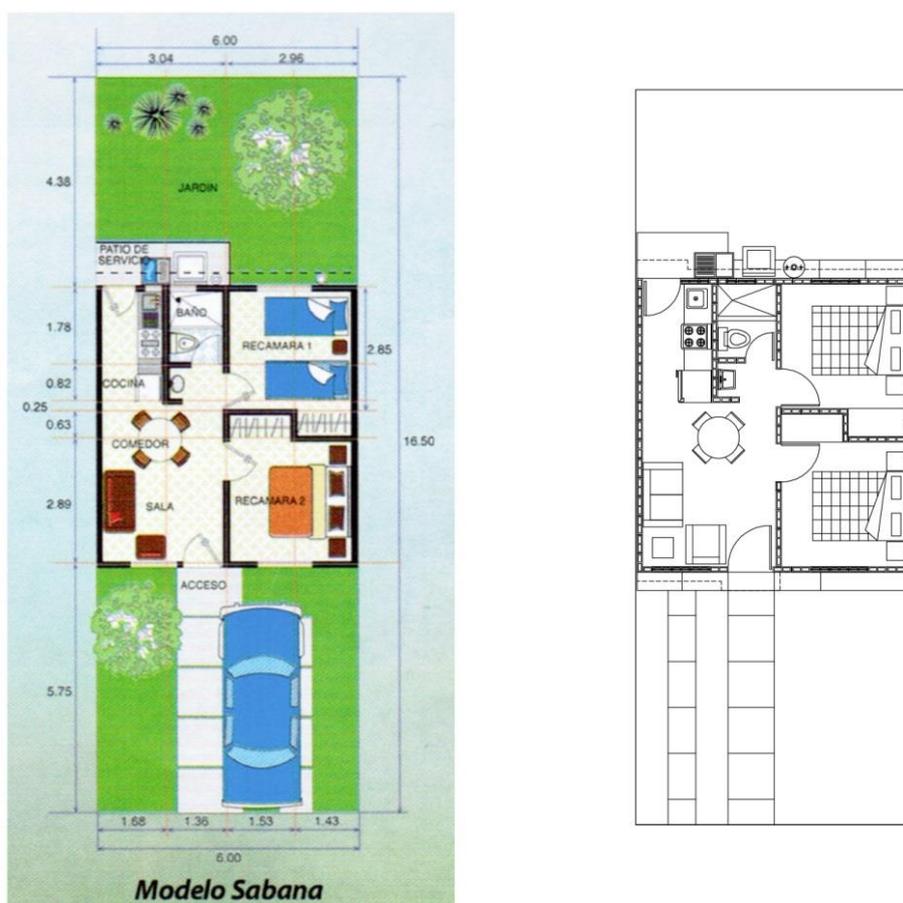
Source: MEZTA flyer (left) and architectural layouts provided by URBI Mazatlán (right).

In 'INFONAVIT Jabalíes' there were residents who considered the house to be very small, usually when compared to their previous accommodation, which was in rural areas, with

their parents or in rented houses close to the city centre. They claimed to have plans for modifying it as soon as they could but this was not possible in all cases. There were characteristics of the house right after its deliverance mentioned by interviewees (i.e. size, material quality, location within the development) as features that called their attention. In some cases, the latter features were planned to be improved or modified, although in many cases it was not possible to reach those objectives. The size, material quality or location, which related to the physical characteristics of the house will be discussed in the following section about the spatial dimension of house.

Challenging designers' and planners' assumptions

The spatial and material awareness presented by residents mostly emerged during the development of sketches made alongside the interview and while participants made an account of the modifications they had made or desired. The development of sketches triggered a reflective process that revealed residents' spatial and material awareness in relation to their homes.

As discussed in the previous section, the main motivation for residents when deciding on acquiring a new house was to obtain independence and autonomy, and to achieve home ownership, which would allow them to build an economic patrimony and inheritance. The discussion with residents of these two motivations generated concepts that when translated into the built environment, referred mostly to having access to a durable home of good material quality as a starting point.

The majority of participants in 'Pradera Dorada' (2007) and 'URBI Villa del Real' (2009) did not demand to be provided with extremely large houses, but with "at least" enough space for not having to choose between having dining furniture or living furniture. The latter reflection resonates with the feeling of disempowerment and resignation identified in the social dimension of housing discussed in the previous section; there is an acknowledgement of being provided with a house that represents a starting point and that it is up to them to improve it; however, they consider that the material and spatial quality private developers offer does not correspond to what they end up paying, or the effort it represents for them to cover their debt with INFONAVIT. This is a situation that drives workers to feel not only disempowered, but also indignant and cheated. Although houses are larger in 'Prados del Sol' (2000), interviewees still considered the amount of space as tight and the internal distribution of the dwellings not suitable for an enlargement of spaces without sacrificing illumination and ventilation.

The latter interviewees' reflection about the size of housing revealed a spatial awareness from interviewees who acknowledge they have not modified their homes because of a lack of ideas or because they are content with the house they received, but due to the modifications representing a major investment they cannot afford while still having to endure monthly discounts from their salary to pay for the house. Residents' awareness of the potential of their physical surroundings challenges the deterministic and patronising approach to the design and construction of social housing, and the profit-driven rationale revealed by developers, constructors and designers.

The peak of the deterministic and profit-driven approach is observed in 'Santa Fe' (1997), built by private developer HOMEX. As mentioned above, professionals interviewed from this company declared that the real problem with the size of housing is the inability of people to properly furnish their homes, or them not taking enough time to decide which house to buy. In relation to the latter, residents had a strong opinion, like Danaé, a woman in her mid-twenties who moved to 'URBI Villa del Real' (2009) while parts of the development were still under construction.

"Danaé: That's unfair! [...] Of course I can furnish my house and put chairs in the living room and still, the space I'll have left will be reduced. It's they who should know how to furnish a house for four! For a woman, a man and two kids. Their concept is one telly over a piece of furniture... a fridge, a hub in a tiny kitchen with a tiny table, a tiny couch... and that's it! Like the sample house [which looks really pretty and all]. But in that house, what can you do when you have guests? Where do you sit them? If you just have chairs, where can the whole family sit for watching telly or spending time together? You end up sitting on the floor or dragging the dining chairs to the living room. Yes, you find tiny dining tables in stores but a whole family doesn't fit in it. [...] They make it very difficult. These houses are too small; you put a few things in it and everything looks cramped and stuffed." (Danaé & Daniel, Int@Urbi, 22.02.2013)

Residents in 'Prados del Sol' (2000), 'Pradera Dorada' (2007) and 'URBI Villa del Real' (2009) were sometimes shown only the sample house, and the location of the house within of the development was in the end determined by sellers depending on stock availability. In other cases, instead of the worker's selection, nearby houses were shown to the participants with the

promise of being provided the same type of finishing materials and even size of housing, only to discover when they enter the final house to have received something different.

For developers, the latter appears to fulfil their responsibility in regards to showing workers what they will obtain, washing their hands of the need to behave responsibly whilst reaffirming the underlying assumption of free choice and personal responsibility embedded in the neoliberal free market philosophy that rules the social housing production in Mexico. A similar attitude was identified in the assumptions behind housing design in an interview with the architectural design manager in ARA, who declared that the real focus of housing design is what is openly revealed (i.e. facades, common use areas), since that is the marketable asset of housing. The internal distribution of a house was disregarded as a feature of mass-produced housing that it is not worth excessive thought.

Although it was not possible to meet with people involved in the architectural design of social housing before 1992, the INFONAVIT official interviewed, who was also involved in the construction supervision of 'INFONAVIT Jabalíes' (1988), declared that the conception of housing for workers before delivery was delegated to the private sector, included the idea of a dignified home and a piece of land for labourers that was reflected in the material and spatial quality of housing. He claimed this was lost with the transformation of houses into commodities after the neoliberal reforms.

The majority of residents from 'INFONAVIT Jabalíes' (1988) did not find the house to be too small when they acquired it in 1988, and even confessed to be happy with the space available. Although many of them desired to modify their homes and add more space even after twenty-four years of living there, they revealed an overall satisfaction with the original spatial and material characteristics of their homes. Therefore, the concept of social housing for workers provided in 1988 that aimed to fulfil the need for a dignified home and a piece of land for workers was based on the testimonies of participants living in 'INFONAVIT Jabalíes' (1988), met. This is in opposition to residents' testimonies from more recent developments, where the feeling of being cheated and treated as second-class citizens is present.

Spatial and material needs

Residents' awareness helped identify a set of spatial and material needs with regard to their homes, which were possible to group in three consistent categories; safety, privacy and space. Participants in 'Prados del Sol' (2000), 'Pradera Dorada' (2007) and 'URBI Villa del Real' (2009) attempted to ensure that each of these three groups of needs were addressed before

moving in to their new homes if possible. Without the satisfaction of particularly the first two, residents preferred to keep paying rent or living with relatives than to move to the new housing developments.

Plate 27. Houses in 'URBI Villa del Real' (2009) and 'Pradera Dorada' (2007) without boundary walls separating individual houses in the back

Source: Taken by the author(2013)

The satisfaction of the need for safety and privacy has a material character in the form of window and door protection, and boundary walls, which are elements not included with the new homes (Plate 27). However, in 'Pradera Dorada', protection was supplied for an extra cost (Plate 28). In the case of 'INFONAVIT Jabalíes' (1988), boundary walls and protection came with the house, allowing residents to move immediately to their new home. In 'Prados del Sol' (2000), protection was not included and boundary walls were present but only 60 centimetres high according to residents, which is a considerable difference from the more than 1.20 metre-high walls provided in 1988.

In new developments, not even the foundations for a new wall were installed, which makes the construction of them expensive and difficult to do in the short term. Security is a priority for residents not only for their own protection but for their economic patrimony, and without the presence of the latter elements, residents feel vulnerable living in housing developments that have not been completely occupied, sometimes with areas still under construction, and located on the outskirts of the city.

Plate 28. Unoccupied house in 'Pradera Dorada' (2007)

Source: Taken by the author (2013)

Plate 29. Houses in new developments like 'URBI Villa del Real' are delivered without boundary walls. Some residents are forced to improvise walls with materials like wood or advertising signs in order to have privacy.

Source: Taken by the author

Plate 30. Unoccupied houses (left) and pillaged house (right) in 'URBI Villa del Real' (2009)

Source: Taken by the author

Plate 31. Unoccupied houses in 'URBI Villa del Real' (2009) front door and damaged window on the front (left) and with a missing sink (right)

Source: Taken by the author(2013)

In addition, the lack of physical boundaries represents a privacy problem which economic investment in protection and sometimes in boundary walls for privacy was preferred

over setting up water and electricity contracts; unattended and easy to access empty houses are subject to invasions or acts of vandalism and pillage (Plate 30). It was a common sight in 'URBI Villa del Real' (2009), to see rows of unoccupied houses or houses without windows, doors, sinks, faucets or electrical wires (Plate 31).

All of the above projects an image of abandonment that potentially affects the reputation of some housing developments to the point of being discarded by social housing beneficiaries as viable options. Such is the case of 'Santa Fe' (1997), where around half of the development was observed to be unoccupied allegedly due to the remote location of the project in relation to the city centre (Plate 32).

Plate 32. Streets of 'Santa Fe' (1997).

Source: Taken by the author

In addition to location, a considerable amount of the inhabited houses had been illegally occupied by people from informal settlements surrounding the development, according to a real estate appraiser with experience in this development. As declared by a 'Santa Fe' resident during a personal communication, empty houses become garbage dumps and refuges for delinquents and drug addicts, and particularly dangerous places at night. The combination of empty and damaged houses, the presence of illegal occupiers, and the location of the development, traps 'Santa Fe' in a vicious circle of insecurity, inoccupation and bad imagery that unsettles residents, and potentially undermines the value of properties over time.

Moving in to a new house represents for residents a considerable investment that for some is impossible to make at once, and this can also include the purchase of new furniture. Therefore, the transition to a new development turns into a gradual and in some cases slow process that can last for months, time that unfortunately plays against workers' interests.

As discussed in chapter 6, the Federal Law On Consumer Protection states that since 2012, new houses delivered to social housing beneficiaries must come with guarantees over the structure of the house for five years (i.e. walls, roof and floor), three for the water seal over the roof, and at least one year coverage for other elements, such as electrical, water and drainage installations. The guarantee period starts from the moment the house is handed to the owner (LFPC, 2012, Art. 73 Quater). Before 2012 and since 1992, guarantees were delivered for one year and only against structural failure. However, residents declared that in the case of installations, in reality they were offered a six-month guarantee in the case of 'Pradera Dorada' (2007), and a three-month guarantee in 'URBI Villa del Real' (2009). Mentions of a one-month guarantee for doors and windows, and a one-day guarantee for door locks were made. In the case of the latter, the guarantee consisted of checking the proper operation of door locks at the moment of deliverance; if a door lock malfunctioned the next day, the developer company could not be made accountable for it.

In any case, by the time residents move in to their new homes, some of the guarantees have already expired and it is up to them to repair any malfunction faced. In addition to the latter, the low quality of the materials used in the construction of the house, which follows the logic of designing to the minimum, almost guarantees the eventual but untimely failure of installations, sinks or toilets.

7.3 TEMPORAL DIMENSION

In relation to the social dimension of housing, what was considered to be a minimum social housing unit in 1988 offered more space and better material quality than houses provided in 2000, 2007 and 2009. In 1988, workers had access to houses built with an internal distribution that allowed more spatial flexibility without necessarily modifying the houses. In case of choosing to undertake changes to the building itself, the construction methods used allowed a 'cleaner' and possibly cheaper modification of the houses, due to the familiarity of residents with the construction materials and techniques.

In relation to the spatial dimension of housing, although the dwellings were not modified in all cases in 'INFONAVIT Jabalíes' (economic constraints being the main reason stated by the interviewees), the overall satisfaction with the size and material quality of the buildings was higher than in new developments. The primary things residents felt dissatisfied with when they first moved were related to the characteristics of the developments that they could not modify, such as the location in relation to the city centre and services and urban

infrastructure available. However, the latter dissatisfactions were 'solved' with time as the development was occupied and the limits of the city reached them.

In 'Prados del Sol', built in 2000, criticisms of the size of the dwellings emerged constantly during the interviews, which was considered to be small in comparison to 'old' housing developments like 'INFONAVIT Jabalíes' but still good when talking about new housing developments like 'Pradera Dorada' and 'URBI Villa del Real'. The location of 'Prados del Sol' in a part of the city where land is currently too expensive for profitably building social housing, turns that development into an atypical case, as explained in chapter 5. However, its location provided insights about the importance of the surroundings and the urban location of a housing project and the development of residents' lives. As in 'INFONAVIT Jabalíes', residents remembered feeling completely disconnected from the city centre on arrival, without access to main avenues and public transport that allowed them to easily move from their homes to job sources. The latter problem was solved in a similar way to the case of 'INFONAVIT Jabalíes' however, according to residents. In addition, living surrounded by housing developments with a higher income population had a positive impact on the overall quality of life within the development, 'pulling up' their neighbourhood. The latter along with being surrounded by middle- and high-income housing development, are the reasons for the overall positive development of 'Prados del Sol'.

'Pradera Dorada' and 'URBI Villas del Real' have a couple of years of difference between their construction and both are located inside the social housing area of the city. Although different private developers built the two projects, the houses offered show the same internal distribution and similar material quality. In both cases the construction methods used were the same and variations were found in the attention and treatment received from representatives of each developer and specific construction problems attributable to different levels of supervision. The only visually distinguishable variations were the facades of the houses, which conformed to the design criteria (stated by ARA). The two developments were both criticised by interviewees in relation to the size of housing, the material quality, the services and infrastructure available, and the perception of being provided with a house that does not represent what they end up paying for.

As both developments are still in the process of being occupied and many of the residents have no more than five and three years living in each development, the occupied houses show little visible modifications. In 'URBI Villa del Real', it was possible to observe only one house with a second storey within the development. Those houses with modifications

exhibited new boundary walls and porches in the front, which was also commonly the trend in 'INFONAVIT Jabalíes' and 'Prados del Sol'. Due to the lack of modifications, it is still difficult to assess the extent to which the construction method will hinder or facilitate the modification of the dwellings.

7.3.1 NO SPACE FOR TASTES AND ASPIRATIONS

One of the research sub questions addressed for this research was "How is the built environment meeting residents' needs, tastes, and aspirations?" in social housing. However, the responses from residents rarely included references to personal tastes while they gave accounts of their experiences and lives in their homes. References to aspirations on the other hand, were expressed as plans and objectives in the case of 'Pradera Dorada' (2007), 'URBI Villa del Real' (2009) and to a lesser extent in 'Prados del Sol' (2000), and as unachievable goals in the case of 'INFONAVIT Jabalíes' (1988).

Plate 33. Typical traditional architecture in the city centre of Mazatlán

Source: Erik Bremer, Untitled, November 10, 2010 via Flickr, Creative Commons License.

In the four developments, 'tastes achieved' were limited to references to furniture, interior decoration, or the colour of the façade. However, specific remarks about creating spaces according to their personal taste emerged during the development of the sketches, such as building a porch for placing a rocking chair outside, having a nice garden with a fruit tree, a

larger living room and furniture for welcoming visitors, or larger windows that allowed air to run freely through the house, just like in 'old houses'[20] (Plate 33) in the city centre, where architecture responds to the hot local weather and provides fresh and ventilated internal spaces.

Just three of thirteen residents in 'INFONAVIT Jabalíes' (1988) confessed to being completely satisfied with what they achieved with their homes and did not plan on making any further modifications. Despite the limitations of money and space, they managed to transform their homes not only according to their needs, but also their tastes and aspirations.

Azucena lives with her husband in a house that has not had any additions, despite having had four members in the family before their children moved out. The only modifications were in relation to the finishing materials inside the house. They changed the original vinyl tile floor for good quality ceramic tiling, remade the plaster on the interior walls and had a tailored kitchen made. In the back patio they covered the original dirt floor with a concrete layer and changed the tiling, sink and toilet from the bathroom. Although the size of the house has not changed, Azucena thought it was enough for her family and would be a good place for her and her husband to grow old, without the need of going up or down stairs in a house with an extra storey.

A second case was Adriana, who lives with her husband and her two children in a house they managed to enlarge at the back, creating a garage and a bigger kitchen, and to the front, achieving a more spacious living room (Figure 21). In the anteroom, she had a walk-in closet built for storing clothes, appliances and boxes, in order to keep her house tidy.

On the left side of the house facing the street, she hired an independent construction worker to build an extra room that is being used as a gift shop which is attended by her while her husband goes to work in the city centre for a private company. Independent construction workers were also in charge of the other modifications around the house, which Adriana considers to be enough for her and her husband, since her son and daughter will eventually move out the house and just like Azucena, sees the space to be sufficient for her and her husband.

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[20] *Old traditional houses in the city centre of Mazatlán are usually one- or two-storey buildings with tall ceilings, and narrow and tall doors and windows. Windows and doors have forged windows and wooden louvers for protecting from the sun while allowing air to flow through the usually wide rooms inside the house. In some cases, the ceilings of such houses are made with wooden beams and tiles, allowing low temperatures inside.*

Figure 21. Adriana's house in 'INFONAVIT Jabalíes'.

Ground floor   Ground floor

1. Kitchen
2. Living area
3. Dining area
4. Antechamber
5. Bedrooms
6. Bathroom
7. Garage
8. Shop
9. Porch
10. Closet
11. Garden

1988   Pedestrian pathway   2012   Pedestrian pathway

0   5m

Source: Developed by the author (2013)

Although Adela and Antonio were able to afford to pay for the services of a licenced architect for the development of the architectural layouts, just like Adriana and Azucena they also hired an independent construction worker, which they then directed during the work.

The radical transformation of Adela's and Antonio's house from the initial version of a housing unit to their current home (Plate 34) started right after they moved in 1988 with their two children, and intermittently happened over the more than twenty years they have lived there, stopping to save money to keep the construction process going. They declared having started with the enlargement of the kitchen, which Adela considered to be really small, and followed with the construction of the stairs and one bedroom in the second storey (Figure 22).

Plate 34. House showing its original façade in 'INFONAVIT Jabalíes' (left) and Adela & Antonio's house (right)

Source: Taken by the author(2013)

Figure 22. Evolution of Adela and Antonio's house in 'INFONAVIT Jabalíes'.

Ground floor

Ground floor

Upper floor

1. Kitchen
2. Living area
3. Dining area
4. Antechamber
5. Bedrooms
6. Bathroom
7. Toilet
8. Porch
9. TV Room
10. Back patio

Pavement

0   5m

1988

Pavement

2012
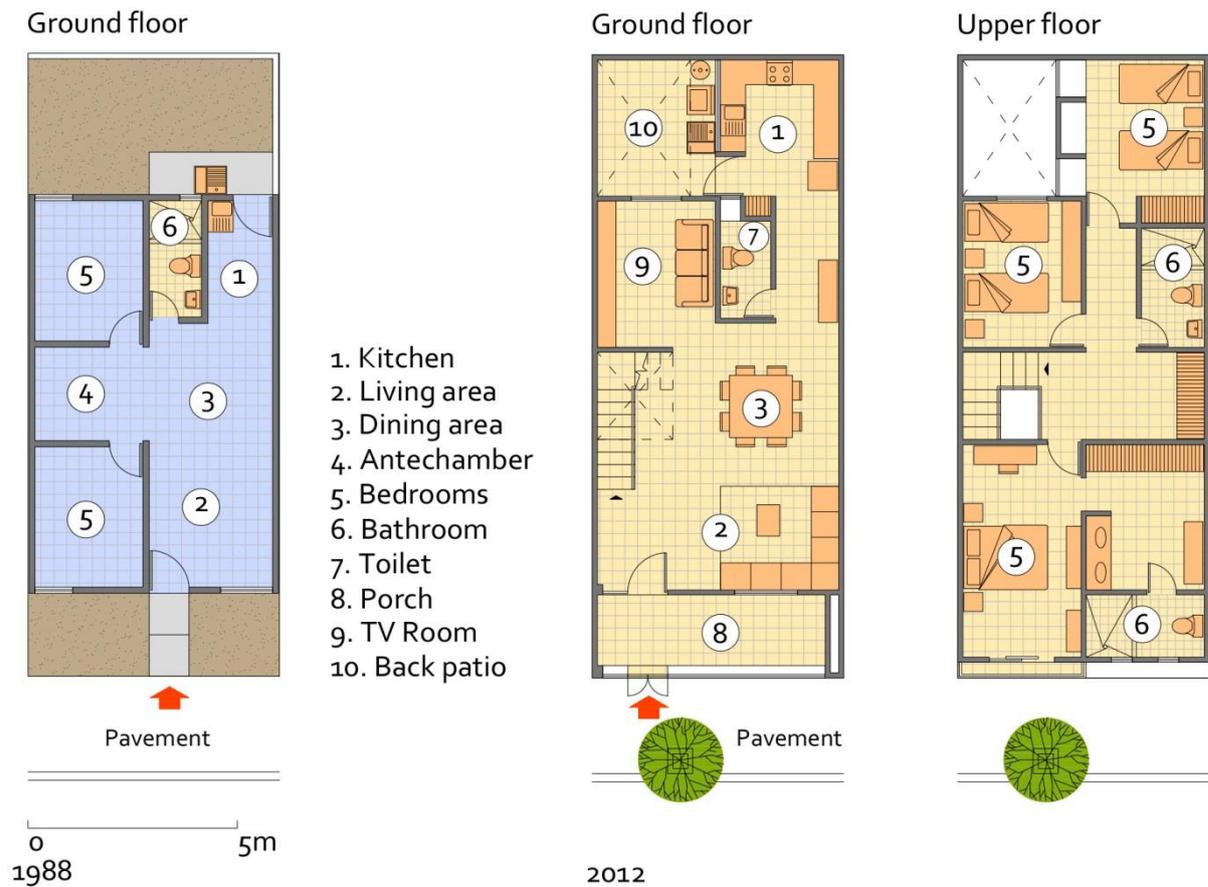
Source: Developed by the author(2013)

From there, additions were made to the house that required taking advantage of the original construction system of diaphragm walls and concrete confining beams, columns and foundations, which the construction worker they hired was knowledgeable about and with whom they still keep in touch for general maintenance around the house when needed.

During the modification process itself, they faced difficulties such as sleeping all together in one room or eating sat down on the stairs. Having achieved the modification of her house according not only to her family's needs but to her tastes, Adela showed a sense of pride and achievement, especially when neighbours have asked her to let them take a look at her home in order to get ideas for modifying their own.

> *"I like my house a lot. I love how we changed it. I'd like Superman to come and take it to take it just the way it is to another plot; a larger plot with a big patio and lots of space, like my grandparents' in the city centre. [But still] I enjoy it and I like it very much."*
> *(Adela & Antonio, Int@InJa, 23.05.2012)*

The above-mentioned cases show the importance of considering homes beyond mere shelters during the design and planning process, and acknowledge that houses are means of expression for people (Marcus, 1974), but that is not only limited to decoration and furnishing. Adela's case revealed that the more power people have over their built environment, the more they modify it as mirrors of their selves. However, power over the built environment it is strongly determined by money and in the case of residents in social housing developments, that ability was hindered by their income and the economic difficulties the face over time.

The expression of the self appears to be a luxury for low-income workers, and to achieve the fulfilment of their tastes goes to the last of their priorities when planning on modifying their physical surroundings, especially for those residents in 'INFONAVIT Jabalíes' (1988) and 'Prados del Sol' (2000). Despite the time they have lived in their homes, they confessed to not have been able to achieve all the plans they conceived when they moved in. In a few cases, the unachieved goals referred to the basic needs discussed above about safety and privacy, but in the majority of the cases, they referred to the constant need for more space. Safety and privacy could be considered as the primary level of needs for residents, and without the satisfaction of those necessities they cannot jump into the next level of satisfaction since "higher" needs (Maslow, 1943) such as space or tastes in this context, will never emerge.

CONCLUSION

This chapter analysed three of the five dimensions identified by Villavicencio (1996) and Villavicencio and Durán (2003) as part of their methodological proposal for analysing social housing. Focusing on the social physical and urban dimensions, this chapter elaborated on the elements embedded in each dimension, which reveal the complexity of the study of housing and the need for further research in relation to temporality and historical perspective in housing research.

For beneficiaries of social housing programs, access to housing represents not only access to shelter, but also to homeownership. Homeownership is of cultural significance in Mexico due to its link to landownership, which is seen as one of the most important legacies of the 1910 Mexican Revolution. A piece of land and a house is considered a long term investment and an economic patrimony, and for the majority of the interviewees, an INFONAVIT credit was the only way for achieving it.

Before the 1992 neoliberal reforms, within the scope of social housing programs low-income workers were a priority for INFONAVIT following its creation. However, after the 1992 neoliberal reforms the diversification of credits in accordance to workers' income eliminated the concept of the solidarity fund from which the most vulnerable parts of the working population would benefit. This diversification was also translated into a wider variety of housing typologies, being most basic and cheapest housing units the ones in reach of low-income workers. For the majority of participants in post-neoliberal housing developments, accessing housing credits above the limits of their income and therefore larger houses is an unachievable goal. This leaves residents feeling marginalised and disempowered, and resigned to accept that their economic patrimony is a small house of poor material quality.

Developers' deterministic approach to the design of housing and housing developments is being interpreted by residents as a patronising attitude that simplifies residents' needs, tastes and aspirations in regards their homes. Developers' assumptions during the design and planning process overlook the impact of architecture on the everyday lives of residents, and ignore people's needs in regards to material quality, space, and spatial flexibility.

Only a couple of interviewees in 'INFONAVIT Jabalíes' (1988) added an extra storey to their houses, and along with one more, where the only three interviewees that enlarged rooms to the front or the back making use of the rest of their plots. Although some of those who did not enlarged their homes confessed having not been able to do it because of economic

constraints, over time they thought the 58 square-metre area of the house was enough for them and their families, a declaration shared also by some who purposely decided not to modify their homes since they acquired them. In 'INFONAVIT Jabalíes', the major investments made were on the interior, focusing on the refurbishment of kitchens, bathrooms, ceramic floors for substituting the vinyl tiling originally provided, or outside on the construction of a porch at the front of the house.

In 'Prados del Sol' (2000), where houses are 48 square metres, modifications made to the houses were similar to those observed in 'INFONAVIT Jabalíes' (1988). Porches at the front of the house were as common as in 'INFONAVIT Jabalíes', same than the refurbishment of kitchens or bathrooms. Covering the original front dirt floor with a concrete slab was more common than in 'INFONAVIT Jabalíes', mostly because in 'Prados del Sol' houses face the street and cars can be parked at the front, unlike in 'INFONAVIT Jabalíes' were the majority of single-family houses face pedestrian paths, and fronts are most likely to be turned into gardens or porches. Extra storeys on the other hand, were almost as common as in the sample selected in 'INFONAVIT Jabalíes'. The main difference in terms of economic investment made by residents relied on boundary walls and protections in doors and windows. All interviewees in 'Prados del Sol' installed protections as soon as they moved in back in the year 2000, and nearly all residents had the original 60-centimetre boundary walls raised at the back, additions that residents in 'INFONAVIT Jabalíes' did not have to worry about since protections and 120-centimetre walls came with the house.

In the case of 'Pradera Dorada' (2007) and 'URBI Villa del Real' (2009), protections and boundary walls were not included in any form. In relation to protections, they could be installed by the developer company for an extra cost and only in 'Pradera Dorada', something done only by two participants. Same than in 'Prados del Sol', all residents interviewed in 'Pradera Dorada' and 'URBI Villa del Real' had protections installed in their homes, and only a handful of them were still waiting for having enough money for having boundary walls built at the back. In these two developments, just a few participants of whom the majority lived in 'Pradera Dorada' (2007), had the original vinyl floor changed for ceramic tiles, and even less had kitchen refurbishments or concrete floors at the front. In 'URBI Villa del Real' (2009) there was only one house with an extra storey at the moment of the interviews, included in the sample, and in 'Pradera Dorada' (2007) less than a dozen, which could not be included during fieldwork.

A common finding in the cases built before and after 1992 was that houses were not modified in the majority of cases, not necessarily revealing a satisfaction with the size or physical characteristics of the houses, but a lack of economic resources due to their low income or to the inherently changing stages of life. Nevertheless, when left with an unmodified brick-based 58 square-metre house, residents in 'INFONAVIT Jabalíes' (1988) revealed to feel comfortable with the size and material quality of their homes, which they never thought was too small or flimsy. Residents in 'Pradera Dorada' (2007) and 'URBI Villa del Real' (2009) on the other hand, were already suffering the consequences of living in a reduced-sized and poor material quality house just after a few years of moving in. This leaves a question open in regards to the extent to which these workers will be able to modify their homes in the medium- or long-term, and what kind of effect this will have on their everyday lives.

Temporality is a dimension of housing that is rarely considered in the housing production process. The stage after the occupation of the dwellings is only taken into account for post-occupational assessments developed almost immediately after the deliverance of housing, utilising consumer satisfaction criteria for the design of surveys that superficially evaluates the overall quality of housing projects. Nevertheless, the cost of modifications and the lack of construction and architectural flexibility of social housing units have an impact over time on the everyday lives of residents, hindering the improvement of housing size or material quality for many residents.

Due to the latter, over time residents are forced to postpone. Re-evaluate or cancel plans related to needs, tastes and aspirations related to the physical characteristics of their homes. Tastes and aspirations become luxurious assets over time that residents put aside to prioritise the satisfaction of basic needs in relation to space, which in many cases are not met even after decades of living in a housing development, having to adapt to reduced space and rooms, crowding and lack of privacy. Considering that social housing in Mexico represents homeownership, a long-term investment and an economic patrimony, qualitative longitudinal research is needed for a deeper understanding of the housing process and the relationship between people and their built environment. In addition, long-term post-occupational evaluations should allow a holistic assessment of the material quality of housing and the social impact of it on the everyday lives of people.

CHAPTER 8

CONCLUSION

INTRODUCTION

This research aimed to explore the concept of 'social' in social housing in Mexico, and the 'social' impact of the built environment on the everyday lives of people. To achieve this, it looked to identify the needs, tastes and aspirations of residents of social housing developments with regards to their homes, done within the context of a type of housing that it is supposed to represent low-income workers' starting point for spatial modifications. It also aimed to explore the values, actions and assumptions of the actors involved in the production of social housing. Since the size of housing is determined by housing policies, and the material quality of housing and architectural design, by market tendencies, this research also sought to analyse to what extent the outcome of social housing programs and mass produced housing, is hindering or facilitating the adaptation of housing in accordance to residents' needs, tastes and aspirations.

This study aimed at answering the following research question and sub questions:

1. **What does 'social' mean in 'social housing'?**

   ~ **What was / is the definition of 'social' in housing policies and regulations?**

   ~ **How has the concept of 'social' addressed workers' needs with regards to housing?**

2. **How is 'social' being translated into the built environment in social housing?**

   ~ **What have been the main social housing typologies available to workers?**

   ~ **How has the physical production of social housing been impacted by economic and political reforms?**

   ~ **What were / are officials', planners', and designers' assumptions behind the production of the built environment in social housing?**

3. **How is social being experienced by residents in social housing developments?**

   ~ **What are the physical, spatial and material characteristics of the houses provided?**

   ~ **How is the built environment meeting residents' needs, tastes, and aspirations?**

~ **How do officials', planners', and designers' assumptions behind the production of the built environment in social housing compare or not to residents' needs, tastes, and aspirations?**

To answer the latter questions and sub questions, this research focused on four housing developments as case studies in the city of Mazatlán, Mexico. It used a mixed-methods qualitative approach for developing 50 interviews with residents, and 19 interviews with officials, developers, designers, and construction workers. For data collection, semi-structured interviews were used with all participants, and in the case of residents, the development of sketches by the researcher. Direct observation was made for capturing the physical characteristics of the developments and the houses, using photographs for recording the information.

The following sections will address the empirical findings (Section 8.1), the theoretical implications of this research (Section 8.2), the methodological implications (Section 8.3), and recommendations for future research (Section 8.4). Before the above-mentioned sections, a timetable (Figure 23) will be presented, with the historical events, documents analysed, and the changes on the size of housing in accordance to the historic analysis made for this study and the case studies selected.

Figure 23. Timeline.

1910
Mexican Revolution starts

1932
Mexican architect Juan O'Gorman wins a design competition for housing for workers with his project 'Transición'

1948
Multifamily Housing Complex 'Miguel Alemán' designed by Mario Pani is completed, holding 1080 households and becoming the first housing development of its kind

1964
Multifamily Housing Complex 'Nonoalco' designed by Mario Pani is completed, holding almost 12,000 households, ending the high-rise and high-density housing complexes era

1968
The first stage of the housing complex Thamesmead in London is finished

1971
The Board for the Study of Housing decides to reform the article 123 of the Mexican Constitution

1972
Infonavit is founded

1985
8.1 and 7.9 earthquakes hit Mexico City within two days causing thousands of deaths and serious damage to buildings and city infrastructure

The construction of social housing 'Infonavit Iztacalco' starts in Mexico City, blending multi-storey buildings with the design of landscape

1974
The construction of 'El Rosario' starts

1989
The Washington Consensus issues recommendations

1992
Implementation of neoliberal reforms

1995
Housing development 'San Buenaventura' is built by Geo in the State of Mexico, with 23,000 households, becoming the largest in Latin America

2010
Housing development 'Galaxia Almecatla' is assessed as the worst project in Mexico according to the ISA

2009
Infonavit incorporates the ISA, designed by J.D. Powers for measuring residents' satisfaction

2012
Minimum size of social housing changes from 33sqm to 38sqm

CPEUM
1917

FEDERAL LABOR LAW
1931

INFONAVIT LAW
1972

FEDERAL HOUSING LAW
1983

HOUSING LAW
2006

PNV
2007

58 sqm
48 sqm
33 sqm
38 sqm

44 sqm
48 sqm
51 sqm
58 sqm
56.6 sqm
54.6 sqm
50 sqm
52 sqm
42.4 sqm
48 sqm

Source: Developed by the author (2015)

8.1 EMPIRICAL FINDINGS

The main empirical findings are chapter specific and were presented within their respective discussion chapters: Chapter 5 "The meaning of 'social' in social housing", Chapter 6 "The translation of 'social' into the built environment", and Chapter 7 "The habitation process". This section answers the three research questions posed for this study, which are as well, chapter specific.

1. WHAT DOES 'SOCIAL' MEAN IN SOCIAL HOUSING?

There was not a conclusive definition of 'social' found in policy documents vis-à-vis social housing. 'Social' is not an attribute of housing related to benefiting the most vulnerable parts of the population, or to a social responsibility from those involved in the production of it, as it happens in contexts were social housing is an objective of welfare programs that benefit the general population. Social housing in Mexico refers specifically to housing for workers and 'social' in this context, emerges from the nature of housing as a social right; a right accessible through the benefits of formal employment. Despite the lack of a definition of 'social' in 'social housing' in policy documents, the analysis of the way housing policies and programs have been implemented in practice since the inclusion of the right of every worker to social provision and social security tools in the 1917 and the 1960 Mexican Constitution allowed the extraction of different interpretations of the term 'social' in social housing. These interpretations, which will be covered in this research question, run in parallel with the historical, political and economic evolution of the country during the century that followed the 1910 Mexican Revolution.

What has been the definition of 'social' in housing policies and regulations?

'Social' is just a discursive tool

Along with the right to unionise and to the eight-hour working day also included in the Article 123, housing as a social right made the 1917 Mexican Constitution a cutting edge example worldwide. The inclusion of housing in the constitution and its 'comfortable' and 'hygienic' attributes, were the outcome not only of a social justice concern, but also the outcome of a study of the consideration of housing in developed countries' legislations, such as the United States, England and Belgium, which turned this document into the first one to consider housing as a right of every worker.

In addition to the latter, land reforms applied for benefiting the rural population turned the 1917 Mexican Constitution into an object of pride since it materialised an important step forward in the modernisation process of a country that looked for detaching completely

from its dictatorial and colonial past. 'Social' became the banner of the political discourse during the following decades after the Revolution; the National Revolutionary Party (PNR, *Partido Nacional Revolucionario*) created after 1910 and later transformed into the Institutional Revolutionary Party (PRI, *Partido Revolucionario Institucional*) which stood in power until the year 200, appropriated in 1929 the social, nationalist, and revolutionary ideals that aimed to protect the poor and the underprivileged.

Nevertheless, the avant-garde contribution of the Mexican Constitution in relation to workers' housing as a social right and an employers' obligation gradually faded out during the following decades after the Revolution, remaining a dead letter until the creation of INFONAVIT in 1972. The institute's objectives contained in principle a social commitment that aimed to benefit primarily low-income workers through the construction of low-cost housing at a national level, and the establishment of a solidarity fund administered by the institute and built with the contributions of employers from the private sector.

How has 'social' addressed workers' needs in regards to housing?

A selective, clientelist and corporatist approach

The link between housing and social provision and social security programs in the article 123 of the 1917 Mexican Constitution although considered avant-garde in relation to other constitutions around the world, turned housing into a selective right benefiting a very specific part of the population. The implementation in practice of housing as an employers' obligation remained as a dead letter and during the first decades after the Revolution, it was the state trying to respond to the increasing demand for housing from the workers' organisations. These organisations held large numbers of unionised and enough political influence and power for pushing the government to provide housing in exchange for ensuring their unionised voted in favour of the ruling party.

The relationship between workers' organisations and the state, along with the deterioration of the political legitimacy of the ruling party between the end of the Revolution and the creation of INFONAVIT, attributed the production of housing for workers with a clientelist character. Regardless of the clientelist approach, the first attempts of state housing provision managed to satisfy the demand for housing but focusing on an increasingly populated Mexico City due to migration from rural areas, reaffirming the selective character of this social right even amongst the working population.

Clientelism in housing remained as the approach to the production and provision of housing until the 1970s, when representatives of workers' organisations, along with representatives of the private sector and the state crated a tripartite commission that pushed the foundation of INFONAVIT in 1972. During the first two decades of INFONAVIT's foundation, unions' role in the allocation of housing was still active despite attempts to deprive them of this attribute in the 1972 reformed Federal Labour Law, which worked to achieve a direct relationship between INFONAVIT and labourers and eliminate intermediaries. After 1972, unions' participation in the allocation of housing was not backed up by the Federal Labour Law but in practice, their role in this process although not as strong as before 1972, was confirmed by residents and officials interviewed.

Over time, the role of workers' organisations in allocation of housing faded out, and the market and private developers' interests determined the demand of housing after the 1992 neoliberal reforms and the delegation of the physical production of housing to private actors. The old symbiotic relationship between workers' organisations and the state was substituted by a corporatist relationship between the state and the private capital. The complete reliance on the market and private sector's 'good will' for the physical production of housing, along with the housing credits stratification system implemented after 1992, marked a declining trend in the physical and material quality of housing and an increase in the cost of housing for workers in the long term. The large amount of complaints received during the late 1990s and the 2000s in regards to the quality of housing, led INFONAVIT to create post-occupational quantitative assessment tools and private developers' databases for evaluating the housing production process.

Conclusion

Although the 1910 Mexican Revolution transcended history as the first social revolution of the 20th century, it failed to meet the needs of the working population with regards to housing. 'Social' in the 1917 Mexican Constitution and the 1970 Federal Labour Law referred to attributes emerged from social rights and the benefits accessible through employment, such as social provision and social security. The categorisation of housing as a right only accessible through employment also turned housing into a selective right.

In spite of this, housing for workers became an obligation of every employer and a right of workers, its mention in the Constitution and the Federal Labour Law only aimed to establish the basis of a social provision system, which was inexistent before the Revolution. The satisfaction of the quantitative and even less, of the quality demand for housing of workers

remained as a dead letter in policy documents, with the exception of a few attempts before the creation of INFONAVIT in 1972. Until then, the term 'social' in social housing is not defined in any Mexican policy or regulation; 'social' remained as a discursive legacy of the goals of the 1910 Mexican Revolution and social security and social provision programs were never put into practice.

Despite social ideologies and institutional mission statements, practices in the Mexican political and economic system have negatively affected the production of workers' housing and the implementation of social housing programs. Labourers' housing has been historically characterised by political and economic strategies that have aimed to benefit the interests of those who regulate, construct and provide social housing, neglecting or ignoring the real needs with regards to housing of precisely those who it supposedly aims to benefit.

2. HOW IS 'SOCIAL' BEING TRANSLATED INTO THE BUILT ENVIRONMENT IN SOCIAL HOUSING?

The 1917 Mexican Constitution and the 1970 Federal Labour Law stated that it was a company's obligation to provide 'comfortable' and 'hygienic' accommodations to workers when it employed more than one hundred labourers within towns or cities, or when the work centre was located outside existing communities in which case, space for services and facilities such as schools and markets should be considered. Apart from what could be considered as a hint of a consideration of urban implications, there are not references to specific urban layouts or housing typologies when referring to work centres in the 1917 Mexican Constitution.

'Comfortable' and 'hygienic' were attributes that emerged from the discussion in 1916 at the Mexican Congress about what was needed in relation to workers' housing, that until the first decade of the 20th century, pushed labourers to live in crowded and unhealthy conditions without access to services and legal protection. Along with the concept of 'social', housing typologies linked to the working population emerged as a product of their political, economic and historical context, reflecting not only the discourse of a state, but also of social and architectural world trends, and individuals' ideologies involved in the production of housing.

What have been the main social housing typologies available to workers?

Workers' housing linked to the work centres

The location of work centres and the infrastructure required when providing housing as stated in the article 123 of the 1917 Mexican Constitution, were not attributes that emerged from the consideration of work centres as the stepping point of new communities. Instead, it

responded to the state's interest not only in protecting labourers' rights, but also companies' economic limitations. During the post-revolutionary stabilisation era, the state was keen to boost the national economy and protect small- and medium-sized businesses by not demanding too much, allowing them to rely on existing housing within towns if the number of employees was less than one hundred. When work centres were located disconnected from existing communities and when more than one hundred people were employed, the requirement of services and facilities attempted to rely on the private capital to provide and finance the necessary infrastructure, since the state could not cope with the increasing levels of industrialisation. Although records of any of the article 123's requirements put into practice were not found, there were records of companies providing housing, services and facilities around work centres before and after the 1910 Mexican Revolution and not related to any constitutional specification.

French owners of and investors in the manufacturing and mining industry in Mexico during the 19th century brought the company town model, along with the ideas and debates that humanists and architects were producing in France. These debates were concerned with providing hygienic and sufficient living space for workers, and the provision of leisure facilities, schools and churches. This would allow employers to keep their labourers' behaviour under surveillance and their social life close to the work centre. This model was criticised due to the patronising attitude towards labourers, and after the Mexican Revolution as a mean to control the extent to which workers organised themselves in unions. Still, company towns found around Mexico became the nucleus of communities that would later become towns and cities that still exist in the present, and remain as isolated examples of private capital invested in housing for workers in Mexico before INFONAVIT's foundation in 1972.

The modernisation of the working class

Instead of company towns that revolved around mines or factories, new neighbourhoods or working-class *colonias* were created between the 1920s and 1940s sometimes close to work sources within the capital. These *colonias* aimed to benefit low- and middle- income workers who were not part of a national housing program, but of a selective response to the demand for housing of specific workers' organisations and unions mostly around Mexico City.

Despite the selective character of this type of housing, the urban design of these *colonias* showed a consideration of the urban image and layout, also thought to work as the connection to still undeveloped parts of the city. The allocation of services such as schools

within these neighbourhoods responded to one of the inherited goals of the Revolution, which was not only to provide housing and land to workers, but also access to education. Education was part of the socialist ideology behind the revolutionary movement that attempted to modernise the working class attracted intellectuals.

This modernisation tendency continued in the first state housing programs during the 1930s until the 1960s, with the appointment and participation of renown Mexican architects in the design of labourers' housing that carried in their style a strong influence from foreign architectural tendencies, such as functionalism in the case of Juan O'Gorman's schools and houses during the 1930s and 1940s, and modernism during the 1950s and 1960s in the work of Mario Pani and his multi-family middle- and high-rise housing complexes. These architectural styles were and have been highly criticised due to a lack of aesthetics, disconnection from the social dimension of housing, and a deterministic approach to design. Nonetheless, it is undeniable that the ideology behind such trends contained a social commitment and social ideals that aimed for an improvement of workers' quality through a rational design of the built environment.

One-storey single-family typology

The single-family typology that appeared in the late 1980s as part of INFONAVIT's housing stock offered workers the possibility of fulfilling the aspiration of many Mexican families, which is to own not only a house, but also a piece of land. Housing developments containing one-storey single-family dwellings in 90 square-metre plots, with space at the front for a garden or parking, a patio at the back, with two bedrooms, one bathroom, a common area for dining and living furniture, and a kitchen, became the archetypical social housing unit or 'INFONAVIT house' throughout the country.

Social housing developments stopped being custom-made for each case; single-family dwellings became prototypical layouts designed in Mexico City, and constructed throughout the country without taking into consideration the climatic, geographic, demographic or cultural differences of each region. This criteria behind the design of social housing produced monotonous housing developments that populated the outskirts of cities, disconnected from city centres and in many cases, lacking public transport of urban facilities at the moment of their culmination. After the 1992 neoliberal reforms, this typology of housing was kept as the archetypical social housing model. Although other typologies such as multi-family buildings kept being built, the single-family dwelling remained as the most marketable product for private developers. Repetition and monotony remained as characteristics of the post-neoliberal

social housing projects, as well as the disconnection from the city centres and lack of urban infrastructure.

Despite the continuity of some of the negative assets of this typology, a crucial characteristic differentiates housing built before and after 1992, which is the size of the dwellings. Houses offered before the neoliberal reforms were considerably larger than those offered in recent years. The size of housing along with the material quality of the houses has gradually decreased since 1992, a change that reflects issues found in the following sub question, and that also became relevant for answering the last research question of this study.

How have economic and political reforms impacted the physical production and characteristics of social housing since the creation of INFONAVIT?

The death of INFONAVIT's 'social' architecture

The era of an architecture with a 'social' character inspired in revolutionary ideals and architectural trends lasted less than two decades for INFONAVIT; the change from high- and middle-density multi-story housing to low density single-family dwellings in the late 1980s anticipated the land reforms that would come after 1992 with the neoliberal reforms applied to land and housing regulations and policy.

A social ideology inspired in international architectural trends and the landscape social role seen in the first INFONAVIT housing developments was not present in the architecture of the new single-family dwellings offered by the late 1980s. A 'social' character remained on the solidary nature of INFONAVIT's solidary housing fund and on the strict construction supervision that the institute held. After the neoliberal reforms implemented in 1992, the solidary fund disappears and the production of housing is left to the private sector, the latter having a direct impact on the construction quality of the dwellings.

Nonetheless, it was found that the loss of the 'social' character of INFONAVIT's architecture could not be attributed solely to the neoliberal reforms to housing and land policies. Bad practices inherited from the clientelist relationship between workers' organisations and the ruling political party had an influence on the quality and efficiency of the social housing production process within INFONAVIT, such as the change from 'internal promotion' to the 'external promotion' system. This multiplied the actors involved in the construction and provision of housing, hindering a clear administering of the housing fund and the construction supervision of housing projects and increasing the cost of housing. As

declared by an interviewee, INFONAVIT's construction sites and fund became a petty cash source for constructors, leaders of workers' organisations and politicians' relatives.

The materialisation of neoliberalism

The 1992 reforms applied to housing policies did not bring new typologies to the social housing stock; the one-storey single-family dwelling model was maintained as the most marketable product by private developers after being delegated the construction process. The impact of the neoliberal changes was seen on the size of the dwellings and the material quality of the constructions, which did not respond to policies' or regulations' specifications. It responded on the one hand, to the change in the housing credits system and use of minimum wage as a measuring unit, and on the other hand to private developers pushing housing construction costs to the minimum in order to obtain as much profit as possible.

In relation to the change in the credit system, workers would qualify for credits on a points-based system, considering their age, time working on their job, and income. Credits would from 1992 be organised in a stratified system, where each category would allow access to a determined amount of money and therefore, a determined size of housing. Social housing fits in the lowest category of the points-based system and it is the only type of housing for which subsidies are granted. On the other hand, the credits for social housing allowed acquiring a house where the sale price should not exceed the amount of the credit granted. For private developers the latter meant to fit into the credit limits the construction costs of the house and of the urban infrastructure provided within the development, while still maintaining a convenient profit margin. As well, given that credits were established in certain times the minimum wage, construction materials' costs could vary and rise not in proportion to the adjustments made to minimum wages, which were negatively affected by inflationary rates.

In order to maximise profits, private developers lower the overall cost of housing through the use of mass-production or standardised processes for speeding up delivering times, in some cases the use of cheap labour in their construction sites, and the acquirement of cheap land usually located on the outskirts of the cities. Private construction companies' interest in producing profit cannot be criticised or expected to act against its nature such as with charity institutions. Nevertheless, the techniques used for reducing the housing production costs sacrifice quality over quantity, negatively affecting the quality of everyday life of social housing beneficiaries.

What have been officials', planners', and designers' assumptions behind the production of the built environment in social housing?

<u>*The planning of cities*</u>

The testimony of the Sub director of Housing Developments on the other hand, revealed that some constraints were less linked to political agendas and more to private capital agendas. Despite the Council's interest in developing residential areas around the city sooner than others or in the case of social housing, away from informal settlements or dangerous neighbourhoods, or close to the city centres, it is really the market which determines when and how areas destined to residential use are developed. The question of who is accountable to whom in the relationship between local governments and private developers, revealed inappropriate practices within governmental institutions that still follow a corporatist approach to the housing process. The design and planning of the built environment is not seen by local authorities as a factor that can hinder or facilitate the everyday life of people, or even less as potential mean for improving the quality of life of the most vulnerable parts of the population.

<u>*INFONAVIT*</u>

The participation of the official working for INFONAVIT's in the city of Mazatlán in different areas of the institute since its foundation, revealed the institute's gradual loss of 'social' character in the physical production of social housing. The assumption behind the decisions made within the institute as part of his construction supervisor role during the 1970s, was that INFONAVIT served the interest of workers and aimed to benefit low-income labourers with good quality housing. This ideology followed the institute's principles expressed by INFONAVIT's first director, in the institute's law, and its mission statement.

In practice, these principles were observed through the thorough and high quality supervision of construction sites during the time INFONAVIT still worked with the 'internal promotion' system. After the changes to the 'external promotion' system, construction sites became a petty cash source for those building for INFONAVIT undermining the finances of the institute with regards to the construction of housing developments. During the 1980s, close relationship between INFONAVIT officials and politicians was evident in the creation of small construction companies to which housing developments were commissioned. These construction companies usually owned by officials' or politicians' relatives, refused to be thoroughly supervised and disappeared as soon as they finished the job they were commissioned by INFONAVIT.

Once more, a view from the inside of the institute revealed the effects of bad practices on the physical production of social housing, and the relationship between actors involved in the process. The loss of the 'social' character relied on the one hand, on the surrender of the supervision of construction sites and the construction of housing developments to clientelist and corporatist relationships. On the other hand, to the change from a solidary fund to a stratified credit system after the 1992 neoliberal reforms, and the delegation of the production of housing to the private sector that turned INFONAVIT into a banking institution that nowadays appears to care for the interests of private capital more than of the interests of workers.

Private developers

Interviewees working for private developers included those involved in the urban and architectural design process, and in the marketing of housing. Those in charge of the design process revealed strong deterministic assumptions when designing social housing, as well as a view of social housing mostly as a profit-driven business.

In relation to the determinist approach to design, designers did not consider the low material quality of housing and the fast-production construction methods to be a problem in social housing. There is a conviction that what has been produced by the private sector in relation to social housing responds first of all to the quantitative demand for housing; the real success of the production of housing with private capital relies on the number of housing units and housing developments produced every year. Improvements in the quality design of housing are interpreted as more marketable solutions, translated into houses with different facades that distinguish them from those constructed by other private developers. Competition drives developers to offer minor variations in their products, usually in the shape of adornments or decorative elements such as cornices or mouldings in the facades. The internal distribution of the houses and the construction methods and materials are the same in every house, regardless of the construction company in charge.

The internal distribution is entirely taken for granted and no attention is paid to the quality of the everyday life of residents. Instead, what it is considered to actually play a role on the life of people is the distribution and organisation of houses within the development; by grouping houses in cul-de-sacs for examples, developers claim residents will know their neighbours, get along and therefore, a safer environment will be created. In addition to a determinist approach, designers showed a patronising attitude towards social housing beneficiaries, claiming on the one hand, that whatever is offered to low-income workers will be

appreciated by them regardless of the quality. On the other hand, that the problems related to the lack of construction flexibility of the houses is due to the lack of knowledge from residents and independent construction workers on how to modify the houses. The same attitude was evident in interviewees with the construction team in charge of the supervision of one housing development.

Nevertheless, the closer the role of the interviewees was in terms of direct contact with residents, the more reflective they were in relation to the impact of housing on the everyday lives of residents. Sales managers, credit advisors and salespeople revealed an awareness of the reduced size of the houses and the decreasing size tendency over the years. Although they did not refer to the material quality of the dwellings, which they claimed had no problems, they confessed changing the size of housing is out of their hands and that social housing institutions such as INFONAVIT are the ones to blame, since they are the ones establishing the limits of credits.

The role of individual professionals in everyday practices

Each participant interviewed for answering Question Two was approached considering their role as part of an institution or company, and their professional assumptions to reflect the philosophy of the organisation they worked for. However, apart from their professional assumptions they were invited to reflect on their role in the physical production of social housing at a personal and individual level.

Many of the interviewees showed an awareness of some of the social housing problems identified in this research and either declared to comply with the way things are, or that although they wished to, they could not act differently due to the institutional, political, temporal, or economic constrains of their roles. Furthermore, those who wished to make a difference had at least an idea of what could be done in order to improve the quality of social housing. The reflection of these participants and the commitment of some to make a difference at least within the constraints of their roles shaped an analysis of the extent to which the role of individuals has had an impact on the history of social housing.

During the first years after INFONAVIT's foundation, the architectural typology that prevailed was the multi-family model, which inherited the superblock concept from the modernist movement. Housing complexes with multi-storey buildings included services and facilities such as schools, public libraries and parks.

Although not as INFONAVIT's officials, other Mexican architects such as Teodoro González de León (1926-) and Pedro Ramírez Vázquez (1919-2013) imprinted their style in other INFONAVIT's housing complexes that would become the largest in Latin America at that time. These two architects, although considered 'old school' in comparison to Schejtnan, also carried the idealist influence of functionalism and modernism in their design style.

Conclusion

In each of the typologies analysed, it was possible to identified assumptions and ideals behind the design criteria of labourers' housing until before the creation of INFONAVIT. In relation to the case studies selected for this research, the assumptions have changed through time and in accordance to the role of each actor interviewed. At urban scale, officials in Mazatlán City Council appear to have little time for assumptions and work within the constraints and rules of political agendas. In the case of INFONAVIT's interviewee, the social character of the institute's principles has been lost and remains as obsolete objectives of an organisation that has been turned into a banking institution. Finally, private developers' assumptions still follow the determinist approach to design but not the social ideology of modernism. Through this form of neo-determinism, the private sector attempts to get away with the commodification of housing and the construction of extremely reduced bad quality houses with a patronising attitude towards workers' actual needs.

3. HOW IS THE BUILT ENVIRONMENT IN SOCIAL HOUSING SHAPING THE EVERYDAY LIVES OF RESIDENTS?

The housing typology addressed for answering this question were one-storey single-family dwellings available for homeownership to low-income workers through an INFONAVIT credit. It was decided to focus on housing built before 1992 when INFONAVIT was still in charge of the physical production of social housing, and after the 1992 neoliberal reforms, when the production of housing was delegated to the private sector, the latter taking into account the importance of the historical perspective for the analysis of housing policy.

What are the physical, spatial and material characteristics of the houses provided?

Size of housing

Housing built before and after 1992 showed a significant difference in size in relation to the area of housing units (discussed in Chapter 6). This change in housing size represented a 34 per cent reduction of liveable area from 1988 to 2009 affecting the number of rooms within the dwelling. The internal distribution of housing in 1988, 2000 and 2009 took into account the

same amount of rooms (i.e. two bedrooms, one bathroom, kitchen and a common space for dining and living areas), although houses in 1988 had an antechamber connecting the two bedrooms. This antechamber offered flexibility in relation to the use of space, which could be used as the dining area while gaining space for the living room, as a place for storage (e.g. a closet, sets of drawers), a place for leisure (e.g. a telly room, sofas and bookshelves) or a place for working (e.g. a place for a sewing machine, for a desk with a computer).

The reduction in size in the most recent housing developments has a sacrifice of options with regards to the use of spaces. On the one hand, it has pushed residents to utilise spaces for multiple purposes and in some cases in a simultaneous manner; although was not considered a severe matter by the interviewees; it was acknowledged it provoked some level of conflict between inhabitants. On the other hand, since residents interviewed in 'Prados del Sol' (2000) were families with kids as old as the development or younger, the size reduction brought reflections from some of them about the options their soon-to-be-teenager children will have in terms of privacy inside the house or leisure activities within the development. This last reflection revealed the importance of the consideration of leisure spaces within social housing projects, which was found to be lacking in terms of maintenance, incomplete (in new developments), insufficient or inadequate. The design criteria of these spaces was found to be exclusively for fulfilling city council's regulations and in an arbitrary manner, using in some cases the 'residual' areas that resulted from crowded house allotments without much thought about the residents' needs.

Material quality of housing

Similar to the size of housing, it was possible to ascertain that the material quality of housing has changed since 1988 by analysing the construction methods and techniques used in the four case studies. The change in the construction methods responded to the interest of construction companies in fitting into INFONAVIT's cost and credit limits while still obtaining profit.

Social housing has been consistently built using masonry as the main construction technique in Mexico. Both construction methods are appropriate for housing construction and both use good quality construction materials available in the market; if applied with high construction quality standards, both methods can produce long-lasting and good quality housing.

Unfortunately, in some private developer's construction sites quality control is being sacrificed in order to achieve a quick mass-production pace. Construction workers' crews tend spend as little time as possible in each house to fulfil their daily or weekly quota, similarly construction supervisors may turn a blind eye for the same reasons. Work done by unqualified or badly paid construction labourers was also found to be the reason for bad material quality in social housing, which was corroborated by freelance construction workers, and resented by residents who have to deal with problems related to the structure of the house or installations after the occupation of their homes. The problems identified with the time residents take for moving to their new houses, the cost it represents, and the length and coverage of the construction companies' guarantees aggravate the consequences of the poor material quality of the social housing stock.

Construction methods and materials

Although not related to the material quality of the houses, the construction method used in new housing projects was criticised by residents in all the case studies. Hollow concrete blocks, which are perceived as materials mostly used in informal developments, and ceilings formed with prefabricated concrete joists and polystyrene vaults, made residents think of the new developments not as 'real' houses, 'real' houses like the ones made with red clay bricks and considered by them and by freelance construction workers to be a more traditional, dependable and flexible method. The idea of flimsiness and short livedness was present in most of residents' answers of the four housing developments when asked to reflect about the materials used in new housing projects.

Flimsiness was a concern that was found to be well founded, particularly in 'Pradera Dorada' (2007) and 'URBI Villa del Real' (2009), where prefabricated ceilings were built strong enough to cover the dwellings, but without considering a structural strength appropriate for the addition of a second storey. This last issue, forces residents in new developments to develop an extra set of foundations and supports for construction a second storey, hindering the modifications of houses due to the cost it represents.

How is the built environment meeting residents' needs, tastes and aspirations?

The needs, tastes and aspirations of residents were identified first through an analysis of the modifications made or not to their houses, the reasons behind such modifications, and the limitations they found during the process either emerged from their economic constraints, or from the physical characteristics of the dwellings. The latter analyses were considered key

issues since the modification of the built environment always represents an investment of some kind, which can be a considerable one when what it is planned requires the extension of rooms or the addition of a second storey; residents' power over their built environment is directly proportional to their economic capabilities.

Homeownership and autonomy

One of the needs social housing fulfils is first of all, the need for housing. Having access to housing is a priority for workers, and to own a house and a piece of land is as mentioned before, part of an aspiration many Mexican families have and the acquirement of an 'INFONAVIT house' is an achievement in itself for low-income workers. In general, interviewees acknowledged that if it was not for an INFONAVIT credit, they would have not had a real chance of achieving homeownership.

Homeownership came along with the idea of becoming independent; many of the interviewees moved from living with their parents or in-laws after getting married and before acquiring a new home. By moving out from relatives' houses, they acquired privacy and control over their own space. Crowding and the feeling of dependency were issues interviewees tried to overcome as soon as possible. Other interviewees wanted a house of their own in order to not pay rent and invest instead in an economic patrimony for their children. Renting somebody else's property was for them the equivalent of throwing money into the bin since on the one hand they could not modify their rented accommodations according to their needs, and on the other hand, monthly payments could instead be towards reducing a housing credit debt.

Safety and privacy

Through direct observation, it was possible to record that the majority of the houses in the four case studies that were part of the sample did not have considerable modifications in terms of room enlargements or extra storeys. This could be easily interpreted as a sign of residents' satisfaction with the internal distribution and liveable area of the houses. However, based on the premise that residents' power over their physical surroundings depends on their economic capabilities, such satisfaction was not taken for granted and rather was considered to be a rather simplistic explanation of the lack of major modifications. From the latter analysis, residents' priorities when modifying their homes helped identify their needs, interpreted as the look for safety and privacy before moving to higher needs such as the enlargement of the house, flooring, or the refurbishment of kitchens.

As found in the analysis of the physical characteristics of the houses provided before and after neoliberal reforms in 1992, the size of one-storey single-family housing suffered a considerable liveable-area reduction, also reducing residents' options in regards to the use of internal spaces. Despite the reduction in area, there was not a significant difference between modifications made to houses in 'INFONAVIT Jabalíes' (1988) and 'Prados del Sol' (2000). Nevertheless, and as mentioned at the beginning of the previous finding, the lack of major modifications was not assumed to be a result of residents' satisfaction about the size of their homes.

Nearly all households considered for this study confessed that although they had plans for modifying their homes, through time they faced economic constraints that hindered the achievement of their aspirations. Those constraints were related to the first large economic investment they had to make before moving in, particularly in the case of 'Prados del Sol' (2000) where residents had to spend a considerable amount of money in boundary walls, protections, and the cost of energy and water contracts. In 'Prados del Sol' and 'INFONAVIT Jabalíes' it was acknowledged by participants that having children or kids starting school impacted on their family budget to the extent of having to postpone or completely forget about their modification plans as time went by.

The latter finding had a dual ramification during the analysis. On the one hand, it spoke about extra space being an asset many residents aspired to and saw as a priority, mostly for achieving privacy to the inside of the house, spaces for children to study and play safely, or simply for retreating and reading a book and having time for one self, as one resident in 'Prados del Sol' regretted. The feeling of resignation when not having been able to reach their goals was present in most interviewees, however there was a crucial difference in the way they processed this emotion in each housing project.

In 'INFONAVIT Jabalíes' (1988), resignation was present but was overpowered by the idea that the house was not that reduced, therefore more space was not such a critical problem even after 25 years of living there. In 'Prados del Sol' (2000), more liveable area was also desired and still seen as a priority at the moment of the interviews considering the reduced size of the rooms inside a 48 square-metre house, where there was not enough space for storing, closets, or sufficiently furnishing their living and dining area. Still, residents from 'Prados del Sol' considered themselves in a better situation than those living in new developments such as 'Pradera Dorada' (2007) and 'URBI Villa del Real' (2009).

In these last two housing projects, the liveable area of housing was pushed to unjust limits, as residents considered it. With a couple of exceptions in 'Pradera Dorada' of couples that did not plan on having children, all residents who in their majority were young couples, saw extending their houses to be necessary and most of all, urgent. Small bedrooms leave very limited space for allocating the minimum amount of furniture needed, and the living and dining area has become so reduced that in the majority of the houses visited interviewees had to literally choose between living and dining furniture, usually opting for the first. As observed in one case where a participant kept a table for four she brought from her previous home and placed it outside the house where she and her husband ate, the patronising arguments of developer companies about people not knowing how to furnish their homes sound like an insult, as expressed by more than one interviewee in these two developments.

The resignation to live in small houses is occurring in hand with economic and urban marginalisation for beneficiaries of social housing programs. Although homeownership is a need that is being satisfied, gaining a house is not automatically representing an economic betterment.

No space for tastes and aspirations

On the other hand, the reasons behind not having achieved their goals in relation to modifying their homes, which were usually linked to economic constrains, revealed that residents' needs followed a clear hierarchy after satisfying their need for housing (homeownership). This was followed by achieving the minimum requirements of safety and privacy standards for them to occupy the house (boundary walls and protections) and only after having achieved the latter they considered other plans such as enlarging rooms, building porches or refurbishing kitchens. Since these last aspirations that helped them reach better levels of privacy and functionality inside the house were rarely met, other assets such as tastes in architectural styles or ornamentation were discarded as superficial or unachievable. Tastes and aspirations rarely emerged during residents' testimonies when reflecting about the goals met during their lifetime in relation to the physical characteristics of their homes, being homeownership and autonomy the only aspiration they saw fulfilled.

Between investing in safety and privacy and to relinquish to other investments in the house considered crucial for improving their quality of life, residents' lives and therefore needs change through time; events such as parenthood or children attending to school or becoming teenagers can turn the need for space into a priority. Other events quite common in Mexican

families such as grandparents or other relatives sharing one house, or turning the house into a business (i.e. convenience store, internet café), question the spatial adequacy of social housing.

> ***How do officials', planners', and designers' assumptions behind the production of the built environment in social housing compare or not to residents' needs, tastes, and aspirations?***

City Council officials' understanding of the importance of the location of housing projects in relation to the city centre or other neighbourhoods was shared by residents who were aware of these issues on a daily basis, since those issues had an impact on their everyday lives. It was uncomfortable for residents in all developments to have to move to a development still under construction and disconnected from their job sources. The latter in addition to the lack of amenities and facilities within and around the housing project, made residents feel vulnerable and unsafe.

The 'social' character of social housing preached by INFONAVIT and social housing programs was not seen by residents in developments built particularly in 2007 and 2009 as a real help for workers. The size of housing and the material quality was a concern for most of the interviewees in 'Pradera Dorada' (2007) and 'URBI Villa del Real' (2009), since it meant starting a family and a new life with insufficient area to achieve privacy or to enjoy a house furnished in accordance not even to their tastes, but to their everyday needs. The material quality of housing and the cost it would represent to adapt it to their changing needs also represented a concern; they thought that the latter along with the amount of money paid in the long term for covering the housing credits, made social housing something from which only private developers were benefiting. Overall, they felt cheated by developers and let down by the state.

In 'INFONAVIT Jabalíes' (1988) on the other hand, the majority of residents felt they were fortunate to have been able to acquire a 58 square-metre house in comparison to what workers have available in the present. Even residents in 'Prados del Sol' (2000) shared the latter thought about their 48 square-metre homes, although they wished they could have a better material quality for what they paid or were paying. Therefore, the 'social' character of social housing is not understood as just the satisfaction of the need for shelter or the right to a credit, but as the provision of a good quality stepping-stone for workers, and the opportunity to create an economic patrimony for their children.

Private developer's assumptions were the ones that clashed the most with residents' view of their homes. The deterministic approach to the design of housing was challenged by

the majority of the interviewees in all developments who found it to be an extremely patronising attitude. Interviewees in 38 square-metre houses considered developers' argument that houses are not small to be an insult, and that the problems with the internal distribution related to residents not knowing how to properly furnish their homes. Residents valued more good quality construction that did not result in extra expenses after occupying it, and enough space for developing daily activities to be more important than pretty facades or cul-de-sac layouts.

Conclusion

There is a radical difference in the liveable area, internal distribution and size of housing provided by INFONAVIT and that built by the private sector. The tendency of these attributes flows in a decreasing manner, directly responding to the political and economic changes that have impacted housing policies in Mexico. The reduction of size and quality of social housing disregards the needs, tastes and aspirations of Mexican families, and responds exclusively to the interests of private developers.

During the identification and analysis of residents' needs, tastes and aspirations in all the case studies, it became clear that social housing has satisfied the quantitative need for housing, allowing low-income workers to have access to homeownership. Furthermore, the acquisition of shelter was not what labourers exclusively aspired to; housing was a way for achieving personal and economic independence and the opportunity to set the basis of a physical and economic patrimony for their children. It was found that when having the latter needs satisfied – homeownership and autonomy -, residents felt they could move to higher levels of satisfaction, related to tastes or future aspirations.

The assumptions behind the physical production of housing from the different actors interviewed showed in general, an awareness and acknowledgment of the complexity and contradictions of the social housing process. All the interviewees' responses reflected their stand as a professional or representative of each sector and were reflections from within the limitations of their own roles. Although their roles are in some cases carried out without much expectations or intentions of making any difference due to the political and economic constraints they have to face on a daily basis, some interviewees felt uneasy at a personal level about the commodification of housing and overall approach to social housing and social housing beneficiaries. However, the point of view of private developers is a reflection of the neoliberal housing market agenda, dominated by a profit-seeking strategy that disregards the social dimension of housing.

8.2 THEORETICAL AND POLICY IMPLICATIONS

This research was made based on an interdisciplinary approach, acknowledging the need for a deeper understanding of the relationship between people and their built environment, while considering the social, physical and temporal dimensions of housing. This thesis made a strong case around the need to approach the understanding of social housing through a holistic strategy that takes into account the points of view not only of the residents of housing projects, but also the different actors involved in the regulation and planning of housing in Mexico. The consideration of a holistic approach contributes to the call for the inclusion of housing studies into wider issues of social structure in the literature (Kemeny, 1992; Weber, 1992).

The original contribution of this thesis relates also to the broadening of the dimensions of housing identified by Villavicencio (1996, 1997) and Villavicencio and Durán (2003). This research has presented that through the understanding of housing and each of its dimensions not as fixed zones of study but as flexible and context-dependent areas of research, new elements can be added for a more in-depth analysis of housing. On the one hand, this research identified additional elements as part of the social and physical dimension of housing that contribute to a better understanding of the meaning of home.

This research has presented that broadening through the analysis and understanding of housing and each of its dimensions not as fixed zones of study but as flexible and context-dependent areas of research, meaning new elements can be added for a more in-depth analysis of housing. On the one hand, this research identified additional elements as part of the social dimension, and on the other hand of the physical dimension of housing that contribute to a better understanding of the meaning of home.

In relation to the social, the meaning of home linked to the cultural significance of land has shown the importance of homeownership in the Mexican context. The relevance of homeownership for families is a concept that should be taken into account when exploring other forms of housing credits provided by public institutions, such as housing for rent or high density housing, since it provides the basis of an ontological security linked to a place, contrary to residential mobility trends displayed in countries like Britain or the United States.

In regards to the physical dimension, the focus of this research on the spatial and material characteristics of the houses has helped to understand how the size reduction is not allowing the achievement of basic human needs such as safety and privacy, hindering residents

from reaching their personal aspirations and particular needs. Other potential areas of research emerged from this dimension, which although were not covered in-depth during the analysis but were discussed by residents, relate to the idea of spatial flexibility. For residents, flexibility referred to the internal distribution of the houses and the possibilities it allowed when modifying their homes; although they knew their homes could be enlarged, they were aware they would lose natural illumination and ventilation by enlarging rooms to the front or to the back or by subdividing them. As well, the cost of the modifications over time and the difficulties they had for achieving them, were also considered factors that contradicted developers' claims about offering flexible housing. For developers, flexibility is limited to the use of fast construction methods of which residents could take advantage when modifying their homes, and to the enlargement of rooms and the addition of an extra storey as part of the possibilities offered by their design, but not by the eventual cost of the modifications. The study of the abovementioned elements can inform not only a broader methodological approach, but also the design process of social housing.

On the other hand, this study contributed with the addition of a temporal dimension to Villavicencio's (1996, 1997) and Villavicencio and Durán (2003) methodological proposal. This research emphasised the importance of the consideration of the historical perspectives when studying housing (Jacobs, 2001) not only for understanding current housing problems, but also for the betterment of a planning process that truly looks into the future. At the scale of the dwelling, this research highlighted that time also plays a role on the impact of the physical characteristics of the built environment on people's choices, hindering or facilitating the satisfaction of their needs, and the achievement of their aspirations and tastes.

Finally, this research suggests that more attention needs to be given to the inclusion of the social and physical dimensions of housing in policies and regulations, and that a qualitative assessment of social housing by private and governmental institutions, only disregards the actual needs of people in relation to their built environment, turning housing solutions into potential sources of social, urban and economic problems.

8.3 METHODOLOGICAL IMPLICATIONS

The methodological strategy used for this research was a qualitative approach, drawing on semi-structured interviews, on policy and documents analysis, on direct observation, and on visual techniques. This strategy was instrumental in revealing the complex details of both residents' views, stories and experiences with their homes, which was needed to reveal the

conflicting assumptions and goals of developers, contrasted with residents' needs, tastes and aspirations with regards to their houses.

An important methodological contribution of this research was the development of sketches by the researcher during the development of fieldwork, which as explained in Chapter 4, helped overcome the lack of access to many of the participants' houses due to issues related to privacy and safety. Drawings in social sciences have been used in different, yet overlapping areas for understanding how people make sense of the world. Drawings have been useful tools in health and psychology research (Guillemin, 2004; Nowicka-Sauer, 2007), education (Köse, 2008), arts-informed research (Cole & Knowles, 2011; Knowles & Cole, 2008) and participatory visual methodologies (De Lange, Mitchell, & Stuart, 2007; Pink, Kürti, & Afonso, 2004; Rose, 2001).

Drawings as a method are also commonly found in research conducted with children (Einarsdottir, Dockett, & Perry, 2009; Mitchell, 2006; Punch, 2002) in order to overcome what might be considered an advantage adults have for communicating when using 'traditional' social sciences methods (e.g. interviews, surveys, questionnaires) (Mitchell, 2006). Thwaites (2001) and Thwaites and Simkins (2007a, 2007b) used drawings made by children, for understanding their experiences with their landscape and perceptions of their neighbourhood.

Nevertheless, the above-mentioned examples of drawings and research methods relied on the willingness of participants to develop drawings, which in some cases can be an obstacle for those who believe they lack the skills or the time for completing them, as experienced in this research. This research drew on and developed the professional advantage of the researcher's architectural training to develop sketches during the interview, similar to the dialogue an architect would have with a client, which had the methodological benefit of simultaneously translating the interviewee's ideas onto paper, while triggering processes of spatial awareness and reflectivity in the participants.

The use of drawings and sketches during post-occupational studies and assessments can provide a richer understanding of residents' needs, tastes and aspirations. Interviewees observing a representation of their house's layout, or the translation in lines and scribbles of what they were narrating allowed them to reflect about and even to be surprised when they became aware of the way they experienced and lived their lives within their physical surroundings. Additionally, sketches can become a powerful voice for residents for expressing ideas or narrating experiences with their houses that they could not do in their own words.

While correcting or approving what the researcher put down on paper, this data collection strategy was turned into a useful and reliable method when analysing the relationship between people and their built environment.

8.4 PRACTICAL IMPLICATIONS

One of the strengths of this research is the multi-disciplinary approach taken for a deeper understanding of the home, the house, and housing, which acknowledges the complexity and multi-dimensional nature of these terms since they involve people and their perceptions, buildings and their physical characteristics, and the materialisation of policies and institutions' actions in the built environment. Due to this multi-disciplinary approach and particularly architectural- and design-oriented analysis, the knowledge acquired through this research is considered useful for planners and designers, developers, and policy makers involved in the production of housing.

It is expected this research will help the different actors involved in this process to cultivate an awareness of the importance of the meaning and perception of housing for people, as well as the consequences of the physical characteristics and housing policies on the everyday life of residents. The debates that emerged from this study related to material quality, spatial quality, and flexibility, are expected to invite professionals in practice, to employ these concepts rather than focus discussions simply and exclusively on cost, size, and construction methods and thereby assuming that these are the only factors that determine satisfaction. The 'social', and the associated social implications through time of the physical characteristics and cost of housing in the quality of life of residents, must be informed not only through quantitative costumer satisfaction surveys, but through thorough qualitative longitudinal analyses that do not focus only on the early months after the occupation of the dwellings but extend to more meaningful engagements with how residents actually live in their houses.

8.5 RECOMMENDATIONS FOR FUTURE RESEARCH

This research acknowledged social housing as a multi-dimensional realm, and for its analysis it did not focus exclusively on only one of the aspects of housing, rather it examined multiple dimensions (i.e. policy and regulations, houses and construction techniques, people and their subjective experiences) explored in the literature review presented in Chapter 3. The consideration of all these aspects during the development of this research, allowed the construction of a holistic approach to a universe that involves the interaction of people,

objects, and institutions. It was believed that the consideration of each of these parts required a contextualisation not only in space but also in time, since housing is a continuous process.

Time in housing policy is a topic that needs to be explored at a deeper level, since events that determine the way housing is regulated and produced today have been inherited from past perspectives, and without their understanding from a policy historical perspective, improvements to social housing are close to impossible. At a smaller scale, temporality in housing was found to be an unexplored concept, at least at a holistic level. Temporality in this research referred to the residents' timeline after occupying their dwellings, which although has been explored in residents satisfaction and post-occupational studies, has not been addressed in-depth in relation to the possibilities offered by architecture and the built environment in accordance to people's changing needs, tastes and aspirations.

APPENDIX A. TABLE OF INTERVIEWEES

TABLE OF INTERVIEWEES: PROFESSIONALS AND CONSTRUCTION WORKERS

	INSTITUTION / COMPANY	DESCRIPTION	CITY	ROLE
	Private developers			
01	**Consorcio ARA**	One of the top five private developers at a national level and one of the three developers included in the iH	Mexico City	Architectural Design Manager
02	**Grupo Linear LINEAR**	Private company outsourced by INFONAVIT for supervising the construction of housing developments.	Mexico City	Construction site supervisor
03	**HOMEX**	Housing developer in charge of the construction of 'Santa Fe'.	Mazatlán	**Construction Coordination Team** Chief resident architect in Santa Fe Quality resident architect Construction resident architect Construction resident architect
04	**FINCAMEX**	One of the top three private developer companies in the north-west	Mazatlán	Project manager
05	**Constructora MEZTA**	One of the top three private developer companies in the state of Sinaloa, in charge of the construction of 'Pradera Dorada' (2007)	Mazatlán	Sales manager
06	**Constructora MEZTA**		Mazatlán	Sales woman
07	**Constructora MEZTA**		Mazatlán	Sales woman
08	**URBI**	One of the top five private developers at a national level, in charge of the construction of 'URBI Villa del Real' (2009)	Mazatlán	Credit adviser
09	**URBI**		Mazatlán	Technical manager
	Officials			
10	**INFONAVIT**	Workers' National Housing Fund	Mazatlán	INFONAVIT Official
11	**Mazatlán City Council**		Mazatlán	Sub director of Planning
12	**Mazatlán City Council**		Mazatlán	Sub director of Developments and Urban Planning in Mazatlán's City Council
	Real estate appraisers			
13	**College of Appraisers**		Mazatlán	Member of the College of Appraisers of the state of Sinaloa
14	**APRONO**	Appraiser company certified by INFONAVIT	Mazatlán	Director

	Freelance construction workers
15	**Prados del Sol**
16	**Pradera Dorada**
17	**Pradera Dorada**
18	**INFONAVIT Jabalíes**
19	**URBI Villa del Real**

LABELS FOR TABLE OF RESIDENTS (NEXT PAGE)	
●	**Modifications made to the house**
○	**Included with the house**
○	**Included with the house for an extra cost**
1	Boundary wall
2	Porch or garage
3	Protections
4	Indoor floor
5	Outdoor floor
6	Kitchen refurbishment
7	Enlargement at the front
8	Enlargement at the back
9	Second storey
10	Cover slab over the back patio
11	Moving bathroom to the back
(F)	Female
(M)	Male

TABLE OF INTERVIEWEES: RESIDENTS

1988 INFONAVIT Jabalíes (InJa)

	PSEUDONYM	PEOPLE LIVING IN THE HOUSE	MODIFICATIONS MADE TO THE HOUSE										
			1	2	3	4	5	6	7	8	9	10	11
01	Abril (F) and Adelaida (F)	5	○	●	○	●	●	●		●			●
02	Adela (F) and Antonio (M)	6	○	●	○	●	●	●	●	●	●		
03	Adriana (F)	4	○	●	○	●		●					
04	Alejandra (F)	3	○		○							●	●
05	Alfonsina (F)	6	○	●	○			●					●
06	Alicia (F)	2	○		○								
07	Aida (F) and Abel (M)	3	○		○								
08	Amanda (F) and Adolfo (M)	7	○		○	●							
09	Amparo (F) and Alberto (M)	2	○		○								
10	Ana (F) and Andrés (M)	3	○	●	○			●	●	●	●		●
11	Ángela (F) and Aurelio (M)	3	○		○			●	●				
12	Azucena (F)	2	○		○	●		●					
13	Álvaro (M)	4	○		○	●		●					

2000 Prados del Sol (PrSo)

	PSEUDONYM	PEOPLE LIVING IN THE HOUSE	MODIFICATIONS MADE TO THE HOUSE										
			1	2	3	4	5	6	7	8	9	10	11
01	Bárbara (F) & Belinda (F)	5	●		●	●							
02	Beatriz (F)	4			●								
03	Begoña (F)	3	●		●	●	●	●					
04	Belén (F) and Benito (M)	4	●	●	●	●	●						
05	Benjamín(M)	4			●		●						
06	Bernardo (M)	2	●		●	●							
07	Bernardina (F)	5	●	●	●	●	●	●					
08	Berta (F) and Braulio (M)	4	●		●								
09	Bibiana (F)	5	●	●	●	●	●	●	●	●	●		
10	Blanca (F)	4	●		●								
11	Brenda (F) and Benicio (M)	4	●	●	●	●	●	●	●		●		
12	Briseida (F) and Baldo (M)	4	●	●	●	●	●	●			●		
13	Blás (M)	3	●	●	●								

2007 Pradera Dorada (PrDo)

	PSEUDONYM	PEOPLE LIVING IN THE HOUSE	MODIFICATIONS MADE TO THE HOUSE										
			1	2	3	4	5	6	7	8	9	10	11
01	Caetano (M)	3	●		●				●				
02	Carlota (F)	2	●		●	●	●	●					
03	Carlos (M)	2	●		●	●	●						
04	Carolina (F) and Camilo (M)	6			○								
05	Catalina (F), Carla (F) and Camelia (F)	4	●		●	●							
06	Cecilia (F)	3	●		●								
07	Clara (F)	2	●		●	●		●					
08	Claudia (F) and Calixto (M)	3	●		●								
09	Constancia (F)	5	●		●	●		●					
10	Cornelia (F)	2			○								
11	Cristina (F)	3			●								
12	Celia (F)	2			●								

2009 URBIVillas del Real (Urbi)

	PSEUDONYM	PEOPLE LIVING IN THE HOUSE	MODIFICATIONS MADE TO THE HOUSE										
			1	2	3	4	5	6	7	8	9	10	11
01	Danaé (F) and Daniel (M)	4	●		●								
02	Dalia (F)	2	●		●	●							
03	Daniela (F)	2	●		●								
04	Daría (F)	5	●		●								
05	Dante (F)	1			●								
06	Diana (F) and Diódoro (M)	3	●		●								
07	David (M)	3			●								
08	Digna(F)	4	●		●	●		●					●
09	Dionisia (F)	2	●		●								
10	Demetrio (M)	1	●		●								
11	Dulcinea (F) and Donaldo (M)	2	●		●								
12	Dorotea (F)	3	●		●								

APPENDIX B. ARCHITECTURAL LAYOUT OF A 38 SQUARE-METRE SOCIAL HOUSING UNIT PROVIDED TO RESIDENTS IN URBI VILLA DEL REAL, MAZATLAN, MEXICO

GROUND FLOOR
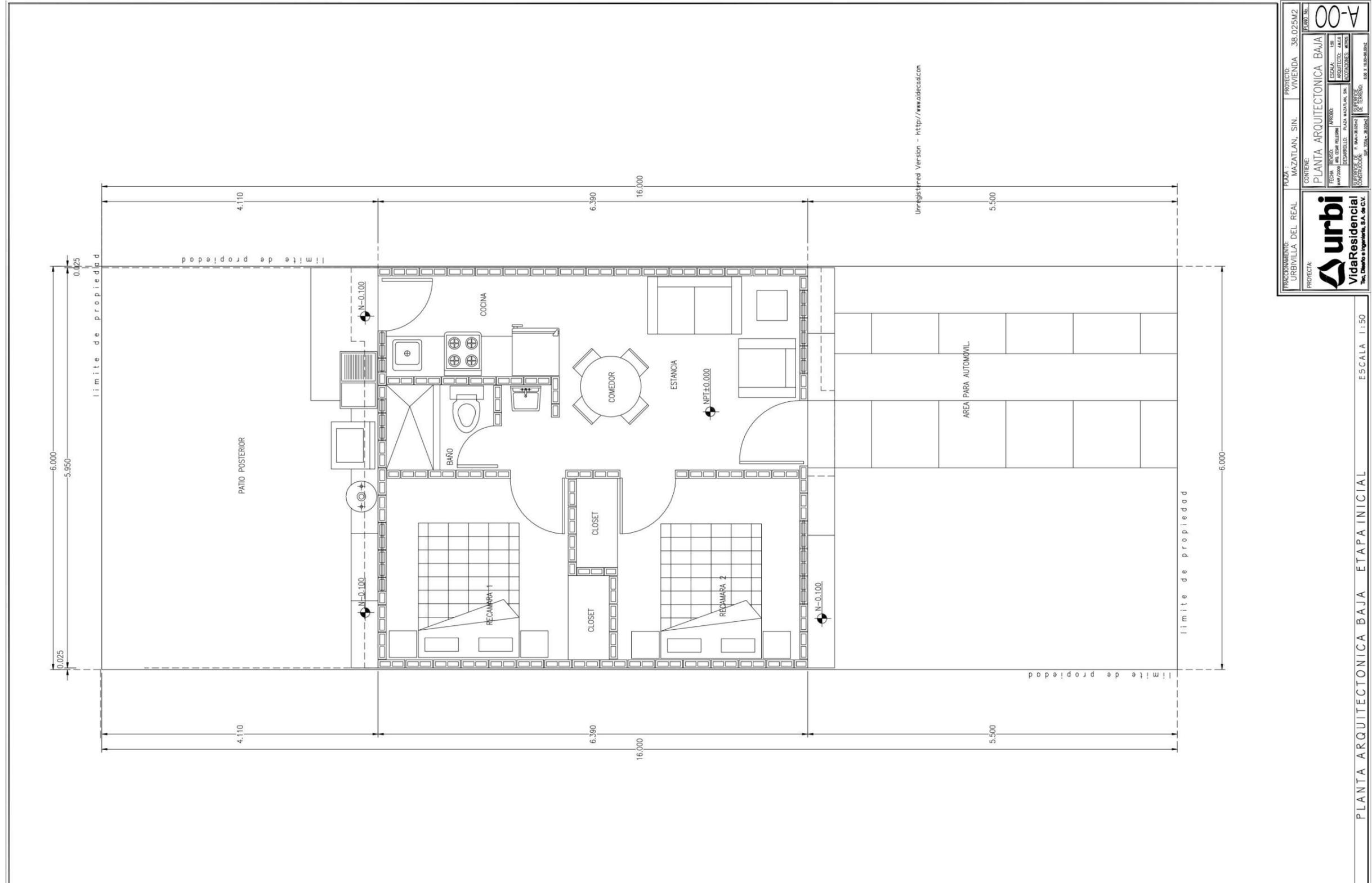
Source: Technical Manager at URBI, Mazatlán

APPENDIX C. INFONAVIT'S POST-OCCUPANCY ASSESSMENTS

ISA ASSESSMENT CONCEPTS

Figure 24. An example of the results publication of ISA at a national level.
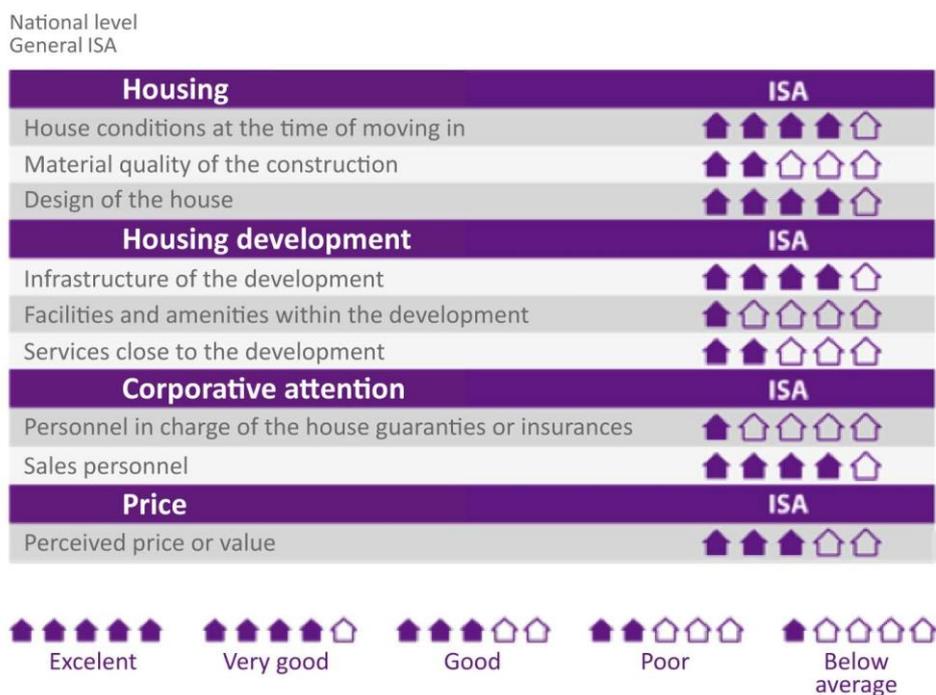

Source: www.INFONAVITpublica.org.mx

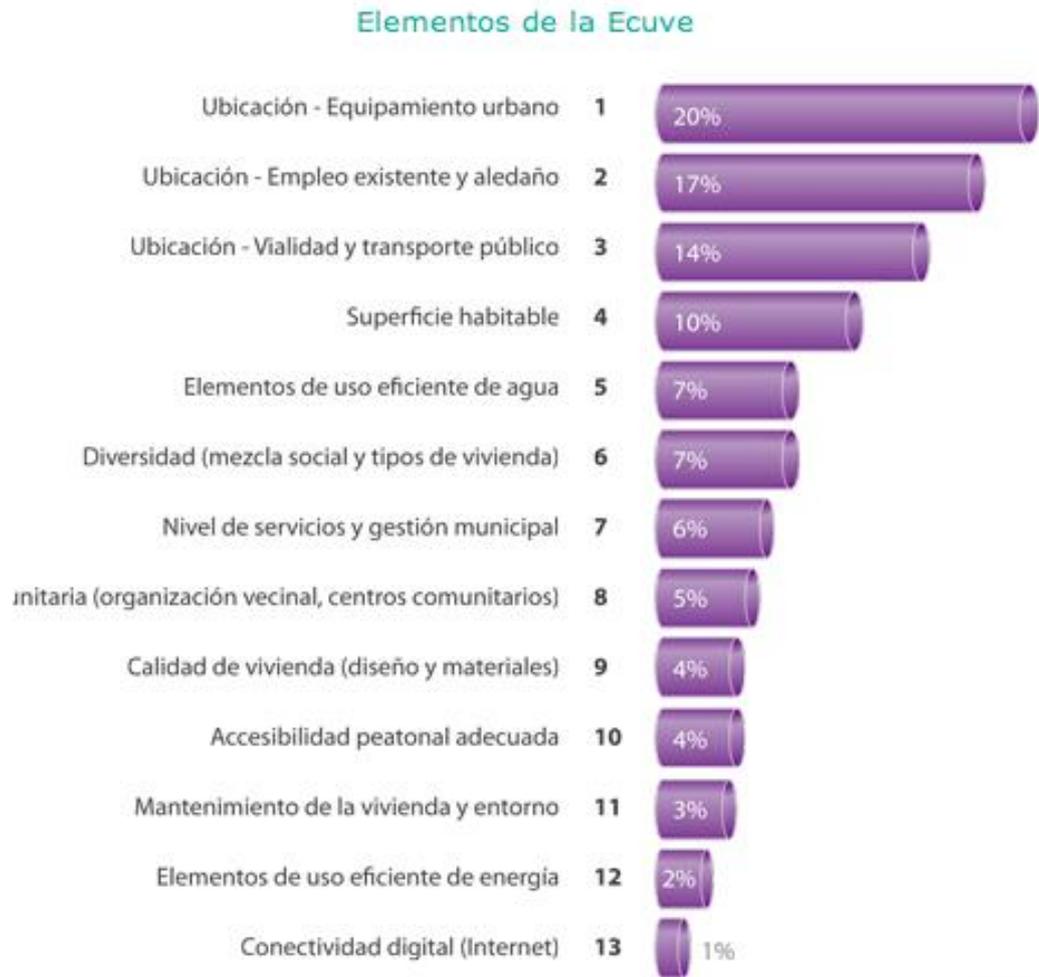*Figure 25. Translation of Figure 25.*

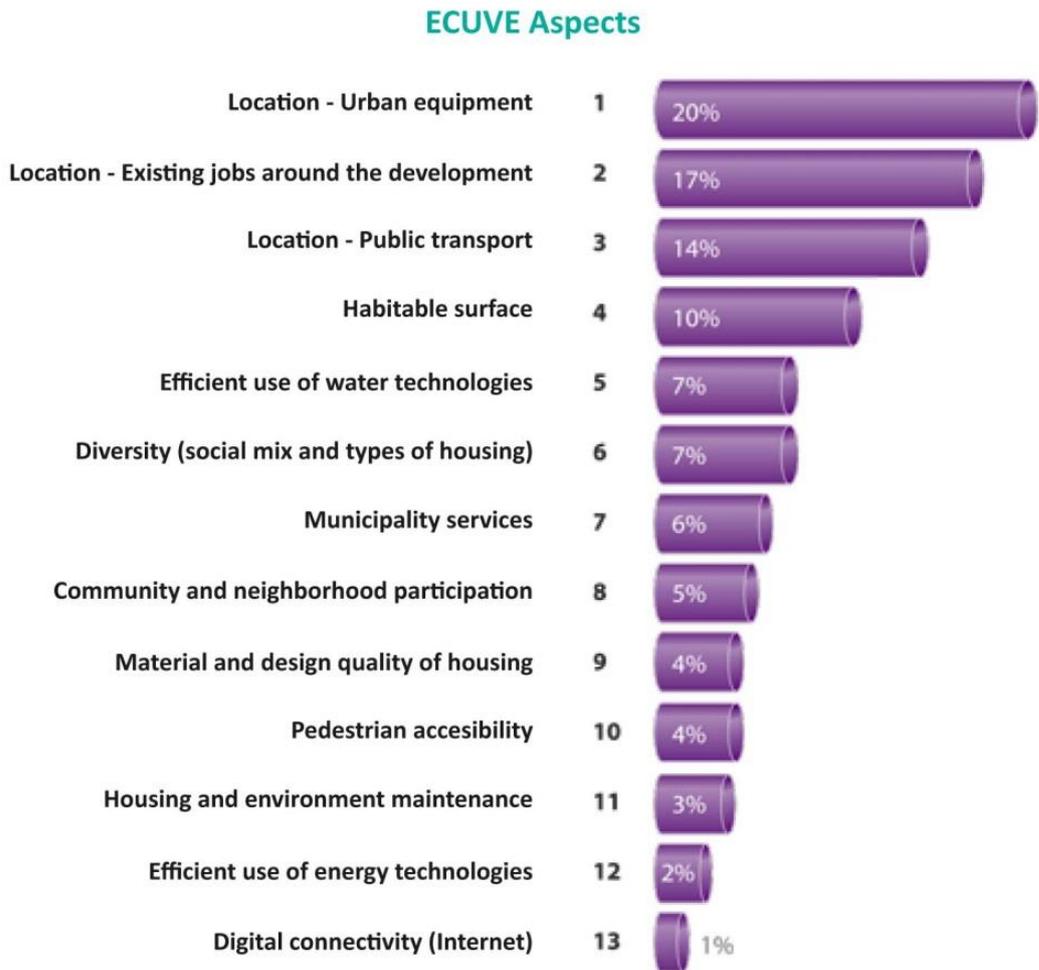
Source: Translation made by the author.

ECUVE ASSESSMENT CONCEPTS

Figure 26. An example of the publication results of ECUVE (translation in the following page)

Source: www.INFONAVITpublica.org.mx

Figure 27. Translation of Figure 27.

ECUVE Aspects

Aspect		
Location - Urban equipment	1	20%
Location - Existing jobs around the development	2	17%
Location - Public transport	3	14%
Habitable surface	4	10%
Efficient use of water technologies	5	7%
Diversity (social mix and types of housing)	6	7%
Municipality services	7	6%
Community and neighborhood participation	8	5%
Material and design quality of housing	9	4%
Pedestrian accesibility	10	4%
Housing and environment maintenance	11	3%
Efficient use of energy technologies	12	2%
Digital connectivity (Internet)	13	1%

Source: Infonavit

Source: Translation made by the author.

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