



**FACULDADE DE ARQUITETURA**  
LIBSON SCHOOL OF ARCHITECTURE  
UNIVERSIDADE DE LISBOA

# **Revolutionizing Urban Land Management with the Strategic Use of Empty Spaces**

The Sliding-Puzzle Model as an Innovative Tool for Augmenting the  
Adaptability, Height and Density of Urban Centres

**DOUTORAMENTO EM URBANISMO**

**PROPONENTE** - João Luís Silva Jordão

**ORIENTADOR**- Professor José Luís Mourato Crespo

Tese especialmente elaborada para a obtenção do grau de doutor

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## ABSTRACT

The classic logic behind how we plan our cities, and the prevalent zoning codes in particular, are fit for times of slow technological and logistical transformation as well as fairly contained rates of urbanization and population growth. However, the 21<sup>st</sup> century has seen a continuation and reinforcement of important trends such as fast-paced urbanization, fast-paced technological development as well as the need for the constant transformations of the urban fabric that these trends entail. With the strategic use of empty spaces, and more specifically by introducing quotas of empty space according to the predicted needs that a certain urban area has for growth, cities can scale-up their city centres thus absorbing population growth and reducing urban sprawl. As such, the insertion of quotas of empty space in central urban areas that are expected to have a population growth with ratios of empty space that are relative to the expected growth can be used to achieve specific housing capacity gains. In the area of housing specifically, specific occupancy growth rates within specific time frames can be achieved by starting with the corresponding amount of initial empty space and necessary target building height. The core methodology of this study uses virtual urban environments and consists of calculating how different percentages of empty space coupled with different target building heights will result in specific gains in housing capacity. The virtual environment is set at 1km squared with 100 housing blocks, each initially having three floors, and projects the housing occupancy gains that can be gained with 1%, 2%, 5%, 10%, 15%, 20% and 25% initial empty space and target building heights of six, nine, twelve and fifteen floors. The insertion and maintenance of empty spaces which then operate as pivots used to target existing buildings for relocation, redevelopment and expansion via property swap arrangements can be the key that cities need to unlock greater capacity of adaptability and increase the probability of fulling their potential. Furthermore, this model for development and redevelopment which is hereby referred to as the Sliding Puzzle Model allows for the verticalization and scaling-up of city centres that are otherwise virtually impervious to fast-paced, centrally planned redevelopment initiatives. Finally, using empty spaces as pivots in such a manner opens the door for perpetual cycles of development and redevelopment which in turns brings opportunities but also unprecedented challenges, namely the possibility for the usurpation of this planning mechanism to fuel excessive, profit-driven urban construction, as well potentially fuelling overcrowding in city centres, which along with the potentially negative environmental impacts of perpetual cycles of urban redevelopment, require further research.

### Key Words

Densification, Housing, Local Administration, Scaling-Up, Verticalization

## RESUMO

A lógica clássica que permeia a maneira como planejamos as nossas cidades, e os códigos de zoneamento predominantes em particular, são adequados a tempos de lenta transformação tecnológica e logística, bem como taxas de urbanização e crescimento populacional razoavelmente contidas. No entanto, o século XXI tem assistido à continuação e reforço de tendências importantes como a urbanização acelerada, o desenvolvimento tecnológico acelerado, assim como a necessidade de constantes transformações do tecido urbano nas quais essas tendências resultam. Com a utilização estratégica dos espaços vazios, e mais especificamente através da introdução de quotas de espaços vazios de acordo com as necessidades previstas de crescimento de uma determinada área urbana, as cidades podem escalar os seus centros urbanos absorvendo o crescimento populacional e reduzindo a expansão urbana horizontal. Desta forma, a inserção de cotas de espaços vazios em áreas urbanas centrais dentro das quais se espera um crescimento populacional, com proporções de espaço vazios relativos ao crescimento esperado, pode ser utilizada de forma a alcançar aumentos específicos de capacidade habitacional. Na área de habitação especificamente, podem ser alcançados aumentos específicos de capacidade habitacional dentro de prazos específicos começando com a quantidade correspondente de espaço vazio inicial e a altura de construção alvo de novos edifícios necessária. A metodologia principal deste estudo usa ambientes urbanos virtuais e consiste em calcular como diferentes percentagens de espaço vazio, combinadas com diferentes alturas de construção alvo, resultarão em aumentos específicos de capacidade habitacional. O ambiente virtual tem 1km quadrado e contém 100 edifícios de habitação, cada um inicialmente com três andares, e projeta os ganhos de ocupação de habitação que podem ser atingidos com 1%, 2%, 5%, 10%, 15%, 20% e 25% de espaço vazio inicial e alturas de construção alvo de seis, nove, doze e quinze andares. A inserção e manutenção de espaços vazios que funcionam como pivôs e usados para relocar o uso dado a edifícios existentes, redesenvolvendo e expandindo usando acordos de troca de propriedade, podem ser a chave que as cidades precisam para desbloquear maior capacidade de adaptabilidade e aumentar a probabilidade de atingir o seu potencial. Além disso, este modelo de desenvolvimento e redesenvolvimento, aqui referido como Modelo do Puzzle Deslizante, permite a verticalização e ampliação de centros urbanos que, de outra forma, seriam praticamente impermeáveis a iniciativas de redesenvolvimento planejadas centralmente e a um ritmo acelerado. Finalmente, usar espaços vazios como pivôs desta maneira abre as portas para ciclos perpétuos de desenvolvimento e redesenvolvimento os quais, por sua vez, trazem oportunidades, mas também desafios sem precedentes, nomeadamente, a possibilidade de usurpação desse mesmo mecanismo de planeamento de forma a alimentar a urbanização excessiva e motivada pelo lucro monetário, bem como potencialmente alimentando a superlotação de centros urbanos, os quais, juntamente com os impactos ambientais potencialmente negativos de ciclos de redesenvolvimento urbano perpétuo, requerem mais pesquisa.

## Palavras Chave

Administração Local, Aumento de Escala, Densificação, Habitação, Verticalização

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Em nome de Deus, o Misericordioso, o Clemente

In the name of God, the Beneficent, the Merciful

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# **1 INTRODUCTION, METHODOLOGY AND RESEARCH STRUCTURE**

## 1.1 Research Pathway and Evolution

This research project started at the height of financial crisis in Europe and the Troika's subsequent entry as a political player in Portugal, where one has been based for the time of the project. The memorandum of understanding specifically (Troika, 2011) had plenty to say about the reform of the Portuguese State structure and of course, this included many axes for structural reform that related to Local Administration. As such, one based a large quantity of one's initial research around on processes of Administrative Reform that were either ongoing or that were specifically spurred by the Memorandum of Understanding. Together with the concept of the Right to the City that was central to a lot of the studies that one understood during one's Masters in Science at the Bartlett Development Planning Unit, which tends to concentrate on urban environments in developing countries as well as participatory planning, one's project became an evaluation and analysis of how both themes, "Local Administration and the Right to the City" interacted, which then became the title of one's Thesis and the title of the initial research project that was approved by the relevant jury.

Several years later, this arrangement however did not prove as productive and satisfactory as one had anticipated. One quickly hit a series of roadblocks and most importantly, realized that one's project was built as a theoretical discussion, with the possible empirical dimension of one's study still too varied and lacking clarity. This continued to be the case until one switched the focus of the project to one that is once again interlinked with one's time in Lisbon, but this time, I started focusing on the empty spaces as well as the abandoned buildings that abounded in the city. It just so happened that as I was once walking through the city, walking by an empty block, cordoned off by metal fencing, with a notice that the construction project that would occupy it was already licensed, I was asked a question relating to the possible reason as to why Lisbon has become (around 2016) the target for more foreign investment in housing and real estate. I pointed to the empty block, and said "see, there were so many old buildings falling apart, or empty blocks, that there is just a lot of space for development". That is when it struck me. "Why should we have to depend on economic destruction so as to have growth? Why should we need derelict buildings before we can build more and better? Why should a neighbourhood have to be poor and run down before it gets aggressively gentrified? Why can't we come up with a mechanism that makes development and expansion possible in all situations? That is when the idea of using empty spaces in a completely novel way occurred to me. This line of research ended up being incredibly productive, as is shown by the publication, within a very short period of time, of several peer-reviewed papers dedicated to the matter.

Though initially one interpreted this turn as a complete redesign and revamping of one's Thesis, a large quantity of the analyses and studies undertaken, specifically those focusing on Lisbon's morphology and housing issues, were indeed very useful in the development of this Thesis, which remained relevant for some sections of the Theoretical Framework, and which most importantly became vital during the development and writing of the two Case Studies. The concept of a "strategic use of empty spaces" then was further developed and formed the basis of the foundational publication of the Thesis, "The Sliding Puzzle Model for Scaling-Up Cities: How Continuous Cycles of Development and Growth Can Be Enabled by Introducing State Enforced Quotas of Empty Urban Spaces" (Silva Jordão, 2018c), which explores the themes of urban morphology and housing, whilst proposing a novel urban planning mechanism which uses empty spaces as pivots.

## 1.2 Theoretical Introduction

The city represents, historically, a demographic agglomeration that usually constitutes a centre of power and political privilege; it is a place where human capacity and potential can reach their highest peaks, where innovation is most likely to manifest, where citizens of different backgrounds interact and, in so doing, express the essence of humanity in all of its splendour. However, the city is also a stage of economic, social and political inequalities and conflicts. Within it, one can witness the pinnacles of injustice and segregation, social exclusion, political repression and poverty. Not only can we say that the dynamics of human interaction, whether they are subjectively considered to be positive or negative, reach their most intense expression in the urban context, we can go even further and identify the very phenomena of cities, whether symbolically or practically, as the epitome of human experience and uniqueness. As more and more of the world's population lives in cities, which makes for an increasingly urban world, so too do considerations around urban affairs become ever more important and at times, pressing.

The ability of any particular urban citizen to affect their socioeconomic condition does not depend only on local administration, which itself in turn is also affected by a myriad of power relations that are in no way limited neither to the local scale nor to the public sphere. In this context, the dynamics of globalization emerge as a preponderant factor as they subject the urban dweller to dynamics that transcend the influence and jurisdiction of the local administration while transforming its competences, namely through the public debt crisis and subsequent privatization of municipal services. That also leads to the inevitable conclusion that an urban cannot possibly hope to realistically affect all facets of urban life by interacting with local structures of democracy and/or participation.

It can be proposed that the concept of the right to the city as introduced by Lefebvre and later further developed by many prominent thinkers, urbanists as well as others, is, in a rapidly urbanizing world, a central theme in the defence of basic human rights, specially insofar as its specific dynamics and concerns, by taking the city as a matter of prime concern, specifically addresses the concerns and reality of a growing percentage of the world's population. However, the need arises to anchor our considerations regarding all manner of urban dynamics on solid, pragmatic bases, as Seixas (2013, pp. 254) reminds us, "The development of multiple nature discourses around words such as participation, plurality, governance, or even the city's democracy itself, without a real strengthening of its substance (as well as the various elements and values that are part of the city's frameworks and its governance), is today considerably evident... the very idea of the city as a collective actor can, despite its virtues, having a difficult consistency of realization and becoming an overly utopian perspective, running the risk of reification or loss of vigour given its difficult materiality."

In order to simultaneously avoid the tendency to orbit around simple utopian visions, abstract considerations, and an overall lack of substance and pragmatism in our approach to understanding the concept of the right to the city in particular and the search for greater social justice in general, in this study we have chosen to approach the concept of the right to the city with particular attention to the nature, functioning and potential of local administration structures. This approach is based on the assumption that the State, in all its dimensions, will continue to be an important agent, perhaps even the most important, when it comes to interactions and relations, whether in the form of negotiation, diplomacy, oppression, manipulation, etc., between different urban agents,

and also assumes that the local administration has at the same time a duty to defend social justice as well as a privileged position to be able to defend it, or in some cases, to undermine it. Thus, we can say that this study assumes that the structure and the attitude of Local Administration bodies are determinant factors for the presence or absence of the right to the city.

The socio-economic condition of urban inhabitants is affected both by the built environment as well as by the city's political relations and accessibility to decision-making power regarding urban services and housing. In this context, the political and social order of the city goes beyond its territorial dynamics without, at any time, ceasing to be intimately intertwined with it. In this sense David Harvey (1973, pp. 97-98) argues that our understanding of social justice “consider conflicts over the locus of power and decision-making authority, the distribution of influence, the bestowal of social status, the institutions set up to regulate and control activity and so on ... in short, a specification of a just distribution justly arrived at.” Furthermore, “The question of what kind of city we want cannot be divorced from that of what kind of social ties, relationship to nature, lifestyles, technologies and aesthetic values we desire. The right to the city is far more than the individual liberty to access urban resources: it is a right to change ourselves by changing the city. It is, moreover, a common rather than an individual right since this transformation inevitably depends upon the exercise of a collective power to reshape the processes of urbanization. The freedom to make and remake our cities and ourselves is, one wants to argue, one of the most precious yet most neglected of our human rights.” (Harvey, 2008). Furthermore, the just city is “man’s most successful attempt to remake the world he lives in more after his heart’s desire. But, if the city is the world which man created, it is the world in which he is henceforth condemned to live. Thus, indirectly, and without any clear sense of the nature of his task, in making the city man has remade himself.” (Harvey, 2008). It is the objective of this study to address the ability of urban inhabitants to influence their lives, taking into account the dynamics of globalization of the processes that influence it, drawing conclusions about the past, present and future of local administration and its function within the socio-political body.

We can identify some recurring patterns in the academic approach to contemporary urban theory. Two stand out in particular, and it is difficult to discern which one is the most worrisome. First, much of the literature on cities repeats incessantly that the future of cities is uncertain (Seixas, 2013; Bourdin, 2010), asserting that we do not know nor can we know which direction to transform their form and essence, and we must resign ourselves to identifying some temporary and fundamentally superficial trends. The second is the emphasis on the importance and centrality of competition between cities, and what cities should do to raise investment, attract capital and foster growth. The first approach amounts to a sort of philosophical and empirical capitulation, while the second proposes that cities should compete with each other in order to grow, but whilst significantly limiting their criteria for what specific kind of growth is desirable, and much less are they capable of specifying which general direction cities should go in.

## 1.3 Specific Challenges and Problems

### 1.3.1 Problem

One of the main problems that this study focused on, especially in its infant stages, during which the project was still in the phase of attempting to construct a theoretical framework, arose from transformations to the scope of Local Administration structures, particularly in the context of the post-financial crisis Structural Adjustment programmes. Meanwhile, these profound changes in Local Administration's scope and financial capacity were accompanied by a noticeable augmentation of the hardships felt by the most vulnerable sections of the population during and after the same financial crisis which then spurred these institutional transformations. What could then be interpreted as a divergence in the needs of the population and the capacity that Local Administration structures have to address them led the study to ponder over the question of the Right to the City at large, and specifically, what mechanisms, if any, can be introduced into the already existing portfolio of Local Administration's urban planning mechanisms so as to address the populations needs. Out of all of the needs that and areas of action that one could concentrate on, housing quickly became the main focus, in great part because of the global scale of certain worrying trends such as the rise in housing prices as well as the ubiquitous nature of the lack of affordable housing in the most vibrant and wealthy cities.

One of the main issues in this project stems from the debate on the relationship between civil society and the State. The closer relationship between the two, which is emerging from the transformation of governance paradigms, presents new challenges for the structures of local administration and for the urban population at large- the supposed increased openness on the part of the local administration to build platforms for citizen participation is a factor of relevance that necessitates a large amount of analysis and critique. The increasing incorporation of civil society into affairs that pertain to urban management and social support, such as charitable operations, participatory budgets, urban agriculture, land management, educational projects managed by cultural associations, among other examples one could give, often result in the delegation of responsibilities without in turn reducing the jurisdiction of the State. This is perhaps the more ambiguous, and perhaps even questionable side of participatory mechanisms- the State thus delegates (or neglects) responsibilities which then are performed by a web of groups belonging to the so-called "civil society" and sometimes even loose affiliations of citizens, without this necessarily resulting in a consistent exchange of power - the State continues to be able to collect taxes, impose the law, supervise activities which it deems of high importance, and, above all, it continues to exercise a monopoly on the legitimate use of physical force. This poses a series of questions that are more difficult to approach than may seem immediately obvious.

More specifically, housing became an increasing focus of this study, and questions pertaining to how Local Administration can affect the housing market started to take centre stage in my enquiries. The further focus on empty spaces and abandoned buildings led to the asking of questions pertaining as to whether, and if so, how, these could perhaps be leveraged to address housing issues, namely, shortages and increasing costs, via public policy and local administration specifically.

## **1.4 Research Question**

- **What planning instruments can one develop in order to facilitate the building of housing in areas where they are needed the most?**

### **1.4.1 Specific Questions**

- Is there a way that one could integrate a mechanism into urban planning systems and zoning codes in particular that could make it so that we don't depend on derelict building nor ad-hoc empty spaces in order to grant urban centres the possibility to simultaneously offer more housing as well as have space to introduce or redevelop key infrastructure?
- Would it be possible to develop an urban planning mechanism that can be introduced, leveraged and executed by municipal authorities that mimics the general dynamics that disaster capitalism produces in urban environments, that is to say, potentially opening up pathways for development projects, so as to grant municipal authorities more leverage and ability to counter-balance the forces of the private market and the private housing market specifically?

## 1.5 Research Structure

### 1.5.1 Main Hypothesis

The main hypothesis that underpins this research project is as follows:

**By introducing a quota of empty urban spaces in urban centres, one can use them as pivots to relocate and then redevelop existing buildings. By replacing the old buildings with newer, taller and more efficient buildings and then demolishing the older buildings, thus generating new empty spaces, one can produce continuous cycles of development that will increase the overall housing capacity of urban centres.**

### 1.5.2 Secondary Hypothesis

The secondary hypothesis that directs this research project is as follows:

This mechanism can be used not only for scaling-up, developing, redeveloping and building housing specifically- it can also be used as an urban planning instrument that can be used to generate perpetual cycles of redevelopment which is both an exciting as well as potentially disastrous prospect. Close attention will need to be given to manners in which the mechanism described can potentially become a counter-productive and destructive force.

### 1.5.3 Scale, Applicability and Initial Methodological Notes

A large portion of the empirical work will be based on a virtual environment constructed for the purpose of modelling the Sliding Puzzle's capabilities as well as some of its plethora of variations. That means that the conclusions that are extracted relating to possible housing capacity gains that the Sliding Puzzle can achieve are mostly retrieved from calculations that themselves are based on virtual environments and abstract calculations.

The nature of the virtual environments along with its inherent specifications, namely the number of floors, can be easily adapted to other parameters so as to produce varying results, which means that the applicability and adaptability of the calculations themselves are flexible and its scale and applicability is wide insofar as calculations regarding capacity gains and verticalization projects go. The calculations and their subsequent results shown and made available in this study are however very specific and their specifications are calculations are specified in a subsequent section pertaining to the research and development of the Sliding Puzzle Model.

Given the nature of the urban planning mechanism that this study introduces and develops, namely, its abstract nature and the fact that it can be used in an unimaginable number of ways insofar as its practical application goes, its applicability can be said to be wide. One develops some of the specific applications and variations in the chapter "Simulating Different Sliding Puzzle Model Scenarios with Virtual Environments". These scenarios demonstrate some of the different variations that the Sliding Puzzle Model can achieve, namely, how it can be used to redevelop dispersed target buildings and empty spaces, how it can be used to amass empty space whether in clusters or in straight lines, how it can be used to verticalize buildings to varying degrees, how empty space can be used so as to open up even more empty space, and how it can be used for increments in housing capacity, or to maintain the capacity that was previously available. When relevant, the specific housing capacity gains are explained according to each specific Virtual Environment exercises, alongside the

specific calculations relating to different rates of housing capacity gains across arrangements of initial empty space and new building height.

One will follow the chapter with the Virtual Environments with two Case Studies- the objective of this chapter is to demonstrate how the different abstract application of the Sliding Puzzle Model can be applied to real-life urban scenarios. Each case study has a lengthy theoretical introduction and following discussion of its own in order to establish its context according to the specificities of each case. In the first case study, the focus of the analysis will be on the housing and rental market, urban morphology and how different areas have different pressures to their respective housing rental markets, and finish by trying to demonstrate how the Sliding Puzzle Model can be used to potentially solve situations relating to contentious urban development projects. The second case study will focus on the particular nature of urban informal economies and then seek to establish how the Sliding Puzzle Model can be used to drive redevelopment in informal housing complexes. General considerations relating to urban morphology, density, height and verticalization will be for the most part be covered in the latter parts of the chapter relating to the Theoretical Framework.

## **1.6 Objectives**

### **1.6.1 Main Objective**

- **To research possible pathways through which Local Administration can intervene in urban areas subjected to high housing pressure, with a focus on the potential leveraging of empty spaces and abandoned buildings in order to address housing shortages**

### **1.6.2 Specific Objectives**

- To establish an empirical base that can serve as a quantitative measure of potential housing capacity gains
- To develop mechanisms that can be applied as public policy that leverage empty space specifically for the purpose of building housing and that are capable of positively interacting with the private housing market
- To establish a logic pertaining to urban land management mechanisms that address housing shortages in a manner that is relevant to urban centres specifically, whilst still being relevant to different urban environments

## 1.7 Problem, Research Question and Hypothesis Outline

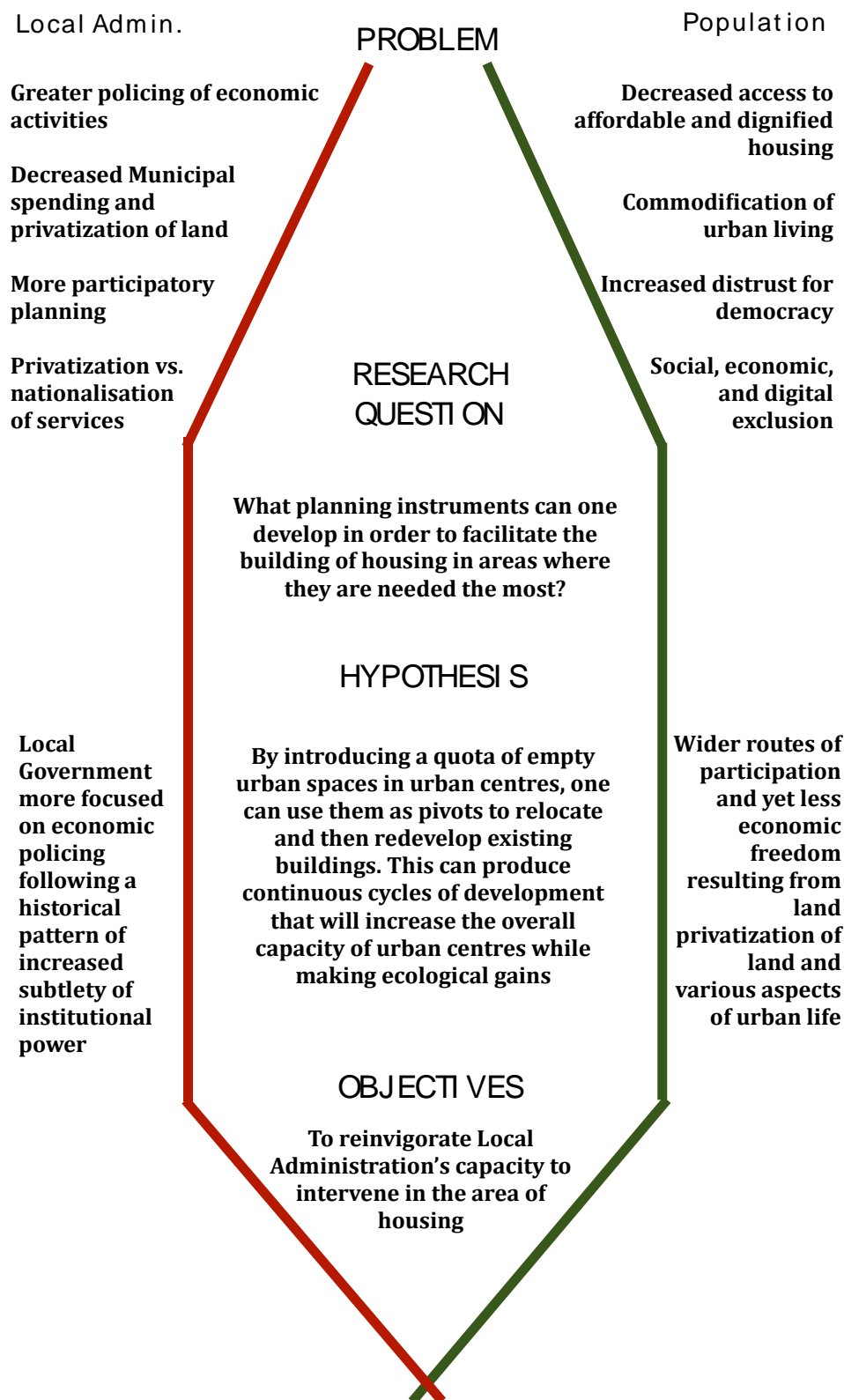


Figure 1 – Basic Methodology Outline

## 1.8 Detailed Research Project Outline

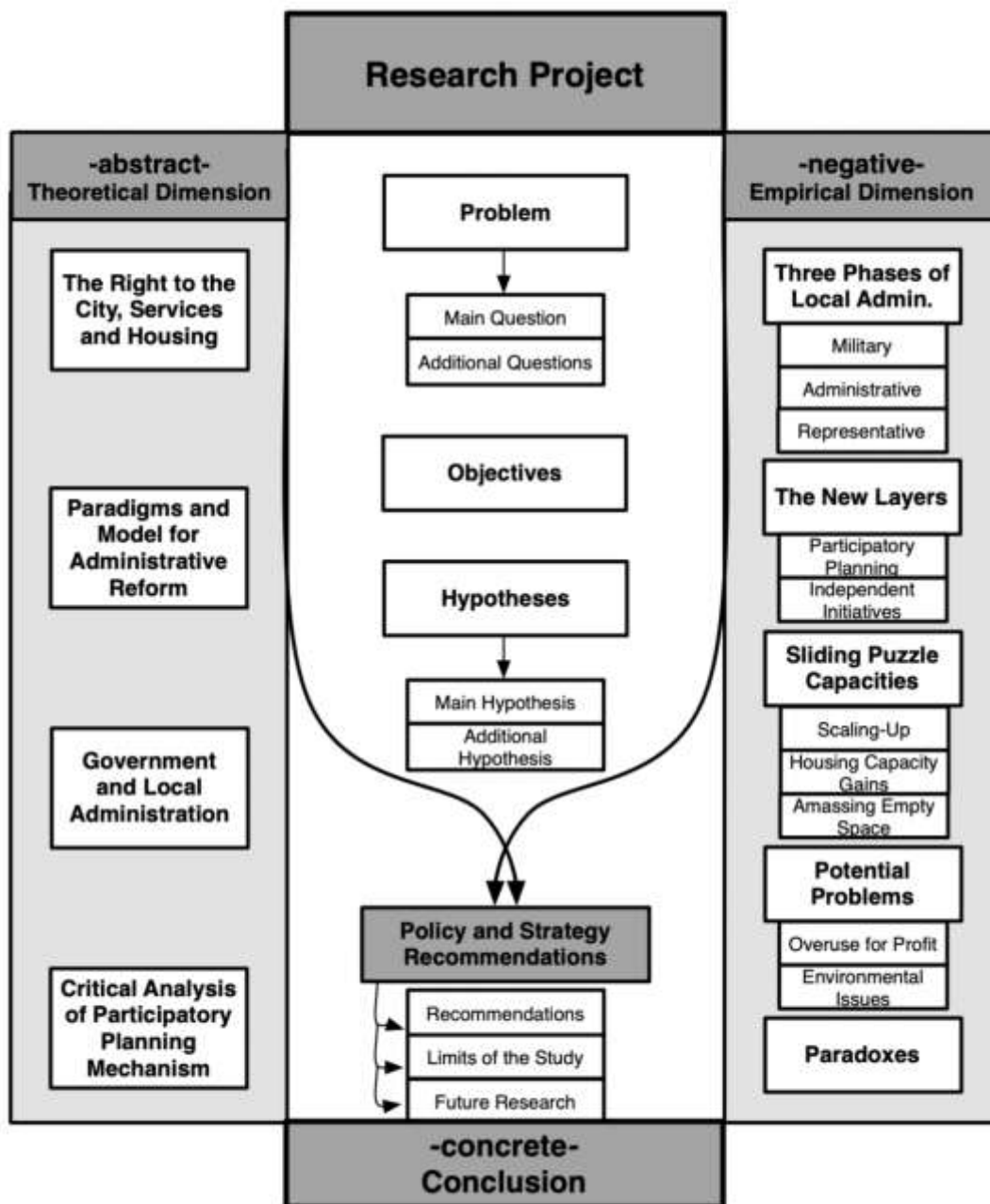


Figure 2 - Detailed Research Structure

## **2 THEORETICAL FRAMEWORK**

## 2.1 Urbanism's Existential Crisis

According to the United Nations (United Nations, 2016, pp. ii), it is estimated that 54.5% of the world's population now lives in cities. The same report predicts that by 2030 this rate will rise to 60%. Human beings have collectively shown a clear tendency and even preference for urban dwelling. We live in the urban age. We live in the era of the 'Triumph of the City' (Glaeser, 2011). The notion that the majority of humanity would end up living in cities was once a prediction; it was informed speculation at best. Today it is an undeniable fact. But this seems to be one of the only certainties. Urbanism is a field of study in an understated and generally undiagnosed, and yet verifiable and undeniable crisis. Though the particular dynamics of this crisis may adhere to trends that can be identified across other fields of social and human sciences, there is a particularly worrying variant or this crisis that is specific to urbanism and endemic amongst its theorists and practitioners. No one would dare dispute the usefulness, even critical urgency of urbanism as a field of study and practice. But does it have the theoretical grounding and instruments to live up to the challenge?

The contemporary crisis in urbanism today is both an academic, professional, and corporate crisis. One could say that it is mainly an academic crisis, a crisis of concepts, of ideas and ideological axioms, as evidenced for example in the lack of a deontological code with which to guide its course. It is both paradoxical and surprising that the time during which humanity most needs concise urbanism and determined urban planners is the time when urbanism appears most overshadowed by overly complicated language and overly idealistic concepts. In the urban lexicon, great promises of democracy, transparency and social justice proliferate, while there seem to be few concise and efficient strategies on how to actually implement them. In this scenario, there is an increasingly popular concept within urbanism that stands out, the Right to the City, and along with it, the adjacent themes of Participatory Planning and Urban Democracy. There are many real-life examples of these concepts being brought to fruition, and yet they are all-too often isolated cases, and if not isolated, they tend to be in constant retreat before the overwhelming force of informal urban development, the capitalist mode of production and the technocratic model of urban management.

Initiatives that try to build urban democracy via participatory programmes in the urban context can often serve as useful case studies, and yet insofar as the reality of urban living for most urbanites goes, they tend to be *faits divers* as oppose to central components of the logistical and political life of the masses. Furthermore, as of yet, the utopian dreams of harmonious and fair cities, the concoction of which has been the eternal pastime of urban planners throughout history, are at best visions which can guide and motivate us, and at worst, are still evasive mirages. Increasingly, the collective consciousness and its imagination is being captured not by visions of hope, but by dystopian visions in which the city tends to have a negative role- almost as if the urban phenomena has become a recurring trope of a comic book super-villain that just refuses to be defeated. To say that cities are a recurrent target of vilification in pop culture is an understatement. And yet, the city survives. More than that, the city thrives. Or better maybe. It proliferates, it dominates, it expands. The rural world is disappearing, if such a thing even exists anymore, such is the ubiquity of the urban model. The expansion of cities, the increase in the speed of urbanization and the rise in the percentages of urban inhabitants have been the result of subsequent industrial revolutions as well as the advent of other technological innovations and social and

economic developments. The science of urbanism has advanced, a lot, that much seems to be true. But it has been more of a consequence rather than a cause of cities' triumph.

Perhaps it is time to get back to basics. What is, after all, urbanism? Perhaps a simpler, and even more important question would be the following question: *what is a city after all?*

## 2.2 What is a “City” After All?

“Cities are a set of several things: memory, desires, signs of a language; cities are places of barter, as all the history books of economics explain, but this exchange is not limited to the exchange of goods, it is exchange of words, desires, memories” (Italo Calvino cited by Lippolis, 2016, pp. 7).

Before we can talk about what the Right to the City might be, we must first define the term “city”. The United Nations cities annual report tells us in 2016 (United Nations, 2016, pp. 1) that “Most people can agree that cities are places where large numbers of people live and work...” Perhaps the problem with urbanism starts here - at the root. In words. In meanings. In etymology. We propose, then, to rethink the meaning of this word from scratch, an exercise that is so favourable at this time when nothing seems right.

More than defining what the city is, we must consider how the vertiginous evolution of both cities themselves and human society in general in the 20th century and perhaps even more so now, at the beginning of the 21st, century should inform and transform our understanding of what the city is.

Let’s start with the essentials. The city is not just a place, a space or even a location with a lot of people. *The city is a model*. Above all, this model becomes a city, or not, not because of its size, but because of having a cluster of functions within close proximity. Why, then, do we so often find definitions of what constitutes a city that revolve around how many people live in a particular place? It is indeed understandable, or rather, it has been necessary until now, to use such a facile and simple definition. But perhaps this definition of what cities are has become obsolete. We can say that they were thus far partially correct. But only partially. This is in great part because it can be argued that the urban planners of the past did not have access to fully matured cities- they could only imagine what cities could one day become. The cities of the past, and even some modern cities, are proto-cities, cities that were still in an embryonic state of sorts. Just as a scientist is not to blame if he only has a human embryo as his object of study- he will naturally only be able to make a sketch of the human anatomy and will not be able to concoct so much as an introduction to its psychological characteristics- so too is an urban planner limited in scope had he only had access to pre-contemporary cities.

The big difference between the old city and the modern city, and above all, between both of these and the city of the future, is the technology available to those who build it and those who inhabit it. The lack of advanced technology has meant that until now we needed to have a certain number of people in order to ensure the existence and availability of the five basic services necessary for a healthy, full and fulfilling human existence - food, culture, education, housing and health. A good example of this is that the ancient city needed to have a vast periphery dedicated to agriculture on the outskirts of the city in order to ensure a stable food supply for its inhabitants, and in the cases of ancient mega-cities such as Rome, it depended on international market routes, or even inter-continental routes, as a large part of the wheat they depended on came from Egypt. The ancient city could not be understood without also taking into account its metropolitan scale, which includes its agronomic periphery, and secondly, without its regional scale, and in some cases, its continental or global reach, as it depended on these dimensions and these connections in many facets of its existence. In the modern city, the metropolitan scale is still important, and it mainly affects its transport routes

and connections, as well as the tendency for many cities to push their inhabitants to the peripheries, but it is less determinant than its regional, continental and global scale, as the products and services needed to survive, in an increasingly globalized economy, tend to come from the most varied places across the planet. The context of economies of scale, in which certain countries dominate the production of certain products which they then ship through the cities of the world, highlights this phenomenon. To the physical connections that cities depend on for commerce and transport of people, digital connections are now added, increasingly prevalent, the emergence of hypertext societies, and subsequently leading some even to declare a new stage of evolution after the metropolis- the “*Metapolis*” that Ascher (2001, pp. 61-64) defines as follows:

“Metapolization is a double process of metropolization and the formation of new types of urban territories, the metapolis. We can define metapolization as the search for the concentration of human and material wealth in the most important agglomerations. It is a process recognized in all developed countries, even if it takes different forms that have to do with regional and national specificities. It results mainly from globalization and the deepening of the division of labor on a global scale, which makes urban agglomerations capable of offering a vast and diversified labor market, the presence of very high-level services, the large number of equipment necessary and more competitive. and infrastructure and good international connections. Jobs, commerce, sanitary, educational, cultural and leisure facilities in large agglomerations also attract the most qualified populations.

“Metropolization, like the previous growth of cities, is based on the development of means of transport and storage of goods, makes information and people (the beep system) and on technologies that increase its performance... These means transport and storage, performing well and increasingly individualized, give new forms to urban agglomerations. Metapolis are thus constituted, that is, vast disturbances, extensive and discontinuous, heterogeneous and multipolarized...

“Metapolitan forms, closely linked to the means of transport and communication, are progressively recorded over the entire territory, both in areas that include very large cities and in medium-sized cities. The structures of rapid transport networks (in hubs and spokes, that is, in centers and spokes) increasingly characterize urban systems and networks. Small and medium-sized cities thus strive to connect as best as possible to very large agglomerations in order to benefit as much as possible from their urbanity (from their potential).

“Metapolization, like globalization, induces a double process of homogenization and differentiation: homogenization, because the same economic actors or the same type of economic actors are present with the same logic in all countries and in all cities; differentiation, because long-distance competition widens and animates, accentuating the importance of differences.”

It is precisely because of the developments described here by Ascher that the city of the future has the potential to both reduce its dependence on its periphery precisely as a result of technological development. In the same way that the mechanization of agriculture has allowed fewer and fewer people to work in agriculture, with that workforce then tending to be transferred to other economic sectors, especially the service sector, and in the same way that the new transport systems precipitated the development of the metropolitan model, the new digital, communication and, above all,

automation systems will transform the city in a way that is as radical or more radical than what was observed by the transformations of *metropolization* and at the beginning of *metapolization*. However, the most relevant thing will be to analyse in what ways these transformations will affect urban governance, municipal structures and, above all, our considerations regarding the Right to the City.

Technological development and more specifically the mechanization of work, the invention of the Internet and now, more recently, the imminent automation of a large part of physical, mental, analytical and even creative work, means that fewer and fewer people are needed to ensure the existence of the five areas necessary for full human life - food, culture, education, housing and health. We can even go further and make a philosophical provocation - a housing complex, or even possibly a single isolated house in the middle of a sparsely inhabited area has the potential to provide a more urban life, in this sense, than would be possible for the average inhabitant of Ancient Rome two millennia ago, provided it had the pre-existing infrastructure that allow it. We can imagine a largely automated food production system, access to culture and education via the Internet, healthier and overall better quality housing facilities than was possible in antiquity, as well as access to programs for diagnosing and even treating medical conditions, all potentially being fitted into a single home. In other words, in modernity, the presence of a critical mass of inhabitants in close proximity makes us more likely to find these services, however, it is less and less prevalent, in benefit of the importance of the existence of infrastructure and access to technology large enough to provide for modern human life. In this sense, a modern house, if properly built and equipped, can be a microcosm of a city, superior in many aspects to what would be possible in the best of ancient cities.

As a last consideration, many define what a city is or is by merely using criteria pertaining to size or proportion, as is usually the case, and despite the different and sometimes conflicting definitions that are used to define cities, they usually focus on population size, whereby a city is a space in which a lot of people live (UN Habitat, 2020). One has however developed both a consideration and a definition of what a city is that is not only different, but really quite useful for the purposes of this Thesis, namely, as it informs and affects our considerations regarding the importance of proximity, density, and the importance of shaping our housing policies in such a way that permits for intertwined, interlocked, dense urban living, or as I previously put it in a section of the paper “Beyond Self-Hating Urbanism” called “Humanity Squared” (Silva Jordão, 2018a, pp. 157- whole paper will be reproduced in subsequent sub-chapter):

“Having moved from a rural society to an industrial society, an urban society will now rise - and the city will no longer be a mere (though always central) element of society and its condition, becoming instead itself the very *condition* of society [...] Aristotle - calling the synergetic and necessary human condition of 'living together' *synoikismus* - has written how man only becomes human through his participation and full involvement in his community (Seixas, 2013, pp. 67, 280).

The city is the utmost expression of humankind. To love the city is to love humanity. To want what is best for the city is to want what is best for humankind. To hate humanity is to hate the city in all its expressions.

Furthermore, we must ask ourselves, if humanity is an inherently urban species, is prevalent anti-urbanism, i.e., a widespread hatred of cities, not a form of collective self-hatred?

Its density represents multiplication and intensification of human activity and the fulfilling of its essence. In this context, its heightened quantitative characteristics represent a qualitative leap that translates into an essential change in the nature of human condition itself.

Its organic composition subsequently results in the construction and transformation of human experience that tends towards the fulfilment of the individual and collective self in both positive and negative aspects. The city can be, and often is, paradoxical in its dynamics, as well as contradictory in its results. Within it we find the peak of justice and injustice, both vying for space and dominance. The battle for the hearts and minds of the people gains a territorial dimension and hence, is secularised (in the real sense of the word- it becomes attached and constrained within time and space), and through the contestation over space and ideological battles. The city cannot aspire to be a place of perpetual physical peace though, paradoxically, it is the scenery most adapted for the formation of physical and ethereal syntheses due to the proximity and coexistence of conflicting forces, thus making the clash between thesis and antithesis, or the *abstract* and the *negative* all the more likely, thus providing an environment fit for the emergence of *concrete* forms and ideas.

Urban reality obliges humanity to multiply itself by itself. It is the apex of human expression, the peak of human experience. In seeking to go *beyond self-hating urbanism* one is also proposing that we re-establish and re-emphasize the capacity of cities to allow for, and hasten, socio-economic evolution, and their capacity to project societies into their next phase of evolution. Going beyond self-hating urbanism is also to imbue urbanism with the constant reminder that cities are the stage for individual and collective betterment. In short, transcending self-hating urbanism is to come to terms with the idea that *the City = Humanity Squared.*”

The difference between a definition of what a city is that focuses mostly on demographical thresholds, which we can call the classic approach to defining what a city is, and one’s own contribution, is that the former concentrates on the shape and size of the city, whereas the definition that one has developed *focuses on its intrinsic nature* and how that in turn relates to social relations whilst perhaps even shedding some insight into some of the dynamics that permeate human existence as a whole.

## **2.3 What is the “Right to the City”?**

Taking these considerations into account about what a city is, we can then try to answer the question - What is “the Right to the City” after all?

In the context of political and economic upheavals, we cannot isolate the city from its proper political and even philosophical context. We must then also take into account the cataclysmic changes in power relations and production dynamics inherent in late capitalism, namely, the ascendancy of so-called cognitive capitalism, and the paradoxical reality of being able to produce more but at the same time see growing inequalities.

We can propose that the Right to the City is in its foundation aimed at the defending the importance and universal right to decent housing. We do also have to consider that the standard for what constitutes decent housing has risen considerably in modern times. Decent housing must then, and in order to satisfy the claim for the Right to the City, be formulated in a more ambitious way than previously conceived; it is the right of the urban dweller to an ultra-technological apartment or house; from the point of view of local authorities, defending the Right to the City consists of the promise and effectiveness of doing everything possible so that material conditions converge in this sense for the greatest possible part of urban inhabitants.

### **2.3.1 The Right to the City and the Social Contract**

Since its genesis in 1968, the concept of the Right to the City has never stopped evolving, having first been proposed by Henri Lefebvre, and meanwhile used and further developed by other thinkers. The issues raised by Lefebvre and the whole concept of the Right to the City in its different aspects are increasingly relevant in a world where an increasing percentage of the population lives in cities, while municipal structures are being reformed, with the growing commodification of urban life calls into question the rights of urban inhabitants to representation and access to goods and services. The representative system is being questioned, and Rousseau's (1762, pp. 26) assertion that "power can be delegated, but will cannot" is at the heart of these questions. The representation itself and its ability to carry out the will of the represented is based on the social contract. It follows that the dissolution of the social contract also leads to a crisis of representation, and the development of capitalism is incrementally transforming the relations between citizen and state, generating new challenges, discrepancies, and subsequently conflicts.

The Right to the City as an abstract concept and as a practical reality is at a crossroads - at the same time that active citizenship and participatory planning reach a peak of popularity in the academic world, urban policies are at the same time tending towards implementation neo-liberal policies, namely through the commodification of public space, urban land and the citizens themselves. And it is perhaps then no surprise that the introduction of mechanisms of participatory planning do not seem to have been able as of yet to sufficiently address nor substantially reduce, at least not in their current format, housing crises and the general global trend towards the rises in average housing prices as compared to average earnings.

### **2.3.2 The Relevance of the Concept of the Right to the City**

The Right to the City is increasingly becoming an existential issue. The financialization of urban land and the increase in housing prices often makes the poor

unable to afford rent, and with the growing tendency to make it illegal to sleep on the street, the poor are left with their very existence condemned to illegality. The anarchist motto 'Nobody is illegal' takes on another dimension here, to be applied not only to refugees and immigrants, but also to poor and destitute urban dwellers.

David Harvey (1973, pp. 97-8) argues that our understanding of social justice "must be expanded to take into account conflicts over the location of power and decision-making authority, the distribution of influence, the granting of social status, institutions built to regulate and control activities... We are looking, to put it succinctly, at a specification of fair distribution through fair processes." Furthermore, "the question of what kind of city we want cannot be divorced from the question of what social connections, relationships with nature, lifestyles, technologies and aesthetic values we want" (Harvey, 2008). In addition, the just city is "much more than the individual's right of access to the resources that the city embodies: it is the right to change ourselves by changing the city, following our heart's desire" (Ibid). Young (1990, pp. 38) adds to this idea by introducing and defining the concepts of domination and oppression thus: "Oppression generally includes or implies domination, that is, restrictions on oppressed peoples to follow rules defined by others." Thus, throughout this chapter, what is sought is to study the way in which the urban citizen tries to escape poverty and social injustice, and more precisely the link between the Right to the City and local administration. Harvey (2008, pp. 1-2) elaborates his concept of the right to the city stating that:

"The right to the city is, therefore, far more than a right of individual access to the resources that the city embodies: it is a right to change ourselves by changing the city more after our heart's desire. It is, moreover, a collective rather than an individual right since changing the city inevitably depends upon the exercise of a collective power over the processes of urbanization. The freedom to make and remake ourselves and our cities is, I want to argue, one of the most precious yet most neglected of our human rights."

The expanding commodification of urban life and the financialization of soils follows a pattern whose development predates industrialization processes and the maturation of capitalist accumulation models:

"The city itself is a work (of art), and this characteristic contrasts with the irreversible orientation towards money, towards commerce, towards exchanges, towards products. Indeed, the work is use value and the product is the exchange value. The main use of the city, that is, of streets and squares, buildings and monuments, is the festival (which consumes unproductively, without any advantage other than pleasure and prestige, enormous wealth in objects of money)." (Lefebvre, 2008, pp. 12).

In this context, the city is much more than the result of physical and social construction processes over time; not only is the city effectively history (Goitia, 1982), we can state that the city's history is built from social conflicts related to process whose development reaches its peak during the present period of consolidation of the neo-liberal system. And at the epicentre of these conflicts, we find an apparent contradiction in the contemporary city, the contradiction between collective projects (Seixas, 2013, pp. 42) which now find a preferential vehicle in participatory planning, and the individualistic competition found in the modes of production and social organization capitalist a systemic and increasingly hegemonic vehicle. Furthermore, these approaches based on individualism and the protection of property relations have not

been able to question the hegemony of the neo-liberal system (Harvey, 2008), nor have they been able to resolve the inequities inherent in planning systems that, to the detriment of the public interest and the duty implicit in urban citizenship, as they assume the protection of private property, economic development and the accumulation and attraction of capital as their main objectives. The Right to the City emerges as a renewed perspective that transfers and applies humanist and Renaissance schools of thought to the context of modern, industrialized, capitalist cities, developing a theoretical and sometimes practical basis that allows us to apply the foundations of social contract theory to relationships economic and social aspects in space. The emphasis on the importance of spatial relationships, in turn, proposes the view that social justice is closely linked to spatial justice (Fainstein, 2010), which in turn leads us to consider forms of intervention that aim to reduce spatial exclusion in its strict relationship with social exclusion as a whole (Madanipour, 1998).

There is an apparent contradiction between the Lefebvrian concept of the Right to the City and the right to the innumerable components mentioned by Seixas. The Right to the City is, in view of the dominant model, repressed precisely by the constant claim to have and receive benefits, services and rights from the Local Administration. The inhabitants see the City Council as an entity that they demand effective management of the city from. A good example of this is the popular reaction during the floods in Lisbon - citizens criticized the Chamber for not having done the necessary, however, by putting itself in the position of who has the right to receive either a material good or a service, the inhabitants also accept their role as mere users of the city, and not as decision makers. The commodification of urban life here finds a psychological parallel, in that the inhabitants see themselves as users of the city and not as citizens. The city user can even claim a house, but in doing so, he abdicates his right to decide and actively act in the planning and management process. The key to this right lies in transforming the inhabitant from someone who asks or begs to receive something from a position of authority to someone who demands to be included in the decision process regarding who gets what and how. In this sense, we return to Duffield (2001) and his concept of how capitalism depends on exclusion. We propose here that the lack of the Right to the City also depends on the current facilitation among the inhabitants, who prefer to demand, work and then receive, organize, decide and then act. The institutional power that cultivates the lack of self-esteem among the population is both accomplice and blamed in this facilitation. In this sense, the Right to the City and its emergence depends on the transformation of inhabitants/users/guests/pedestrians into citizens. And this transformation requires political awareness and self-esteem in equal measure.

### **2.3.3 Between the Right to Receive and the Right to Decide**

We can conclude that the Right to the City is not only not equivalent to the right to housing, the right to receive services and goods from the State, we can state that State policies that aim to, or claim to guarantee the right to housing and goods and services they often compromise the Right to the City and are used to perpetuate the State's monopoly over decision-making processes relating to urban life. The Right to the City is often distorted and manipulated in order to abstract the essence of what makes this idea a force for social change, and above all, a source of inspiration for political claims that aim to change urban political processes in order to guarantee democracy applied to the spatial dimension. In this sense, the emergence of the concept of the Right to the City signalled the birth of social movements that seek to question, in a first instance,

and conflict, in a second instance, with local or national management models that distance the urban inhabitant from the urban management processes through the administrative management model, or through the representative model which is in essence a model in which the individuals responsible for the administration of the city are elected, continuing to hold most of the characteristics of administrative management. Whether in one system or the other, the citizen is relegated to the position of recipient of goods and services, subject to decisions taken by third parties, and the introduction of municipal and national elections only introduces a mechanism that limits the duration of the mandate of any administrative body.

Finally, the concept of the Right to the City questions the very concept of 'local administration', as the term 'administration' denotes a non-participatory management model, where the citizen delegates responsibilities, duties and powers over an entity over the which has a limited influence on everyday life. By claiming participatory local administration, the citizen is questioning both the administrative model and the representative model, and in doing so raises new questions relating to local power, which means both for the instituted power and for the power of the urban dweller. We can synthesize the emergence of the concept of the Right to the City as the process through which the urban inhabitant demands space and mandate to exercise his being through or to the detriment of local administration structures. In this sense, the Right to the City finds greater relevance in cities where the class struggle, privileges related to economic inequality and conflicts related to the use of space reach greater intensity.

The commodification of urban life and its effects on the urban inhabitant's ability to influence the territorial, social, economic and political development of the city, in turn, make these same inhabitants question the models of urban management and, above all, the structures of representation as the local administration. By noting that the dynamics of globalization submerge the life of the urban dweller in a web of apparently delocalized and "deterritorialized" power, the urban dweller is paradoxically rediscovering the importance of local action, this reflection being particularly notorious among sections of the population that are or feel excluded by the positive effects of globalization.

At this stage, we must analyze the direct and indirect effects that globalization processes have had on local administration structures, namely, how market dynamics have affected their competences, how the financialization of land has affected the conflict regarding use of urban lands and, finally, what effect these factors have on the urban inhabitant's ability to influence and be directly involved in the political processes that affect their daily life.

Considerations regarding the overall philosophical foundations of the State and how in turn the functions of the State and how they

#### **2.3.4 Governance and Local Administration - 'New Public Management' and Network Governance**

"Nothing is more dangerous in public affairs than the influence of private interests, and government abuse of the law is a lesser evil than the corruption of the legislator that inevitably results from the pursuit of private interests" (Rousseau, 1762, pp. 77).

The emergence of networks that allow cooperation between different administrative entities, whether these are regions, municipalities or parishes, as well as

the need to reform the very function of the State, has, as a result, changed from a 'government' to a 'governance' perspective. 'governance' (Ferrão, 2010). This transformation of priorities gives greater priority to the question of how a territory is governed, and internalizes the concept that the government is not the only governing agent. That is:

"It is, after all, the transition from a directly intervening and executing State, which acts in a vertical and sectorialized way according to a command and control vision, to a different conception of the State's role, centered on interventions of nature, above all regulatory and strategic, valuing diversified relationships with different actors and increasingly organized in a network" (Ferrão, 2010, pp. 131).

Among the agents, civil society is increasingly predominant in governance tasks. In this context, power does not orbit around a single monolithic entity, so this governance model is a network and not a cascade.

One of the characteristics of modern civil society is that "these organizations do not mobilize themselves for the conquest of power, although we can speak of a revolution in everyday life and even of a search for conquest of power, that is, of a greater degree of influence over the events, and even on the policies, measures and plans that affect everyday life" (Melo, 2003, pp. 95). The influence of civil society on the central and local administration systems, however, is no longer limited to the application of pressure from the outside, with the administration systems themselves increasingly showing a tendency to delegate responsibilities and tasks to groups. non-governmental organizations.

This theme, in turn, leads us to questions about the true function of the State and how its nature can be transformed through the incorporation of civil society groups in the activities that have remained within the jurisdiction of the State. Therefore, we can say that functional decentralization through the delegation of responsibilities and authority to civil society groups raises several logistical and ethical issues. As Pierre (2011, pp. 673) mentions, "Externalizing legal authority to non-profit organizations - a more common reform strategy in public interest administrative systems reformed by NPM (New Public Management, New Public Management) than in Rechtsstaat systems - has generating complex problems related to training, professionalism and ethics, which make the efficiency and applicability of such transfers of authority questionable".

The Rechtsstaat administrative system is reluctant to externalize functions as it gives greater importance to compliance with the law and the preservation of its jurisdiction, while the NPM model, seeing the citizen as a customer, assimilates private market agents into its theory and practice, favoring privatization and competition between providers of services and goods, or as mentioned by Pierre (2011, pp. 675); "From this it follows that legal security is a main objective of the Rechtsstaat model, while management objectives such as cost efficiency are essential to public interest systems. This does not suggest that public interest systems are not influenced by laws and regulations, but these objectives are less prominent and have different organizational dynamics compared to the Rechtsstaat model."

In the public interest system, management efficiency is central, while in the Rechtsstaat system the citizen is, above all, an individual with a relationship of rights and privileges with the State, and not simply a client. This relationship, which affixes priority to the concept of law, protects the citizen by trying to impose impartiality in

the relationship between the administration systems and the citizen. Therefore, any attempt to alienate State services to the private or even civil sphere must take into account the possibility that such processes reduce transparency and remove strategic areas of activity from the State's jurisdiction. One of the main problems arising from the delegation of tasks by the State to civil society is that such measures break up the State and remove sectors from the sphere of public decision-making.

But since the Rechtsstaat system places more importance on citizens' rights than their needs, it is a system characterized by a lack of flexibility and apparent animosity towards structural reforms. In this sense, NPM models have brought a more pragmatic angle to the very notion of public service, precisely by giving more emphasis to the word service than to the word public. However, this pragmatism risks neglecting questions about acquired social rights that have been incorporated into State mechanisms, precisely to ensure that economic inequality does not limit the access of the neediest populations to basic rights. The local administration will have to protect rights and meet the needs of the population, keeping the two factors in balance. The economic crisis is increasing the needs of the population; but if this increase in needs is complemented by a decrease in entitlements, then local government reform processes risk being counterproductive.

The Rechtsstaat administrative system is part of a type of particular governance culture, a culture that makes the citizen more resistant to accepting that the management of State institutions is done in the same way as private institutions; for this reason, the reforms that introduced measures of efficiency calculations and cost accounting characteristic of private businesses into the Rechtsstaat systems did not do so through a public ideological debate. They were introduced by a paradigm shift in the administrative class and by the incremental reform of public services. It can be said "only with slight exaggeration...that NPM reforms were driven by ideology in countries of public interest (administration) while in Rechtsstaat countries it was driven by economic necessity" (Pierre, 2011, pp. 684).

Dilemmas also arise about new dimensions of conflicts of interest that result in greater participation of the private sector in administrative services of public interest, as well as in relation to the privatization of access roads, resources, services and public spaces and buildings:

"New forms of relationships have developed between the public sector, business and the non-profit sector, giving more weight, for example, to increasingly close forms of collaboration such as public-private partnerships, self-regulation, exchange of personnel and sponsorships. forms of public sector employment have emerged with potential changes to contractual obligations and obligations. As a consequence, there is clearly an emerging potential for conflict of interest involving the individual interests and public duties of officials, and growing public concern has put pressure on the government of so that the integrity of official decisions is not compromised.

"Since a conflict of interest is not corruption ipso facto, there is growing recognition that conflicts between private interests and public duties of officials, if poorly managed, can result in corruption. The correct objective of an effective Conflict of Interest policy is not, simply, the prohibition of all interests of a private dimension by public officials, even if such an approach were possible. The immediate objective must be to maintain the integrity of public policies and

administrative decisions, and of public management in general, recognizing that a unresolved conflict of interest could result in abuse of public office.

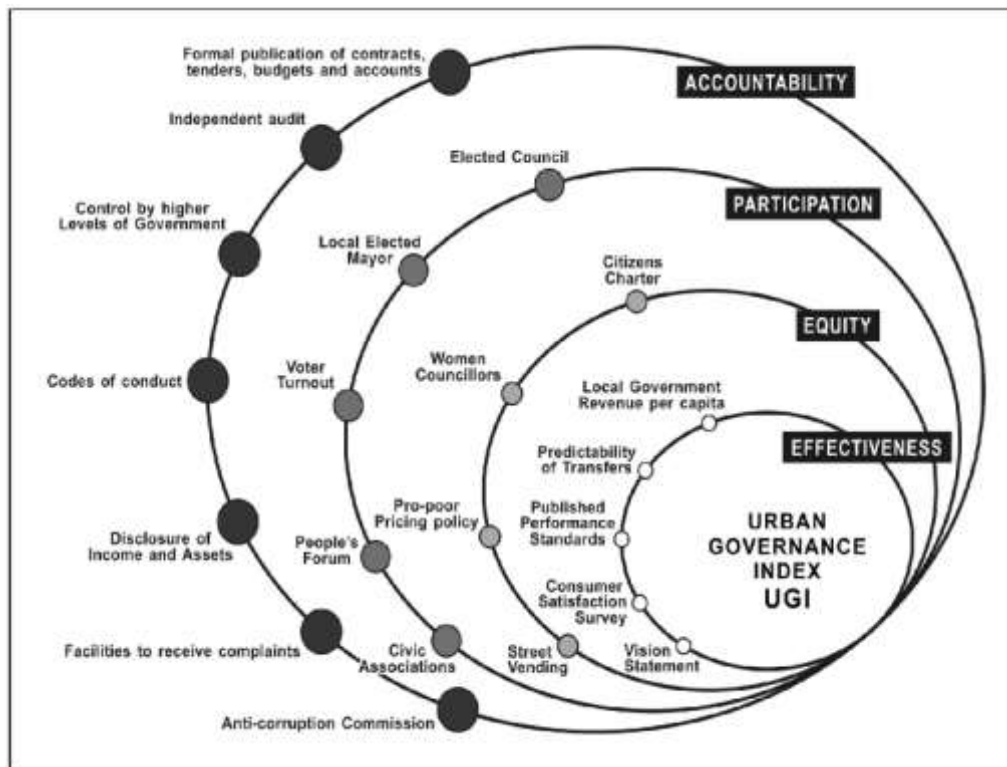
"This objective can generally be achieved by ensuring that public institutions have and implement relevant policies to promote integrity, effective processes for identifying and addressing emerging conflict of interest risks, appropriate external accountability mechanisms, and management models -- including sanctions -- which aim to ensure that public officials take personal responsibility for following the letter and spirit of such measures" (OECD, 2003, pp. 2-3).

### **2.3.5 Governance and Local Administration - Urban Policies**

Any reflection on urban policies should, in a first dimension, revolve around the debate on planning instruments and their capacity to meet the needs of the urban population. In this sense, rigid, technocratic and schematic planning is increasingly being called into question for the benefit of participatory, local, democratic and strategic planning. The planning tradition called 'Rational Comprehensive Planning', which relies on simplifying the objectives and subsequently the methods to be used, leaving little or no space for public participation, is proving to be increasingly inadequate to solve social and economic problems. of the modern city. This planning system that orbits around the capacity to meet pre-defined objectives (Banfield, 1973) does not adapt to changing needs, and demonstrates a limited capacity to implement urban planning and management that can respond to the needs of heterogeneous populations, showing itself, equally, poorly adapted to respond to the complexity of the problems inherent to the urban reality. It is in the crisis of rigid and technocratic planning instruments, a crisis that accompanies and, in a certain way, precipitates the crisis of representative democracy, that the emergence of participation paradigms in urban planning must be framed.

In this context, municipal structures are preferential platforms to represent the population and serve as a means to fulfil their political and social aspirations. It should be noted that point 1 of article 19 of the Treaty on European Union grants the right of citizens of the European Union (EU), who are resident in another member state, to vote and be elected in municipal elections (Gonçalves, 2003). However, illegal immigrants and citizens whose nationality is not of an EU country are excluded from this electoral act. Even so, the proximity of municipal structures will naturally make these structures suitable vehicles for measures aimed at reducing social needs, increasing citizen participation and fighting social exclusion.

Urban policies are an indispensable factor in reducing urban poverty and, to introduce measures capable of reducing poverty and social exclusion, administrative mechanisms must provide residents with improved quality of life and greater access to decision-making power over policies. urban areas (Brown and Kristiansen, 2009). For this purpose, the Urban Governance Index (Urban Governance Index [IGU]) was developed, which is divided into four spheres of assessment: Efficiency, impartiality, participation and 'accountability' (Image 3).



**Image 1 - Urban Governance Index, source: Brown e Kristiansen, 2009: 28**

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As mentioned by Cabral and Portas (2010, pp. 235), urban policies need to be revised thanks to some indirect and direct results of neoliberal policies. On the one hand, neoliberal policies impose particular characteristics on the city, such as segregation and social precariousness. On the other hand, the financial crisis, resulting, among other factors, from the lack of financial regulation, particularly in the area of credit for housing linked to urban expansion and real estate speculation, generates new questions that question economic, government and also urban practices:

"Neoliberalism, as a doctrine and concept, is used to characterize the new model of political system and urban governance, which succeeds Fordism. As a concept of political economy, it is associated with greater openness to the dynamics of the markets of forms of governance and control. In this sense, the new economic policy is expressed, among other components, through privatization processes, the deregulation of the control and management chains with decentralization of functions and measures to make the labor market more flexible. At the level of urban planning, it is reflected in selective and business forms of State intervention, directly and indirectly, in the urban environment, of which the large emblematic projects and large urban revitalization operations are an example (see Leitner et al., 2007; Keil, 2009; Brenner and Theodore, 2002).

"Due to its characteristics, the neoliberal model of governance and urban planning is the object of constant criticism that associates it with the production of a certain type of competitive and entrepreneurial city and urban spaces that promote polarization, social exclusion and spatial segregation (Moulaert et al., 2003) The recent crisis in the financial system and the central role of the real estate sector in the context of this crisis have placed on the agenda the exercise of criticism and forms of contestation (and alternatives) to liberal policies. however, to re-edit the project of the State of Providence, but to reformulate the role of public policies and the role of the State in a new context."

We also find that cities act as repositories of economic value in the form of consumers, workers, industry, etc., and that these are often under the jurisdiction of supra-urban entities: "However, even growing cities – although in different ways to cities in the West – are mostly unable to exercise power over themselves. Spaces controlled by global corporations, the state (military sites, roads, railways) and natural reserves protected by international agreements (such as European Union areas protected by the program Natura 2000) are beyond the control of the city authorities" (Nawratek, 2012, pp. 3).

### **2.3.6 City and Proximity: The Arena of Communication, Conflict and Discrimination**

Our conception of human rights is programmed to apply to States. But in a context where many cities increasingly have independent policies, together with the fact that more and more people are living in them, it should lead us to the conclusion that city laws should be scrutinized in the same way as state laws are. If a state passes a law to discriminate against a certain ethnicity, this is promptly criticized. If a state, for example, criminalizes homeless people, it would also be seen as an attack on human rights. However, this is not the case, at least on a sufficiently large scale, with cities. This is in large part because we are under the assumption that if we don't agree on a law in one city, we can always move to another. But let us imagine the application of this logic to States. It would clearly be a regressive position and above all, it would lower

our expectations regarding what is ethically permissible. We must apply these lessons to cities around the world, and increasingly advocate that there should be urban constitutions that guarantee basic rights for its inhabitants.

Some theorists propose that the production of spaces for debate where unequal power relations are minimized will lead to the formation of consensus and subsequently to the empowerment of social justice. Proponents of this vision are sometimes dubbed 'communication theorists'. In this point of view conflicts are mainly in the world of ideas, the problem is the lack of understanding and the solution is horizontal, democratic and honest communication. This view neglects the inherent conflict of interests relating to different sections and social classes, and finds in the urban environment an arena in which the theory of communication is particularly difficult to apply. Furthermore, if we take into account not only unequal power relations, but property relations, the model of deliberative communication finds even more limitations. As Fainstein mentions (2010, pp. 28):

"The theory of deliberative democracy emerged within political sciences to counteract the dominance of the interest-based public choice paradigm and its conservative tendency. Theorists in this vein deny that individuals have fixed preferences, based on self-interest, that can simply be registered; instead, they claim that people's views are informed through interaction with others. As a riposte to economistic thinking within social analysis, this represents a progressive move, but it does not adequately confront the constraints on democracy in a society where resources are privately owned and controlled."

Marx's concept of false consciousness, later developed by Gramsci through the proposition of the existence of ideological hegemony imposed by the ruling classes, is in this context useful to balance the view of communication theorists, namely by pointing to the fact that ideological dynamics are, as class relations, built on unequal relations, and not only on disinterested horizontal exchange of information (Fainstein, 2010). Above all, as Chantal Mouffe reminds us, as quoted by Fainstein (ibid, pp. 34):

"What is really at stake... is the need to acknowledge the dimension of power and antagonism *and their ineradicable character*. By postulating the availability of [a] public sphere where power and antagonism have been eliminated and where a rational consensus would have been realized, this [deliberative] model of democratic politics denies the central role in politics of the conflictual dimension and its crucial role in the formation of collective identities."

The density of occupation and the proximity between different social classes make the city and the issues related to it a prolific source of conflict and opposing social movements, sometimes contradictory to each other or to each other. The different urban actors interact with each other through assemblies, ideological, physical, institutional, party conflicts. This entire mosaic of relationships builds the work that is the city, and plays a leading role in the history it represents and for which it serves as a mirror. As Lefebvre mentions, stressing the centrality of conflict in the generation of social identities and organizational affiliations (2008, pp. 13):

"Community life (comprising general or partial assemblies) in no way prevents class struggles. On the contrary, the violent contrasts between wealth and poverty, conflicts between the powerful and the oppressed do not impede the attachment to the city, nor the active contribution to the beauty of the work. In the urban

context, the struggles of factions, groups, classes, reinforce the feeling of belonging. The confrontations between the 'popoco minute', the 'popolo grasso', the aristocracy or the oligarchy, have the city by location, by arena."

The proliferation of popular assemblies and movements with an emphasis on urban issues follow, for the time being, the deliberative model, but are often faced with State repression. These situations are the materialization of the criticism of the deliberative model itself, demonstrating that these same assemblies and movements of spatial occupation cannot find spaces for free action in the urban environment. It is in this context that the eruption of urban conflicts reaches an obviously spatial dimension, a dimension that we can analyse taking into account the jurisdiction of the power instituted over space and the mechanisms that this same power applies to preserve its jurisdiction. Police repression is a direct and somewhat ironic reminder of the inexistence or even impossibility of the eventual existence of spaces for horizontal communication. The natural conclusion is that conflict is not only necessary- it is inevitable, especially in stages of density of occupation and divergence of interests such as the urban arena.

One of the emanations of the interaction between established power and spatial dynamics is the convergence between the condition of spatial exclusion and political exclusion, as we can see in the tendency of sectors excluded from the process of political representation, such as illegal immigrants, tending to be sectors of population living in piri-urban areas. This dynamic is both the origin and the result of the exclusion of sectors excluded from the political process and urban planning. As mentioned by Menezes, et al (2006, pp. 12):

"It is also noted that the PER is only available to those who have been registered by the local authorities up to September 1993, and, in the case of foreigners, the right to resettlement is subject to proof of legal status in the country. aspects are worrying, especially due to the fact that, since that date, immigration has increased with some significance, increasing the pockets of poverty and socio-housing segregation, as well as the number of immigrants in an irregular situation. of solidarity and support associations for immigrants, which consider that ethnic minorities suffer from discrimination in the housing market (Holding National Report Portugal, NÚMERA, 2003)."

In this case, not only does the local administration act on the citizen, excluding the inhabitant and particularly harming immigrants, it also serves as the territorial policing arm of the State. It should be noted that the demolitions that often go against the will of the population are carried out under the pretext of defending the right to decent housing.

As a result of weak integration "social, cultural and urban, many of the problems existing in previous housing contexts were transferred to these new housing contexts". Adding to these factors the continued stigmatization of ethnic minority populations, namely the association with crime and violence, we can conclude that "the right to housing did not guarantee them the right to the city" (Menezes, et al, 2006, pp. 17). The quality of housing as a single development factor is inefficient, especially in the existence and persistence of factors such as poor infrastructure maintenance, economic exclusion, political exclusion, lack of choice regarding the place of relocation, and social stigmas that enhance social exclusion that in turn it can enhance areas previously mentioned as economic exclusion.

In turn, Lucinda Fonseca's conclusion cited by Menezes et al (2006, pp. 19) who states that "the key to avoiding the mechanisms of exclusion of immigrants and ethnic minorities and other risk groups lies in decentralized actions, based on strengthening civil society at the local level. However, to be effective, they must be anchored in a broader urban context that includes long-term structural planning" is insufficient. The logistical limitations of civil society, its financial dependence and the double hegemony of market and State dynamics mean that the intervention of these groups is not and cannot be more than mitigation plans that by nature are not 'structuring plans'. To allow for profound change, it is necessary to institutionalize development plans and interventions, and at the same time, the main factor that excludes the immigrants section can be eliminated, namely, the exclusion from political processes and the denial of representation. In this context, the representativeness of planning mechanisms is fundamental and emerges as the key element to complement the right to housing so that it can also become the right to the city, which in turn is only a measure to enhance equity, which in turn it is a fundamental way to allow for greater material equality.

But perhaps the most important factor of the city is the great capacity and incredible potential that comes from the proximity between different individuals and groups, and the resulting synergies, be they social, economic, cultural and political. Or as Seixas (2013, pp. 16) says, "the modern city assumes growing importance, namely due to the proximity and plural coexistence factors that are at the center of innovation processes." We can also come to the conclusion that these innovation processes need collective learning, not just individual or just sectoral, in order to bring structural benefits, as argued by Kirat and Lung (2016, pp. 28):

"In other words, within the innovation process, knowledge of the problem to be resolved does not necessarily imply that agents can make use 'ex-ante' of knowing its problem-solving procedures. Such procedures must be targeted by collective learning, once they have been deemed complementary in their specific skill area, while being ascribed non-homogeneous cognitive representations or frameworks. At stake is the development of cognitive models which are both coherent and shared among the actors in the innovation process. It is the model's development that could necessitate a geographic proximity – either temporary or durable – among the actors possessing those pieces of knowledge which cannot be codified."

We then come to the conclusion that cities are both the preferred stage for innovation and for the same knowledge transfers to reach the critical mass necessary for this same innovation to be possible, lasting and on a large enough scale to have a systemic impact. And the more varied and complex the interconnections and transfers of knowledge are, and the greater their proximity index, the more prevalent and complex will also be the innovations they can allow. There is also an essential component behind the city's ability to foster innovation: the presence of one or several cultures that extend to a mass large enough to be transformed into the matrix behind organizations and institutions: "Yet, organizations cannot persist without being embedded into an institutional, or even a cultural context which is highly determinant of some of their characteristics" (Kirat and Lung, 2016, pp. 29).

## 2.4 Beyond Self-Hating Urbanism - Identifying a Common Pathology

What follows is my own paper which serves as a further exploration of some of the themes that one has covered so far in the theoretical introduction. It diagnoses the ubiquity of anti-urban ideas both in popular culture and within the discipline of urbanism. This paper is a fitting introduction to the fundamental theme of this Thesis, a mechanism that allows for the incremental verticalization of city centres with the aim of increasing housing capacity, because it points to the cultural, often over-looked dynamics which serve as blockers for urban development to be both theorized and put into practice along rational and scientific axioms. In pointing to cultural, political and in some key instances, sometimes even religious dynamics that perpetuate negative connotations that we, sometimes consciously, sometimes unconsciously, associate with cities, one is both laying out the theoretical foundations for the methodology used later on, as well as the central mechanism that this Thesis spawns, one is also attempting to demolish ideological barriers which are often presented as scientific, but are, in fact, their precise opposite, and most often resemble deeply rooted biases and pseudo-scientific obsessions. One will now cite the whole of the Beyond Self-Hating Urbanism article with some additions and clarifications below (João Silva Jordão, 2018a, pp. 153-158), and will serve as a theoretical introduction to some of the ideas that are pervasive within urbanism and that, one argues, serve as ideological impediments to the practice of urbanism as a whole.

### 2.4.1 The Evil, *Unnatural* City (?)

We can consider the possibility that urbanism may not be reaching its full potential because a substantial number of urbanists are *self-hating urbanists*. One of the possible reasons for the prevalence of this affliction is because this possibility has not yet been sufficiently proposed, nor adequately diagnosed. *It is possible that urbanists may often practice urbanism somewhat half-heartedly as they are, even if only subconsciously, distrustful of the benefits that cities can bring to those who inhabit them.* The profound legacy of the recent history of cities, and in particular the manner in which it continues to be tainted by the notable characteristics associated with industrial cities, such as squalor, pollution and working-class slums, as well as a mixture of cultural and social factors which often go beyond that which scientific research in the field of urbanism dares to address, means that these implicit biases are found even within the academic and professional class that should be most capable of transcending them. Even though more than half of the world's population now lives in cities, and while this rate is expected to rise dramatically over the next decades, many still see cities as unnatural and detestable. This not only limits the efficiency of urban theory and praxis; the concept that cities are a negative factor for both humanity and the environment does not stand to scientific scrutiny.

For some the rise of megacities, for example, and the scale and density they entail signals the coming of an age of organized crime, insecurity and chaos, as displayed by an alarmist Pentagon video recently made public by The Intercept (2016). In a military training video called Megacities, Urban Future, the Emerging Complexity, a stark future of young criminal gangs, overburdened public services, a booming informal economy and above all, uncertainty and an incapacity for Local Administration to plan and regulate drastic urban growth is predicted. However, regardless of the extent to which urban living and living in dense urban environments in particular continues to

be depicted negatively, there is mounting evidence to demonstrate that not only is this negative connotation underserved, in many aspects, the opposite might be true- urban living and the overall effect of cities might indeed, as argued by Glaeser (2011), be the key to making us “Richer, Smarter, Greener, Healthier, and Happier”.

Regarding the allegedly unnatural nature of the city, Le Corbusier argues that, within the chaotic nature, man creates an environment that he deems to be in the benefit of his own safety, a protective zone that is in accord with what he is and what he thinks; he needs reference points, fortified places within which he may feel safe; he needs things that are deterministic. What he does, is a creation and it contrasts all the more with the natural environment so that it is more in tune with thought and further away from physicality... Man hacks away and saws into nature. He opposes it, fights it, and settles in it. What a simple and magnificent work! (1925, pp. 21-23). Though it has come to be generally accepted that human activity has a variety of negative impacts on the natural environment, this statement depicts cities as having an inherently adversarial relationship with nature. Though this may be the case at present, this does not mean that it will inevitably remain so in the future. Furthermore, from a territorial perspective, and in light of modern scientific research, perhaps it would be more correct to define cities not as the process through which “man hacks away and saws into nature”, but rather as one of, if not *the* main instrument through which a state of relative equilibrium within nature can be reached. This distinction, or rather, this *evolution* in how we see the relationship of cities with nature and subsequently, what they tell us about ourselves (as an increasingly urban species), from *inevitably adversarial* to *potentially beneficial*, is not secondary.

It is not surprising then that cities are often seen and portrayed as a necessary and yet unfortunate evil. However, there is an increasing body of scientific research that demonstrates that urban living reduces all manner of maladies, not least the ailment that untamed nature represents for human beings. Cities have also been shown to substantially reduce the general impact that human activity has on nature due to the positive effects of agglomeration that is renders possible. Nature is, as now has become commonplace for a biologist to point out, indifferent, and in some cases hostile, to human beings. Without the city humans are much more vulnerable to all manner of afflictions, or in other words, easy prey for nature- cities, however, are our fortresses, our *citadels*, and one would generally think that *this is a good thing*. Without cities, humankind is weak and uncivilised. However with cities, humanity becomes strong and multiplies. This is commonly accepted- across fields such as archaeology, sociology, anthropology and politics, the advent of urban life is indistinguishable from the beginning of civilisation itself. But there is also a common perception that by building cities we also separate ourselves from nature. It is in this domain that urbanist should perhaps be more interventive- urbanists must not only argue, but *demonstrate*, that through cities, and *only* through them, can humans reach their potential, individually and collectively, be it economically, technologically, socially and politically, which in turn may also be the most likely path to also attain a state of relative equilibrium with the natural environment at large.

The concept that one can come to hate one or several of one’s defining characteristics is not new. Being embedded in a society also often entails being imbued with its prejudices, and whether those prejudices be racism, dislike for a particular professional group or a social phenomenon, one can come to internalise these prejudices even if this generates profound internal conflicts. Such has been, and

remains, the predicament of the urbanist in a society where the distrust for the city is endemic.

Anti-urbanism has been so pervasive throughout the history of the United States that its presence can be felt across the political spectrum (Smith, 2014). Leo Marx states that the presence of a pervasive anti-urbanism within American literature “constitute a puzzle in need of explanation” since the very foundation of the United States was built upon city to city migration (Marx, 1981, pp. 66), and that it might be, in some cases, the result of the so-called “Protestant ethic” having some degree of distrust, resentment or even disdain for the “metamorphosis of the Puritan town into the modern Vanity Fair or capitalist city” (1981, pp. 72). It is then unsurprising that the two seminal works which seem to glorify the countryside and rural life, in detriment of cities and urban living, Ralph Waldo Emerson’s *Nature* and Henry David Thoreau’s *Walden*, both written in mid-19th Century America, were written at a time of rapid urban development and the subsequent rapid transformation of everyday life. Ralph Waldo Emerson, for example, famously stated that “The end of the human race will be that it will eventually die of civilization”. Both stand out while still being a part of a greater body of novels in which the main protagonists of each story

enact the ideal life of the American self journeying away from the established order of things into an unexplored territory we tend to think of as Nature. The object of the journey, implied or avowed, is the nearest possible approximation to the situation of the autonomous unencumbered self. The entire canon might be described, in other words, as a continuous replaying or testing of the Emersonian doctrine of self-reliance as the epitome of ‘the natural’ (Marx, 1981, pp. 74).

However this concept presents us with a series of questions and difficulties, not least that self-reliance is, from the economic perspective, the very antithesis of urban living. Cities are the epitome of systems of interlinked nodes which attempt to fulfil the potential and maximise the collective ability of its inhabitants with inter-dependence and synergic interactions. Though some may contest widespread accusations that these novels espouse a form of “anti-urbanism”, one can certainly say that the promotion of a very particular form of economic individualism as a form of virtue, i.e., *self-reliance as a worthy and virtuous pursuit*, not only differs from, but is in fact, *the direct opposite of the very logic of the city as a model of human organization*. The city is after all a web of infrastructures erected so as to allow for dense cohabitation and complex networks of cooperation- in essence, *it is the very coming alive of the antithesis of the individual forager surviving on his/her own*.

City-phobia is so ingrained in our society and our collective subconscious, that even urbanists are prone to adopting some of the negative associations that are often projected upon the city, as unsubstantiated as they may be. So much so that urbanists will often, without noticing it, limit, or even sabotage their theory and practice because of the underlying assumption that what they are doing should carry some degree of shame or guilt. As a result of the influence of the explicit or implicit anarcho-primitivist concepts that abound in popular culture, urbanists may be falling prey to the concept that in building and shaping cities, they are perpetuating the original sin that is the very birthing of civilisation, if you will.

One of the most revealing recent works of avowedly anti-urban anarcho-primitivism is *Uncivilisation: The Dark Mountain Manifesto* (2014). It paints a disconcerting picture of a world spiralling into a vortex of self-destruction, hypnotised by the “myth of progress”, which is the “engine driving our civilisation” (2014, pp. 7).

In response to “the last taboo [which is] the myth of civilisation”, it proposes “Uncivilised art” (2014, pp. 20-21). And not only does it state that the solution to our current predicaments is ‘Uncivilised art’, it also points an accusing finger at where the problem comes from:

writing, in short, which puts civilisation - and us - into perspective. Writing that comes not, as most writing still does, from the self-absorbed and self-congratulatory metropolitan centres of civilization but from somewhere on its wilder fringes... It will collect the words and the images of those who consider themselves Uncivilised and have something to say about it; who want to help us attack the citadels... Our literature has been dominated for too long by those who inhabit the cosmopolitan citadels (2014, pp. 22, 28-29, 31).

In short, the self-destructive impulses consuming the world emanate primarily from urban art and the culture of cities, the “citadels”, a culture which is inherently self-destructive and delusional- the solution, comes from the hinterlands of wilderness and uncertainty that have as of yet been left unconquered by the relentless advance of “the myth of human centrality” (2014, pp. 30).

One must also note the latent religious connotations often found in works that espouse anti-urbanism, which are plentiful. On several occasions The Holy Bible depicts cities as cesspools of sin and damnation. In our collective subconscious, all cities can be deemed to be replicas of “Babylon the Great, the Mother of the Abominations of the Earth”. As is pointed out by Crook (1997, pp. 3):

Cities, like human beings, do not get a very good press in the Bible. Their origins were in sin, rebellion and violence, and they continued in this vein. They were concentrations of oppression, corruption and bloodshed, as well as paganism and immorality.

Though many have pointed out that it would be simplistic and even incorrect to say that the Bible only portrays cities negatively (see for example Jacobson, 1994 and Stockwell, 2015), it would be fair to say that some of the negative connotations attached to cities within the Bible have evolved and been recycled in popular culture throughout the ages.

The self-hating urbanists think, even if subconsciously, much along these negative axioms. The negative connotations often associated to the city are so pervasive that even, and sometimes, *especially* urbanists are prone to internalising them and inserting them, whether consciously or subconsciously, into their work. If urbanists with a particularly virulent form of self-loathing are to be placed at the helm of urbanism, their very particular internal contradictions will probably negatively affect their capacity to defend the cause of urbanism and thereafter to positively contribute to more just and harmonious city living. This factor will also, in the context of a rapidly urbanizing world, limit their capacity to positively address the challenges posed by urbanization. Acts of self-sabotage will often mark their ideas and practice because they have been made to believe that their art, urbanism, is a degenerate one. *Self-hating urbanism within urbanism is akin to a pathology* that then trickles down and affects large numbers of people, most notably, urban inhabitants.

We must therefore as urbanists, without exception, dive fearlessly deep down into our individual and collective minds, in order to identify and deconstruct the cysts of self-loathing that we have been coerced into adopting, so as to emerge from the

daunting depths of our minds as more responsible and competent urbanists, truly capable of practicing urbanism in a way that does it justice.

What if urbanists had, all this time, been busy building castles on sand? Not literally, but figuratively. What if we have been busy trying to make cities better, but all the while forgot to even try to demonstrate that cities are actually a positive force to begin with? Perhaps because we never realised that such a task was necessary, or maybe because we never envisaged that cities might be a good thing at all. Either way, going *beyond* self-hating urbanism is an urgent and worthwhile endeavour.

As we can see, some of the most prominent urbanists, as brilliant as they may be, have striking elements of self-hating urbanism within their ideology. As Lippolis mentions (2016, pp. 20), the most important historian of Western urbanism, Lewis Mumford, presents us with a highly alarmist vision of the future of cities, which are according to him destined to be swallowed up by what he calls the "megamachine". In *The Pentagon of Power*, 1970, Mumford effectively describes contemporary civilisation as a totalitarian technocracy, the result of a secular attempt to create a mechanism of domination of man by man through the power of technique. At this moment it is not only cities, but also civilisation itself, which *through* the cities acts as a destructive force of domination and oppression.



**Image 2 - The monster-machine turned sacrificial altar at the heart of the city- a quintessential negative depiction of the city from Fritz Lang's 1927 classic, Metropolis (image taken from Wicked, 2011)**

Lippolis mentions furthermore (2016, pp. 22), regarding the insertion of negative stereotypes and associations regarding cities and city life into our collective consciousness: *We* (1924) by Evangeline Zamyatin, *Brave New World* (1930) by Aldous Huxley, and *1984* (1948) by George Orwell, are the founders of the contemporary dystopian-totalitarian genre, which has enjoyed increasing success and reached its peak of popularity from the 1970s onwards, coinciding, not by chance, with the assertion of global capitalism.

If the city, as a social expression of progress, was often the protagonist in the history of science fiction, over time the dystopian metropolis progressively invaded territory once occupied by the gratifying and innovative places imagined by positive utopias. Masterpieces of this genre were often set in cities that were not explicitly described (Orwell's London 1984 is loosely defined as "city of a million garbage

containers"), however, from the 1960s onwards, an increasingly precise urban representation starts to emerge. It is no longer a question of strange cities of a distant future, but of "our" cities, projected in the near future with truly disturbing traits.

#### **2.4.2 The Good City**

A specific way in which the anti-urban pathology manifests is through the common misconception that urban life is inherently unhealthy. Though this might have been the case in the congested, polluted cities of the early stages of the industrial revolution, many studies indicate that modern urban living has the ability or potential of providing a healthier environment and lifestyle for its inhabitants when compared to rural environments- not only urban living, but ironically, *dense* urban living in particular. Urban life provides more access to a broader pool of people, and it has been demonstrated that complex and sustained social relations are as much of a factor in prolonging life as quitting smoking or drinking alcohol (Holt-Lunstad et al, 2010, pp. 14). It has also been pointed out in a study that takes the Italian city of Turin as an example that access to public transportation and other services, more often found in dense urban areas, contribute to a healthier cultural, mental and social life (Melis et al, 2015). The presence of high levels of expertise in urban areas also makes cities excellent locations for the sharing of information and skills (Quigley, 2009) in particular because high levels of proximity result in more employment opportunities (Rosenthal and Strange, 2001). In the minds of many, closeness is stifling, but economically, it is a valuable asset.

However, even though an increasing body of scientific research is starting to demonstrate decisively that urban living can be, and often is, healthier, both mentally and physically, the public perception is still lagging behind. Some argue that the city is the key to making us healthier, happier, wealthier and overall, more prosperous (Glaeser, 2011). And yet the collective consciousness still seems to hold cities as a necessary evil. Moreover, it is not only in regards to health that the public perception might be wrong. We will often encounter illustrations of rural life as being spiritual and city life as being soul-crushing. However, the slightly higher suicide rates in rural areas along with other factors, such as greater access to cultural hubs and enjoying more probability of having sustained social relationships within dense urban environments, would indicate the contrary.

#### **2.4.3 The Spiritual City**

Though as we can see, not only would it be unjust to say that cities are necessarily soul-crushing and anti-spiritual, we can go further and say that cities are inherently spiritual. As Stockwell mentions:

Ancient cities were by definition religious and theological. Almost all of them had holy places, ziggurats, temples, or sacred shrines in the central places of the city. (2015, pp. 10)

To say that the city is primarily a religious phenomenon will surprise even the most seasoned urbanists. However it was the capacity of the primordial building, *the temple of Eridu*, which some claim was the first city in the history of humankind, to attract visitors and then to make people want to live near it, that ultimately resulted in the formation the first recognisable city centre (Leick, 2001). This temple produced the phenomenon which drew members of agrarian societies to a single place: thus, the gravitational power of places of cult preceded demographic density, and the need for

density preceded the building of infrastructures which could then accommodate it. In the primordial city, *the temple is the first and central building*, and other structures are merely its accessories. The most critical points of access were valleys, and above all, rivers. The changing of the course of the rivers could dictate the success or failure of a city. With the invention of roads, the importance of the rivers was somewhat reduced, though by no means eliminated. Even other possible candidates for the title of 'first city', most notably Göbekli Tepe, tend to be temples, i.e., centres of convergence which seemingly held a religious significance, hence attracting visitors and pilgrims.

In this context, pilgrimages, which were essential for the growth of places like Eridu, may also be understood as places which produces gravitational fluxes, or centripetal forces if you will, the source of which is the importance given to temples and places to which abstract meaning was endowed. The purpose attached to a site is therefore of great importance for the development of territorial dynamics, and this happens across different scales. The convergence of people onto one place forms others dynamics such as commerce and other such economic activities, factors which ensure the livelihoods of those who come to dwell or pass through these points of convergence. As the symbolic importance of these places increases, so too does the economic activity which takes place therein.

Hence it was public or semi-public space, as temples tended to be, even if sometimes only partially, and after that squares and bazaars, which gave value to the surrounding lands, which in turn were appropriated, constructed on and rendered valuable due to their juxtaposition to these important points of convergence.

Ultimately, the fact that cities are often depicted as being void of spirituality, in contrast to the supposedly sacred rural or natural environments, is not only ironic, but directly contradicts what we now know about the very origin of cities themselves.

#### **2.4.4 Humanity Squared**

Having moved from a rural society to an industrial society, an urban society will now rise - and the city will no longer be a mere (though always central) element of society and its condition, becoming instead itself the very *condition* of society [...] Aristotle - calling the synergetic and necessary human condition of 'living together' *synoikismus* - has written how man only becomes human through his participation and full involvement in his community (Seixas, 2013, pp. 67, 280).

The city is the utmost expression of humankind. To love the city is to love humanity. To want what is best for the city is to want what is best for humankind. To hate humanity is to hate the city in all its expressions.

Furthermore, we must ask ourselves, if humanity is an inherently urban species, is prevalent anti-urbanism, i.e., a widespread hatred of cities, not a form of collective self-hatred?

Its density represents multiplication and intensification of human activity and the fulfilling of its essence. In this context, its heightened quantitative characteristics represent a qualitative leap that translates into an essential change in the nature of human condition itself.

Its organic composition subsequently results in the construction and transformation of human experience that tends towards the fulfilment of the individual and collective self in both positive and negative aspects. The city can be, and often is,

paradoxical in its dynamics, as well as contradictory in its results. Within it we find the peak of justice and injustice, both vying for space and dominance. The battle for the hearts and minds of the people gains a territorial dimension and hence, is secularised (in the real sense of the word- it becomes attached and constrained within time and space), and through the contestation over space and ideological battles. The city cannot aspire to be a place of perpetual physical peace though, paradoxically, it is the scenery most adapted for the formation of physical and ethereal syntheses due to the proximity and coexistence of conflicting forces, thus making the clash between thesis and antithesis, or the *abstract* and the *negative* all the more likely, thus providing an environment fit for the emergence of *concrete* forms and ideas.

Urban reality obliges humanity to multiply itself by itself. It is the apex of human expression, the peak of human experience. In seeking to go *beyond self-hating urbanism* one is also proposing that we re-establish and re-emphasize the capacity of cities to allow for, and hasten, socio-economic evolution, and their capacity to project societies into their next phase of evolution. Going beyond self-hating urbanism is also to imbue urbanism with the constant reminder that cities are the stage for individual and collective betterment. In short, transcending self-hating urbanism is to come to terms with the idea that *the City = Humanity Squared*.

#### **2.4.5 When Political Activism Meets Verticalization**

Now let us see how some of these latent anti-urbanistic tendencies might manifest in real life scenarios. In the article cited in the next sub-chapter, and which I have hereby translated, I argue that ongoing campaigns against the construction of tall buildings in central Lisbon will sooner or later become incompatible with campaigns that also demand for the construction of more affordable housing in central Lisbon. The debate I tried to start in this article published in one of Portugal's leading publications is also linked to the conclusions reached in the paper titled "The Sliding Puzzle Model-Transforming Sprawled Concave Cities into Compact Convex Cities" (see section 3.1 of this Thesis), where I compare cities that either have more density and height in the centre, which I call convex cities to those which have more density, and most importantly, height, in their peripheries, which I call concave cities. Lisbon could very well be characterised as a concave city due to the relatively low building height average within its city centre, its sprawling, often tall social housing complexes in its periphery as well as the trend, witnessed since the 1950's and 1960's, of a large part of its population having been progressively pushed out to its periphery. This makes the need to build more housing, which often would mean also verticalizing its city centre incrementally, in order to fulfil its growing housing needs, increasingly obvious, which in turn means that some of the political contestation, often coming from the same activist groups which also complain about the lack of affordable housing in the city centre, all the more contradictory, problematic and counter-productive.

The main concept of the following opinion piece, published in one of Portugal's most notorious newspapers, *Público*, and translated into English for the purposes of this Thesis, will be referred to again in this Thesis insofar as it critiques sometimes contradictory demands by civil society when it comes to both the augmentation of accessible housing, as well as constraints to building heights in central urban areas- the article argues that this contradiction is somewhat rooted in irrational and unpragmatic approaches to political activism in general as well as it might certainly be linked to some of the pervasive anti-urban ideas that the article "Beyond Self-Hating Urbanism" article which has been reproduced beforehand. The article was published in December

of 2019 (Silva Jordão, 2019), and discusses a dispute relating to a redevelopment plan near Lisbon's Mouraria neighbourhood.

#### **2.4.6 The Portugália Tower and the Fear of Heights**

Post-crisis Lisbon is unrecognisable. It's a city with more opportunities, more construction, more urban development, more urban regeneration, more tourists, but also more evictions, more property speculation, and more expensive rents? Much more expensive. And some taller buildings are also starting to appear. Faced with all these changes, critical voices are emerging, as you might expect. In the case of higher rents, this criticism is legitimate and absolutely necessary. But sometimes, when faced with the complexity of urban transformation, we fall into the temptation of simply being against any and all change. But being against change just for the sake of it has a name - it's called being reactionary.

An example of this is the generalised aversion to high-rise construction that we have seen. The justifications for this aversion have been varied - they are usually landscape-based, but also sometimes take the form of a supposed criticism of capitalism, property speculation, and sometimes, as in the case of the Torre de Picoas or the CUF Tejo, accusations of corruption and/or non-compliance with planning rules.

But sometimes it really just seems to be a purely ideological aversion to verticality, a kind of inverted vertigo in which a tall building provokes feelings ranging from pure cynicism, through a mishmash of barely coherent urban themes, to purely reactionary attitudes against any kind of urban transformation. Nothing arouses so many primal anti-urban reflexes as a tall building.

One of the exponents of these reflexes has been the movement against the Torre da Portugália, whose logo focuses on the "excessive" height of the proposed building. In its document of 18 June 2019, entitled "Participation in the public debate process of the Stop Torre 60m Portugália Movement"

"What led us to take a closer look at the project under public debate was the excessive height of one of the proposed buildings which, at over 60 metres and 16 floors above ground, would create a major disruption in the system and the urban fabric of Arroios."

The same document says that the project has other problems, but that it was the height of the building that triggered this exercise of citizen oversight of the Portugália Tower. This kind of exercise is obviously commendable, but we should only ask ourselves whether it is rational to make the Torre da Portugália the ultimate symbol of everything that is going wrong in Lisbon. The question here is - of all the recent changes we've seen in Lisbon, is the appearance of a few taller buildings the one that deserves our attention? And are we so sure it's a bad thing?

The criticisms of the financing model and the use of the building that have been made are then put on the back burner in favour of purely scenic reluctance. But the question that matters here is not the size (of the building), but how it is used. And if we choose a landscape criticism, the problem with the Portugália Tower is not that it's tall, but that it's particularly ugly (the image of the project shows a highly generic glass tower). And for those who complain about the lack of affordable housing in the centre of Lisbon, the height of the Tower should be in favour of the project, not against it.

And what has the movement against the Torre da Portugália achieved so far? It has managed to get the project for the building eleven metres lower. At what cost? Less floor space, lower ceilings and less housing. This may be a victory for the movement against the Torre da Portugália, but campaigning against the construction of tall buildings will sooner or later become incompatible with the demand for affordable housing in the centre of Lisbon.

One of the main questions we should ask the movement against the Torre da Portugália, which includes many residents and homeowners in the Arroios area, is - should a group of residents in a certain area, and especially the homeowners, have the right to deny the increased likelihood that others will also become residents and homeowners in the future? And isn't that, after all, what happens when a group of residents gets together to prevent more and higher buildings from being built in their neighbourhood?

We can also take another approach. We constantly complain about "excessive" tourism in Europe's urban centres. But we say little about the reactionary attitudes towards urbanism that we have adopted, which have paved the way for this to happen.

Because of these attitudes, European city centres have become museums. Of course they have. Everything that we "protect" from change with a simple instinct for conservation in mind naturally becomes a museum. And then we're surprised when hordes of tourists come to take photos and our houses are turned into hotels. But isn't that, after all, what you'd expect to happen in a museum?

In a context where many European centres are becoming open-air museums, mere playgrounds for tourists while their inhabitants are successively pushed out to the peripheries, demanding more affordable housing in the centre must be, and will inevitably become, one of the central political demands of the near future. And in cities like Lisbon, affected by the aggressive gentrification and massive touristification of its centre, in a context in which a large part of its inhabitants have already been successively pushed to the outskirts in recent decades, and in which virtually only high-rise housing has been built far from the centre, the verticalisation of the centre itself should not make us dizzy. On the contrary.

The massive social housing built on the urban peripheries represented a historic advance, but it has left us with a legacy of socio-economic exclusion, and with too much housing on the periphery and too little in the centre. It has also created geographical and subsequently socio-economic pits in our cities and societies. The challenge for social housing in the future will be to "invade" the centre. If we object to the Portugália Tower because of its height, what right do we then have to demand that enough be built in urban centres?

We could go even further. Instead of disputing the "excessive height" of the Portugália Tower, how about we demand that more towers be built? Not just in Arroios, but all over Lisbon. As long as they are for housing, and at affordable costs for those who need them most."

The concept of height as well as considerations pertaining to housing capacity and accessibility are of course recurrent themes and objects of study throughout this Thesis.

## **2.5 Do People Dream of Radio Centric Cities (as Urbanists Often Do)? Opportunities and Dangers of Contemporary Urban Utopias and Dystopias**

After a more philosophical and theoretical introduction in the form of the previously discussed paper, let us now take a look at another one of one's own publications as one starts to lay the foundation for a more specific and technical discussion over urban morphology and urban planning mechanisms. Firstly, it diagnoses specific urban problems, namely, urban segregation, the need to redevelop urban centres and build more compact and continuous cities, but does so by developing a critique of the radio concentric model, which this paper goes as far as to characterise as an obsession within the field of urban planning, which has ultimately shaped many of our cities in unwanted ways, namely, and taking the city of Lisbon as a case study, by making them overly segregated, hierarchical, and ultimately pushing urban development out onto peripheries. This in turn makes cities less compact and adaptable, but it also serves as a force counter to other important axioms for just and efficient urban development, namely polycentrism and consistency of the urban fabric.

In discussing and demonstrating how this radiocentric obsession is ubiquitous in urban planning culture and mechanisms, one is advancing the work started in the previous paper insofar as it discusses and dissects some ideological phenomena that then affect and permeates how we both view and plan cities, but perhaps more importantly, it takes this tone and angle of analysis and gives it a more precise and technical dimension relating to urban planning which then sets the foundations for the more technical development of urban planning analysis and the development of urban planning mechanisms that will follow. This peer-reviewed paper is perhaps the most important theoretical foundation found within the whole Thesis precisely because it not only diagnoses some key challenges, but also points very directly to some of the solutions that become apparent within its logic and made clear through the evidence that it presents, whilst being based around a very specific case study, thus transforming and adding onto a theoretical discussion that was, up to this point, still fairly abstract. The following is taken from one's own article (Silva Jordão, 2018b, pp. 13-40):

### **2.5.1 Zoning**

*“Be careful what you wish for, you may receive it” - W. W. Jacobs*

In this chapter one will demonstrate the ubiquity of the radio centric design in classic and contemporary urban utopias, and the manner in which they have seeped into urban planning and influenced the shape of our cities, mainly via municipal master plans, and how this in turn has helped to influence our common vision of spatial hierarchy, centrality and peripherality.

Zoning is perhaps the urbanist's prime tool. It is natural, then, that schools of urbanism, as well as political and economic ideologies, produce approaches and methodologies of zoning that are not only different amongst themselves, but which are often incompatible, and inevitably aligned with their interests and ideologies. And zoning is not only the main tool of the urban planner. Even if the urban planner does not intend it, any underlying ideology will always inevitably affect the urbanist's theory and praxis, and in particular the manner in which we go about territorial planning, just as it will inevitably affect specific planning instruments such as Master Plans. Our priorities, our strategies, and overall urban philosophy are built upon various

philosophical, ideological, and political axioms, and our approach to zoning will inevitably be one of the most visible, tangible and evident emanations of our latent ideology.

### 2.5.2 Utopian Urbanism and the Radio Centric Obsession

Urban utopias and dystopias are of primary importance in contemporary culture. The battle for the future is also fought in the arena of imagination, and in turn, contemporary imagination continues to be affected by our visions of what cities are and of what they could be. As we shall see, the conventions which permeate urban zoning are intimately connected with the urban utopias of the past and present, and throughout these utopias we can identify a common and transversal axis - the ubiquity of the radio centric arrangement and the rigid hierarchization of the city it entails, which subsequently tends to shape cities in such a way that the relative proximity to the center indicates a rank within the city's hierarchy, which in turn results in serious socio-economic inequalities between the centre and its periphery.

We can trace back many of modern day cities' main problems to the reverberations of centralized planning- so much so that incremental, participatory and organic planning schools of thought are increasingly gaining ground as the dominant alternative planning methodologies within contemporary urbanism. Overly centralized planning, often criticized for its deterministic nature and perceived authoritarian rationale, has come to be seen by some as the main flaw of the dominant urban planning system, defined as *Rational Comprehensive Planning* by Banfield (1973).

Let's first look at different examples of how radio centric urban design has evolved through the ages, and how recurrent it is within different visions of ideal cities:



Image 3 - A map of the city of Palmanova, designed by Vincenzo Scamozzi



**Image 4 - The city of Palmanova, Italy, maintains its original design**



**Image 5 - Campanella's City of the Sun is an example of utopian urbanism, where the ancestral symbol of the Sun represents the nature of the perfect city**

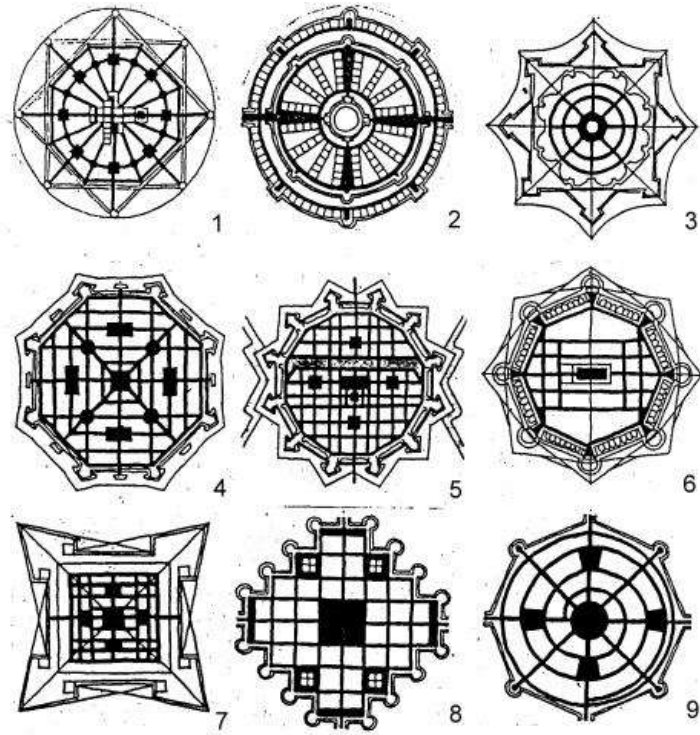


Image 6 - Different Renaissance conceptions of the ideal city: 1. La Sforzinda by Filarete (1460 – 1465); 2. Fra Giocondo (Giovanni of Verona), c. 1433 - 1515 ; 3. Girolamo Magi (or Maggi) (c. 1523 – c. 1572) (1564); 4. Giorgio Vasari (1598); 5. Antonio Lupicin

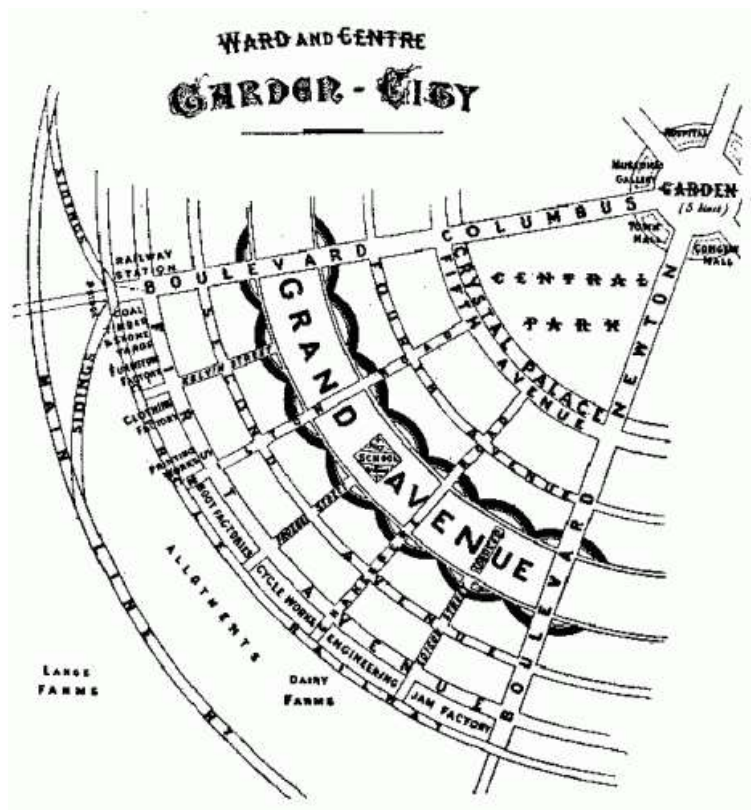


Image 7 - Sir Ebenezer Howard's radio centric utopia of the Garden Cities of To-morrow (1902)



**Image 8 - The ideal city of the Venus Project, clearly inspired by Renaissance urban utopias. It is a completely centralized, radio centric city**



**Image 9 - The Burning Man Festival adopted, after years of growth and evolution, a radio centric arrangement, to the detriment of previous dispositions which were more disperse and diffuse**



**Image 10 - The utopian city of Auroville is designed like a radio centric vortex (Project, not yet built)**

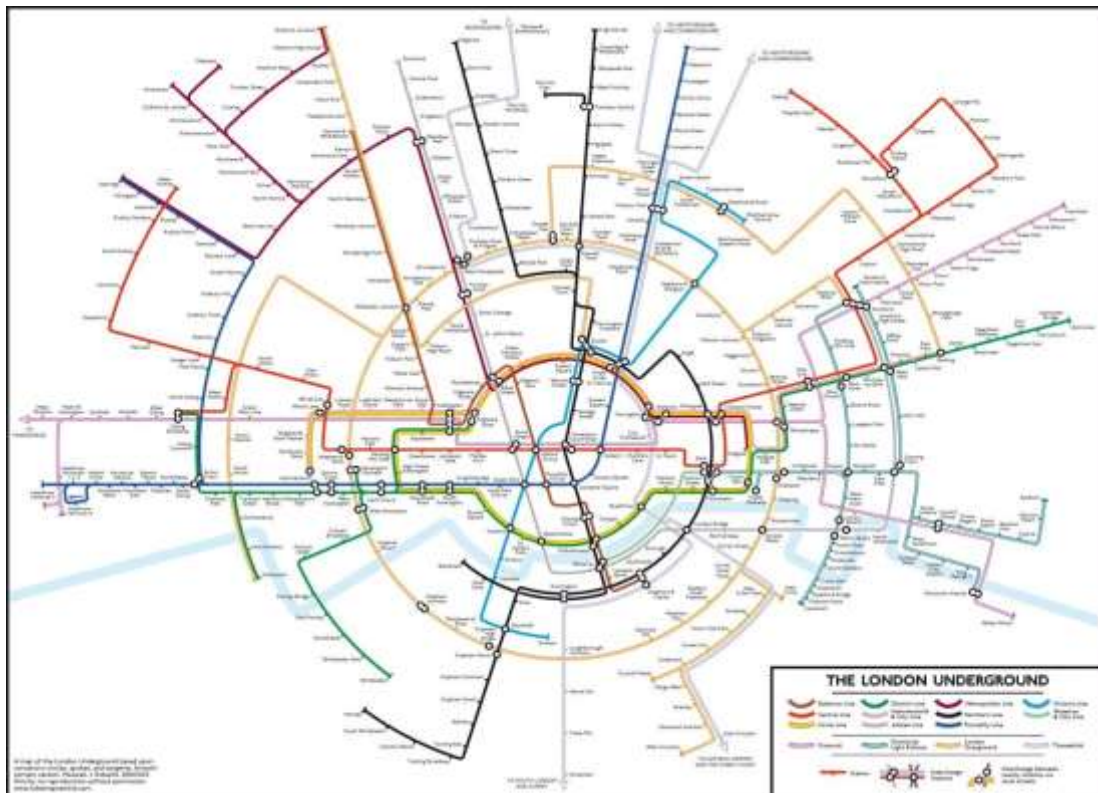


**Image 11 - The city of Mecca also shows, in the vicinity of the Kaaba, a disposition with radio centric tendencies**



**Image 12 - This design is directly inspired by the Islamic rituals during which believers pray in the direction of the Kaaba and walk around the black stone**

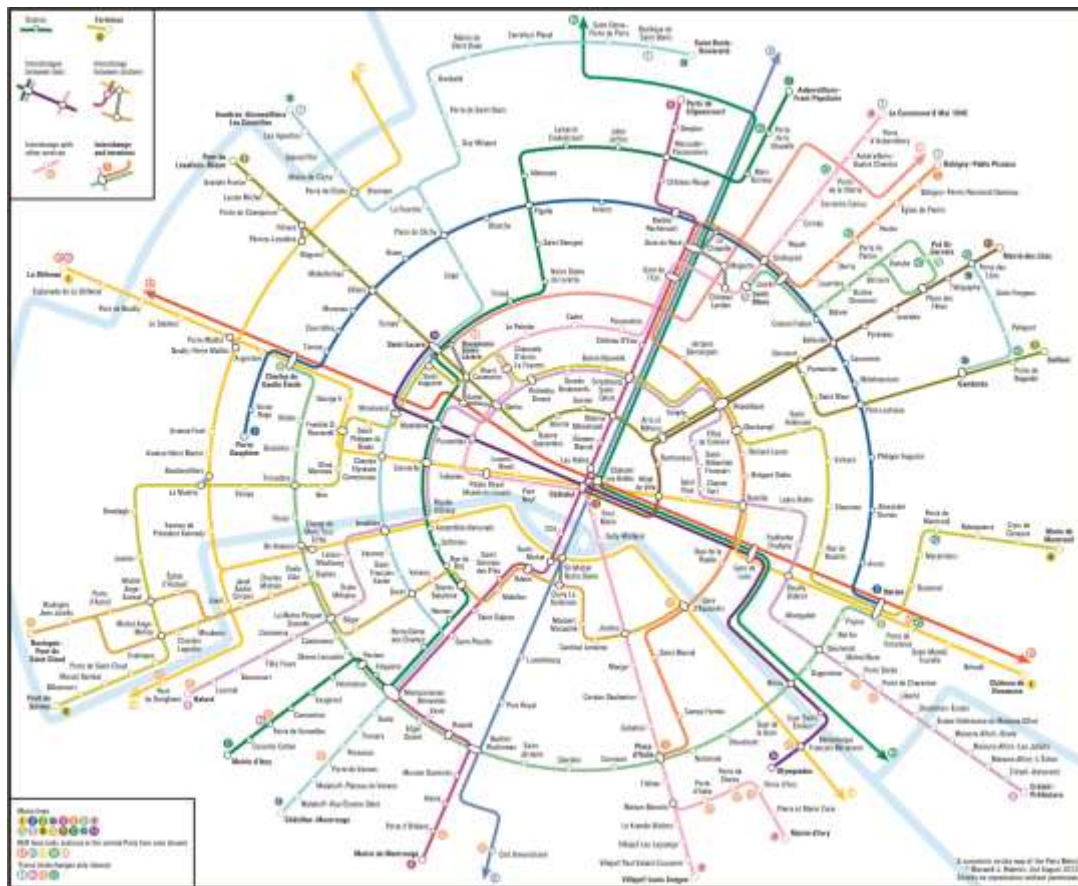
We also find that even when cities' layouts aren't visibly radio centric, their transportation systems, in this case the underground transport systems, can be represented in a radio centric way with stunning ease without it being necessary to distort their main characteristics:



**Image 13 - The London Underground represented in a radio centric form (Tube Map Central, 2017)**



Image 14 - The New York Subway represented in radio centric form (Tube Map Central, 2017)



**Image 15 - The Paris Metro represented in a radio centric form (Tube Map Central, 2017)**

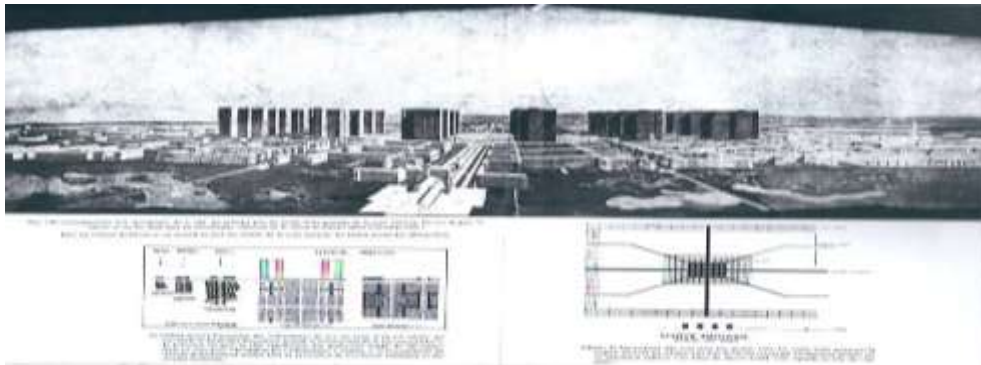
The representation of transportation system in a Radio Centric manner is quite important as it also demonstrates what the planners behind the transportation system see as the actual centre. The centre of a city can indeed, and does often, change, as do the secondary, tertiary, etc., centres also change. This is important because in response to the Sliding Puzzle Model (which we look at in depth later in this study) one might say that attempting to build housing in the centre as opposed to the periphery is an arbitrary and perhaps futile endeavour as the centre of a city is wherever we chose or declare it to be. This is not incorrect, though as we can easily see, there are so many factors of cities as they are at the present that indicate and are built around the centre relative to where it presently is, that if one were to try and shift its centre elsewhere then one would have to change all those factors too, in this case, how the transportation systems are built. This would often imply such a huge shift, disruption and investment that the Sliding Puzzle Model, in allowing for the incremental building of more housing near the centre, represents the best prospect for sustainable and positive transformation of existing city centres in the face of inevitable challenges (such as fast-paced urbanisation), certainly more so than any radical shifts to the position of city centres.

### **2.5.3 Athens Charter, Le Corbusier and the Exacerbated Zoning**

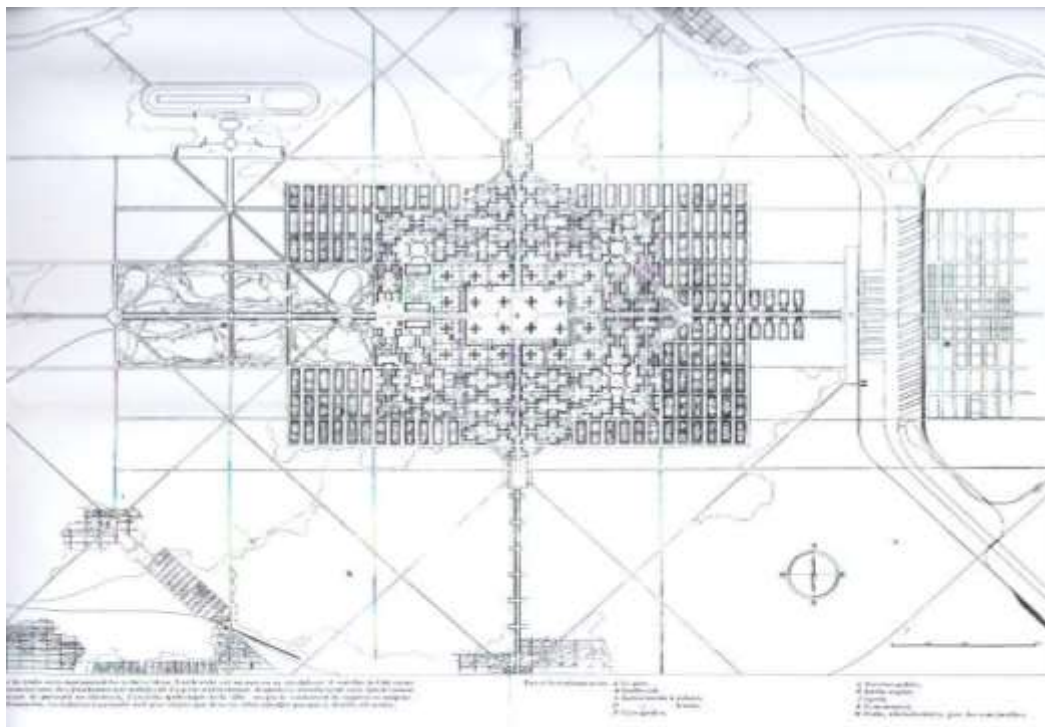
Regarding the evolution of Zoning Practices, Lewyn argues:

“For most of the twentieth century, American land use regulations sought to segregate land uses and to reduce population density, while American parking and street design regulations sought to facilitate driving by mandating wide

streets and forcing landlords and businesses to build parking lots for their tenants and customers. These policies have combined to create a pattern of land use often described as "sprawl": low-density, automobile-oriented development. Where "single-use zoning" separates housing from commerce, and residential zones cover large amounts of thinly populated land, few people live within walking distance of commercial zones. Where wide streets speed up motor vehicle traffic, walking is unpleasant and perhaps even dangerous. And where parking lots surround buildings, pedestrians must walk through the parking lot in order to reach those buildings, making pedestrian commutes longer and more unpleasant" (Lewyn, 2006, pp. 257-258).



**Image 16 - A model by Le Corbusier (Le Corbusier, 1925)**



**Image 17 - Le Corbusier's ideal cities are characterized by an exacerbated, even exaggerated zoning, where land uses are rigid and highly segregated (Le Corbusier, 1925)**

But we can go even further than Lewyn- and say that the modernist view of the city is somewhat materialistic and considerably reductionist, wherein the city becomes an object to be shaped by calculated engineering. In contrast, we can say that the city is a stage for life where physical spaces are made up of as much by ethereal connections as they are of material nodes, while they often also serve as places of pilgrimage,

socialization, and perhaps most importantly, cultural interactions the dynamics of which are hard to encapsulate using linear, simplistic compartmentalization. The vision of modernist urbanism is summarized by Harvey, quoted by Lippolis as follows:

Modernism had lost any aspect of social criticism. Its pre-political and utopian program, based on the transformation of all social life through the transformation of space, had failed, and modern style had become closely linked to the accumulation of capital in a Fordist modernization project characterized by rationality, functionality and efficiency. (2016, pp. 13)

Lippolis himself concludes:

Capital had decided that the only functions of life to which the urban organization was to respond efficiently were those of production, resting-consumption, inhabiting and circulating rapidly (the four categories of the Athens Charter, formulated by Le Corbusier and others in 1933. (ibid, pp. 14)

#### **2.5.4 Polycentrism and New Urbanism Zoning**

As a response to the exaggerated zoning of modernist urbanism, New Urbanism emerged as an alternative with a new conception of zoning:

Over the past two decades, a group of architects generally known as the "New Urbanist" movement has sought to design more pedestrian-friendly neighborhoods. New Urbanists argue that:

\*Automobile-dependent sprawl reduces individual freedom by immobilizing Americans too young or too old to drive.

\*Sprawling development increases driving, which in turn has led to increased traffic congestion and pollution.

\*Sprawl is ugly, produc[ing] nothing in the public realm worthy of aesthetic contemplation...

\*Pedestrian-friendly communities might improve public health by allowing their residents to get more exercise.

\*Pedestrian-friendly neighborhoods, unlike sprawling subdivisions, foster community by encouraging chance meetings between their residents.

\*Sprawling development consumes more land than more compact development, thus reducing the supply of farmland, open space, and wildlife habitat.

The New Urbanist remedy is to build Traditional Neighborhood Developments (TNDs) -neighborhoods with streets narrow enough for pedestrians to safely cross and with housing within walking distance of schools, workplaces, shops, and other human activities. TNDs often conflict with conventional zoning and street design regulations. While New Urbanists seek to build mixed-use, compact neighborhoods, conventional land use regulation favors single-use, low-density sprawl...

Because existing zoning is so hostile to New Urbanism, New Urbanists have begun to develop alternative zoning codes codifying New Urbanist principles. (Lewyn, 2006, pp. 258-259).

The Philips Center for Health and Well-being  
Insight Series on Livable Cities nr. 1

# A livable and lovable city?\*

*The Philips Livable Cities think tank believes that livable cities are successful cities. They have identified three important and interlinked ingredients of a livable city:*

**Resilience**  
Focuses on adaptability, flexibility and balance. It is about the ability of a city to 'invent' or 're-invent' itself through shocks and stresses, to harmoniously accommodate old and new values, and to adjust the functions and requirements of the city. It illustrates a city's capacity to balance continuity with change, heritage and innovation, natural spaces and the urban environment to the benefit of its inhabitants.

**Inclusiveness**  
Is about creating social integration and cohesion. Inclusive cities are open for participation from the widest range of civil society, irrespective of gender, age, ethnicity, cultural heritage, beliefs, religion and economic status. Inhabitants should have equal opportunities to participate in the activities of a city. Inclusiveness enhances community feelings, the sense of ownership towards the city, the sense of belonging to a place.

**Authenticity**  
Is the ability to maintain the local character of the city, the local heritage, culture and environment. At the same time, a city needs to accommodate social, economic and technological changes – and evolve itself. The evolution needs to be sustainable and match the expectations of the citizens.

\*Livable cities reference based on a concept by Carlo Ratti, Politecnico di Torino, presented at the BNL Bank meeting in Singapore in 2010 (2011)

**Livable cities need environment-friendly solutions with a low ecological and low carbon footprint. They need to consider energy, food, water and materials.**

**An inclusive city can create a sense of pride and belonging. "This is my city" it can make a city lovable as well as livable.**

**In an inclusive city, inhabitants are actively involved from the start of every city initiative. The city is open to political participation from the widest range of civil society.**

**Livable cities need economic stability. They should strive for economic diversity to reduce dependence on one economic model, job creation, as well as entrepreneurship.**

**Resilient cities need economic stability. They should strive for economic diversity to reduce dependence on one economic model, job creation, as well as entrepreneurship.**

**Social cohesion implies that a city is inclusive and breeds cooperation and tolerance between citizens with different values and beliefs.**

**Parks and other forms of natural heritage are important for inclusiveness, as it creates a collective memory. Native species emphasize the unique location of a city. Parks function as resilient lungs of a city – improving the air quality.**

**Everyone in the city is included! has rights, and is entitled to a better life. The elderly, disabled and poor are seen as potentially valuable social capital.**

**Resilient cities realize that they are connected and interdependent within a system of other cities and also with the rural environment surrounding them.**

**The relationship with the surrounding rural area is important for resilience. Food supply and urban agriculture need to be considered.**

**The history of a city makes it authentic. It reflects local culture and local knowledge and reinforces a sense of place and the local identity.**

**Resilient cities realize that they are connected and interdependent within a system of other cities and also with the rural environment surrounding them.**

**The relationship with the surrounding rural area is important for resilience. Food supply and urban agriculture need to be considered.**

**The history of a city makes it authentic. It reflects local culture and local knowledge and reinforces a sense of place and the local identity.**

**Resilient cities realize that they are connected and interdependent within a system of other cities and also with the rural environment surrounding them.**

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**Image 18 - Contemporary utopias sometimes opt for more egalitarian configurations, where zoning aims for a juxtaposition of different uses, phasing out the highly hierarchical, radio centric disposition**



**Image 19 - Urban configurations demonstrating a more polycentric and flexible outline, with less rigid zoning (Simpson, 2015)**

However, the emergence of alternative zoning practices, such as those associated with New Urbanism, has not, at least until now, managed to decisively contribute towards the bridging of the great divide between center and periphery that we find in many cities - on the contrary, the fosset difference between center and periphery not only survived- *in some cases it has tended to deepen further*, partly as a result of the aggressive gentrification of neighborhoods and places where typologies favorable to New Urbanism concepts can be applied or *where the original construction already demonstrates the characteristics that New Urbanism tries to resurrect*. The city of Lisbon is a particularly paradigmatic example of the contrast between an eminently Corbusian periphery and a center that we can classify as classical and historical, characterized by the more “human” scale that New Urbanism tries to apply - these characteristics are highly desirable not only for the upper middle classes and the national petty bourgeoisie, but increasingly, for young professionals around the world looking for a so-called "genuine" urban experience (regarding the concept of “genuine” and its relation to gentrification, see Brown-Saracino, 2010, Semi, 2011, Slater, 2011, and Zukin, 2011). However, the Lisbon periphery is still marked by socioeconomic deficiencies, spatial segregation, incidents of police violence, poverty and marginalization- a Eurostat study of 2011 drew up a ranking of 20 European cities, classifying the cities according to their inhabitants' perception of the presence of poverty in their city – Lisbon appears in the podium, tied in third place with Budapest, surpassed only by Riga in Latvia and Miskolc in Hungary. 91% of Lisbon’s inhabitants say there is a problem of poverty in the city (Business Insider, 2011). At the same time, Lisbon was being referred to in mainstream publications as "the new capital of cool" (Guardian, 2016).

The *touristification* and gentrification of the city of Lisbon has not only entered into the collective consciousness of Lisbon's inhabitants, it is now a subject of national and international concern and attention. Several conferences around the subject have been organized, such as the Lisbon Architecture Triennale of June 2016, which spoke of the urgent need to "stop the bleeding" (of residents from the city centre), an event during which residents expressed concerns, experiences and frustrations, while words such as "expropriation" and "occupation" were mentioned in reference to possible responses to gentrification and rising housing prices (Observador, 2016). Petitions have gathered hundreds of signatures demanding a "Clamp Down on Local Accommodation". Several collectives dealing with issues of housing have arisen or resurfaced, such as the *Lisbon Solidarity Network*, the *Living in Lisbon* group and *Habita*. Lisbon's touristification and gentrification are the subject of reports and opinion pieces from some of the world's best-known publications, wondering whether urban rehabilitation projects will negatively affect the poor (Guardian, 2016), as well as reporting on the rise of evictions (Guardian, 2016b). We can also find reports on how a tourist stay in Lisbon caused the founder of an innovation and technology centers company, *Second Home*, to open a branch in Lisbon (Business Insider, 2016), with some predicting that Lisbon will become a global center of creativity and innovation (Business of Fashion, 2016). Media reports abound regarding how Lisbon has become one of the most coveted art centers (Artnet News, 2017) while others praise its nightlife (City Metric, 2016).

In short, over the last years, touristification, gentrification and the subsequent housing shortages in central areas has become the object of growing academic and civic interest, and has been widely reported on in national and international media. It has also become one of the preferred arenas for social movements looking to gain traction, who identify anxiety and difficulties around issues of housing as one of the more likely sources of public mobilization. The touristification and gentrification of the center of Lisbon has made considerations about some of the harmful dynamics of gentrification and the effects of the housing crisis transcend the abstract sphere and become real, tangible. Housing is today a considerable source of popular dissatisfaction and unrest, and this also means that urbanism has an unquestionably growing political potential.

However, few authors have tried to analyze the extent to which the polarization between the center and the periphery of Lisbon will be affected by the phenomenon of touristification and gentrification, and whether it will be exacerbated or mitigated by the new financial and demographic dynamics it is generating, and above all, the extent to which the so-called 'hotel monoculture' that has been promoted by the Lisbon Municipality will not reduce Lisbon's polycentrism and the tendentially mixed-use layout of its city center, one of the city's greatest attributes.

Let us see, then, what clues Lisbon's recent history offers us in order to better understand its present situation.

### **2.5.5 Zoning in Lisbon - 20th Century**

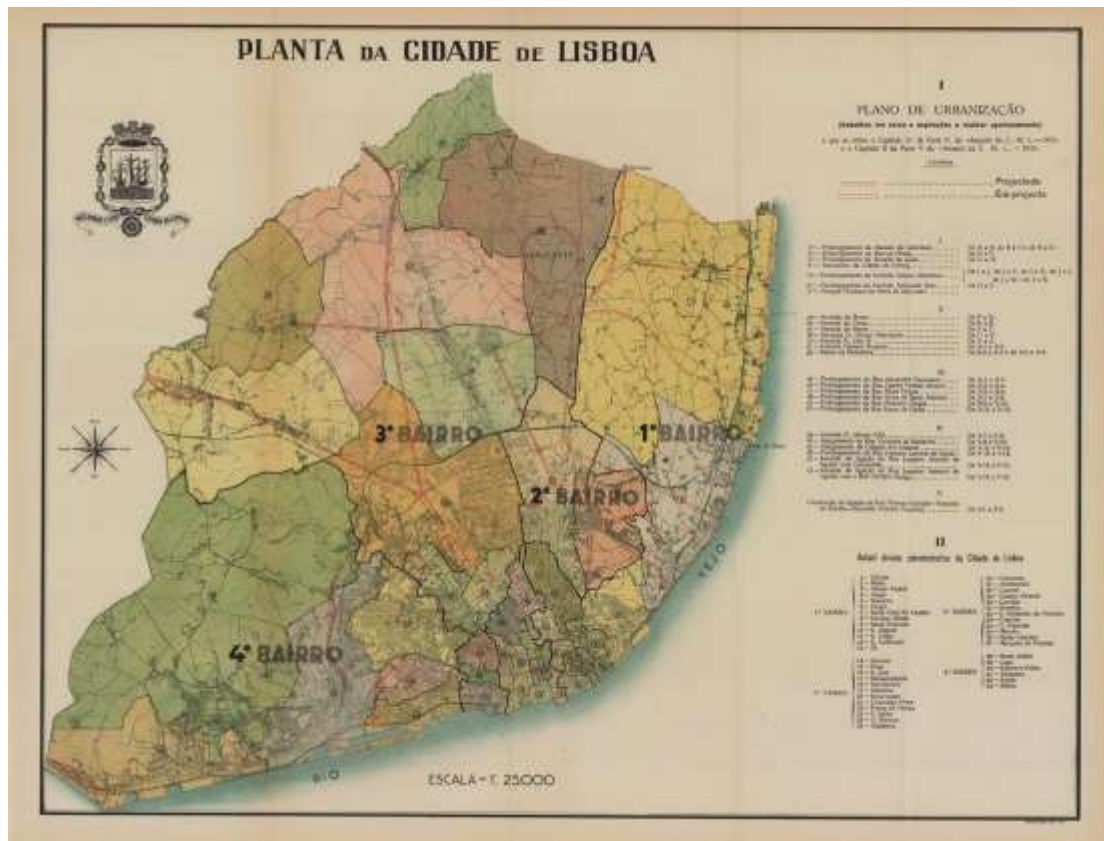
The Lisbon Council was managed by administrative commissions between 1901 and 1903, and likewise in 1907. It was in November 1908 that the Council had its first Republican Municipal government, two years after the monarchy was overthrown. A new administrative code was implemented in 1913, which fixed the number of city councillors to fifty-four, who then comprised the *Senate of the House*, elected through direct and universal suffrage (CML, 1997).

In 1916, through Law no. 621, the ecclesiastical and civil parishes were separated, producing the Parishes that continue to this day (Universidade Lusíada, 2009, pp. 4).

In 1918 there was heightened tension between the central and local government, with President Sidónio Pais dissolving the Lisbon City Council, accusing it of having conspired against the central government, and following up by appointing an administrative commission, with another being named in 1926. The period between 1926 and 1932 was characterized by a generalized negligence towards local government, with "the government being limited to dealing with the establishment of an urbanization plan for the city of Lisbon, trying to solve the housing crisis as well as establishing a fundamental road network" (Silva, 1994, p. 9). In this period the Council gave particular emphasis to private investment as an engine for urbanization, due in part to its lack of financial capacity (Silva, 1994). A new Administrative Code was published in 1940, and the Council president was appointed by the central government (CML, 1997).



Image 20 - Location of Lisbon's Municipal Services, 1935



**Image 21 - Lisbon's Plan of Urbanization, 1935**

In order for the preliminary studies of the Lisbon Master Plan to be undertaken, J.C. Forrestier's experience was called upon - he was a landscape architect, and the Council was indeed very much preoccupied with improving Lisbon's landscape and overall aesthetic appeal. This collaboration, however, also resulted in other important contributions, perhaps the most important of which was a basic road network, *which laid the foundations of the radio centric nature that was to be imprinted on the city in the future* (Silva, 1994).

This period in Lisbon's history was marked by rapid, anarchic, disperse and territorially inconsistent urbanization with large amounts of informal housing being built as a result of rural immigration, especially after the 1930s. This type of urbanization was also spurred by the introduction of new means of transport, i.e., suburban railways and roads, along with higher rates, though not significantly, of access to automobile ownership and use, which facilitated the transit between the suburbs of Lisbon and central places of work, favoring the growth of peripheral or suburban neighbourhoods. The areas that were better serviced by these novel means of transport naturally saw a higher population growth, as was the case of Almada, Barreiro, Cascais and Oeiras, with Loures, Sintra and Vila Franca de Xira having lower rates of growth (Silva, 1994). A greater need to coordinate the management of urban planning led to the establishment of "bases for the technical and financial collaboration between the State and local authorities" in September of 1932 (Silva, 1994, pp. 12). Infrastructural and economic development were the main drivers of urban planning at this time; "in short, the new urban policy consisted of creating the basic infrastructure that would have allowed for the expansion of the internal market" (Silva, 1994, pp. 13).

Urbanization and urban planning became increasingly important for the Council at this time. This increased emphasis resulted in the Government replacing the regime for the approval of plans and constructions, which dated back to 1864, in 1934, with the new regime having been jointly drafted by Duarte Pacheco and Alfred Agache, the latter having presented the document titled "*Modèle de lois, règlements, et servitudes*" to the former (Silva, 1994, p. 14). The first factor of note in the general urbanization plan was the fact that it was not conceived as a regulatory instrument, that is, it did not link the licensing of private construction projects to the provisions of the plan (Silva, 1994, p. 14). In this context, it is important to emphasize the importance of the use of land resources in urban areas within the urbanization plan.

In 1938, a new Administrative Code came into force, under the administration of the first Council that was formed since 1926, this time presided by Duarte Pacheco himself. In 1938, the general process of urbanization was the exclusive responsibility of the Council (Silva, 1994). In turn, and in order to deal with this area of activity, the Council's technical staff increased significantly from 1939 onwards. But the Council did not have the capacity to carry out all the construction work that was needed, and by this time began to promote private construction projects as an alternative to the building exclusivity with which Duarte Pacheco had endowed the Council- private initiatives were, however, still regulated by Council's plans and licensing powers (Silva, 1994).

The fiscal consolidation policies of 1948 led to a change in the urban development strategy, leading the Lisbon Council to "concentrate its financial resources and technical capacities on the completion of the works already begun and / or foreseen in the 1947 Plan, before beginning new undertakings" (Silva, 1994, pp. 17). The scarcity of funds also caused the Council's most qualified cadres to leave, seeking higher remuneration.

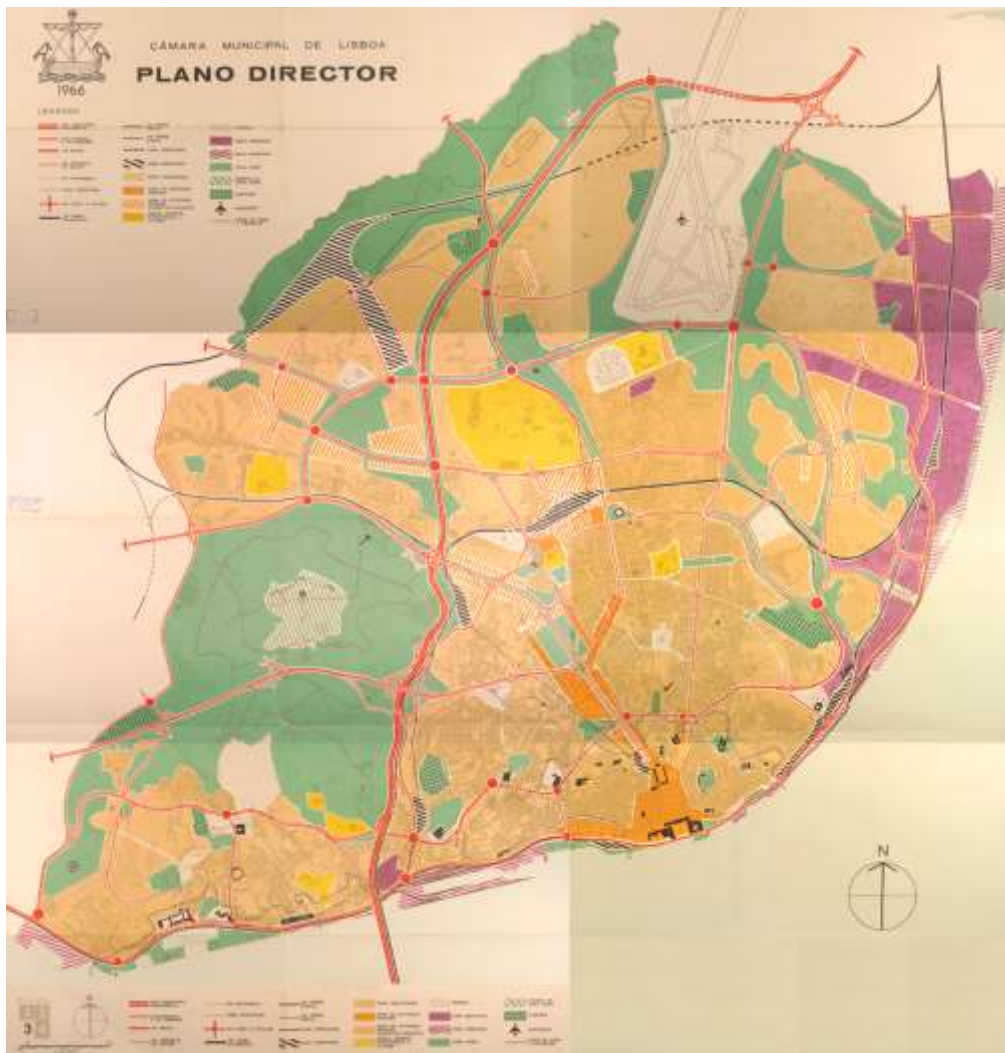
By the time the Municipal Master Plan of 1948 was drafted, the prevailing planning tendencies of the time started to manifest ever more clearly, that is, by virtue of the implementation of rigid zoning, promoting social segregation, *and the imprinting of a radio centric structure*, whilst also giving greater emphasis on the development of the systems of transportation and commuting. This particular plan was deeply influenced by E. de Groer (Silva, 1994).



Image 22 - Lisbon's Municipal Master Plan, 1948 (CML, 2012a)

The effectiveness of this plan, particularly in its ability to solve the housing crisis, was somewhat limited by Law 2030, which removed the municipality's urban strategy responsibilities, which led to an increase in precarious housing (Silva, 1994). This factor was compounded by the rural inflows of the 1960s, a rise in the cost of labor and subsequently a rise in the overall cost of construction, adding to the rising costs of the colonial "Overseas War" (*Guerra do Ultramar*). All of these factors reduced the Lisbon Council's investment capacity and aggravated the housing crisis. It was this crisis that França Borges, who chaired the Council from 1959 to 1969, had the intention to solve, which ultimately resulted in an even greater reliance on private housing construction (Silva, 1994).

In 1966, the bridge over the Tagus river was inaugurated, and in 1967, the Council published the the Lisbon Master Plan of Urbanization, completed in 1966. Its publication meant that other previously realized studies had to be revised, which in turn significantly slowed down the urbanization process. Silva (1994) mentions that "this plan replicated the rigidity that was found in equivalent international plans, which in turn made it a somewhat inappropriate plan for Lisbon's particular needs". This plan, among other aspects, "proposed a decentralized urban structure in hierarchically integrated planning units, and yet however, failed to take into account the effective, real development capacity of the Lisbon Council, which was largely transcended by those of private construction agents..." (Silva, 1994, pp. 27-29).



**Image 23 - Lisbon's Urbanization Master Plan of 1966, published in 1967, by Meyer-Heine (CML, 2012a)**

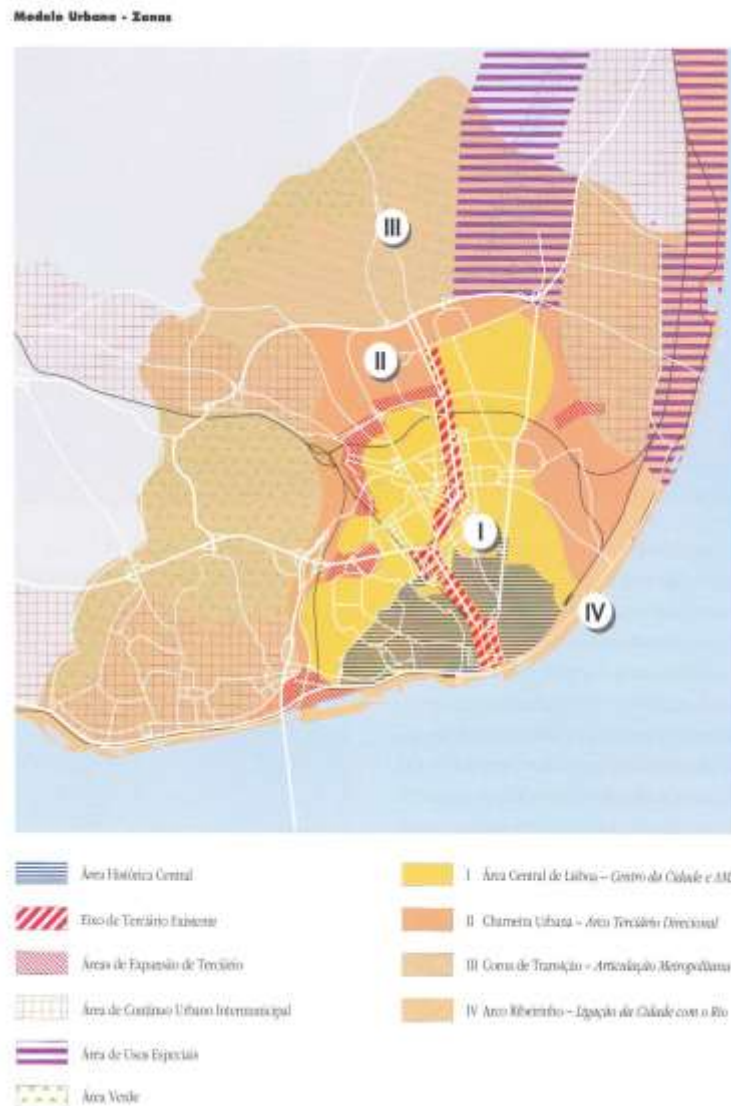
### **2.5.6 Zoning in Lisbon - The April Revolution**

The April revolution resulted in an increase in the government's willingness to allow for greater municipal independence. Among other measures, elections with universal suffrage were introduced. Voters voted on lists of competitors, electing sixteen councillors, the most voted of which takes the presidency. As for its organization, the City Council was an executive body while the Municipal Assembly was deliberative (CML, 1997).

The constitution of 1976 considerably changed the Local Administration's organization by granting municipalities and parishes greater autonomy. This process "was not only a decentralization of administration, but an expression of the political power associated with the idea of a local democracy, insofar as the municipalities have their own democratically elected bodies" (Universidade Lusíada, 2009, p. 5). With the constitution of 1976, municipalities' dependency on the central State was diminished, with the establishment of three categories of local government: administrative regions, municipalities and parishes. In this model, the parishes are not a direct part of the municipality, having an independent character, being represented only in the municipalities by the presidents of the Parish Council in the Municipal Assemblies. The

constitution stipulates in paragraph 1 of Article 6 that "The State is unitary and respects in its organization and operation the autonomous regional regime and the principles of subsidiarity, the autonomy of local authorities and the democratic decentralization of public administration" (Constitution of the Republic, 2005, pp. 2).

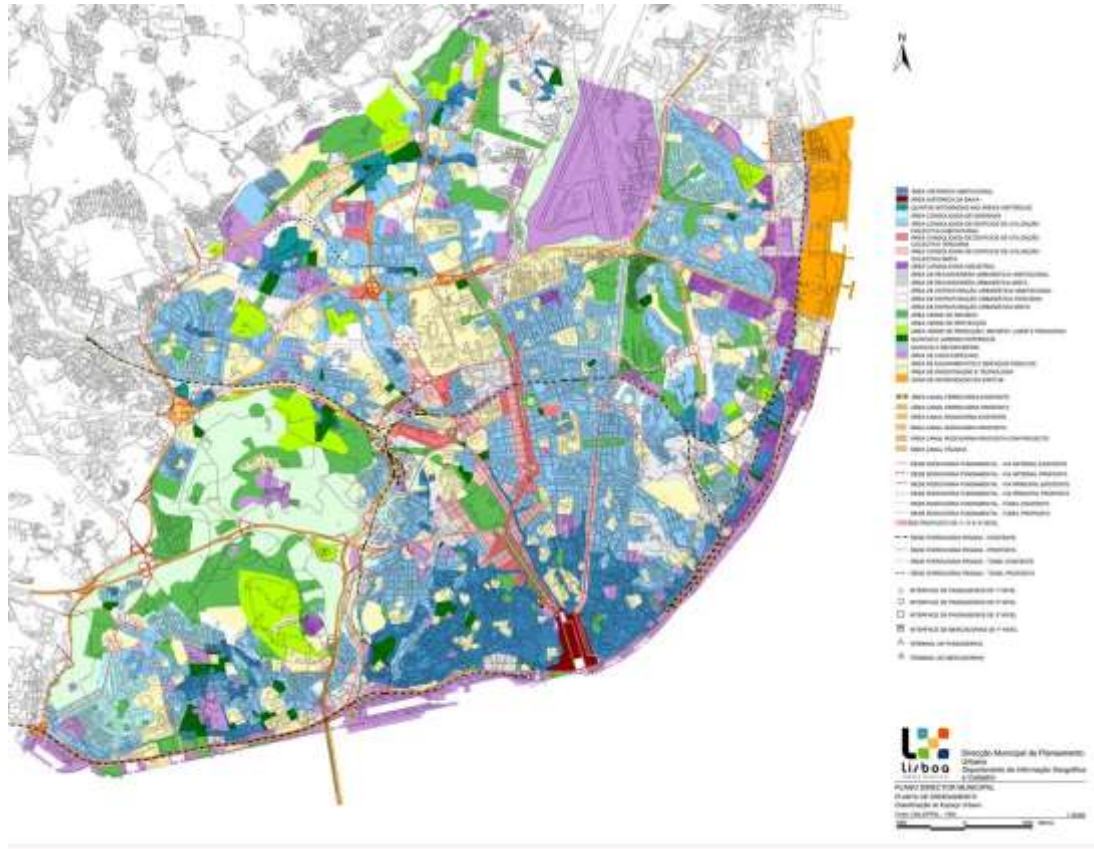
In 1992, the Lisbon Strategic Plan was published, and its main aim was to establish a plan for the capital's economic development. Its main component was a plan to revitalize a particularly blighted section of the Northeast riverside, taking advantage of the redevelopment opportunities made possible by the 1998 Lisbon World Exposition (CML, 2012a).



**Image 24 - The Lisbon Strategic Plan of 1992, depicting Lisbon divided into strategic areas (CM Lisbon, 2012a)**

The 1994 Municipal Master Plan established that the Urbanization Plans and Detail Plans should be drawn up in parallel with the Municipal Master Plan. It also established different categories of urban spaces, and produced the *Letters of Heritage and the Environment* as well as establishing the regulations related to *Municipal Territorial Planning*. However, it did not solve the fracture between the center and the

*periphery of Lisbon*, neither did it sufficiently address the need to revitalize the center, nor the housing crisis (CML, 2012a).



**Image 25 - Lisbon’s 1994 Municipal Master Plan (CML, 2012b)**

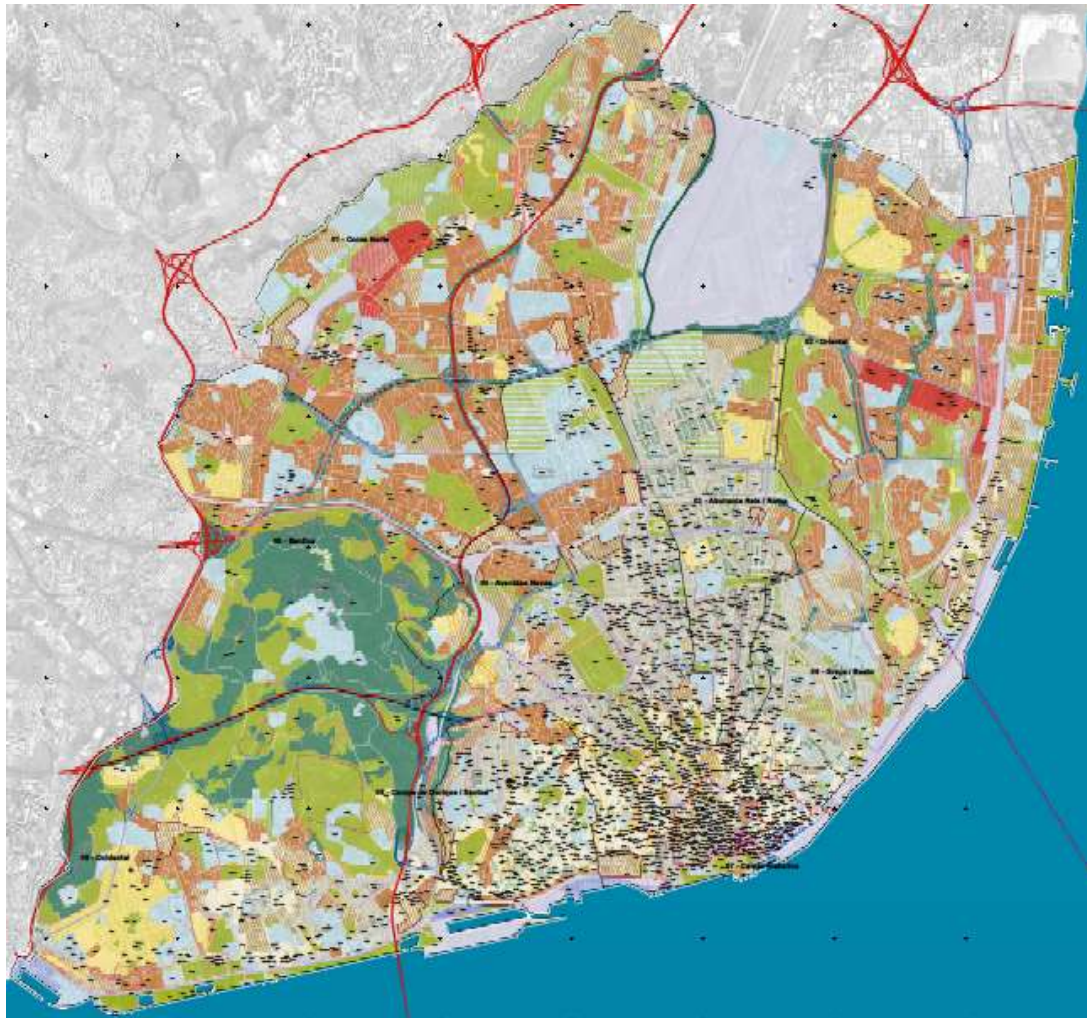


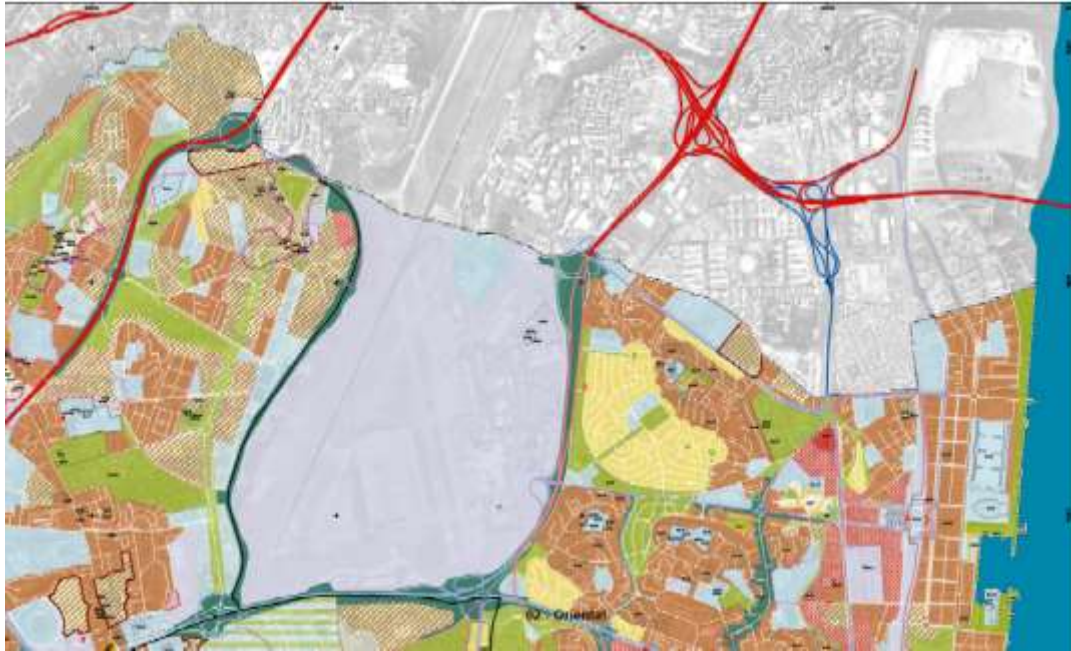
Image 26 - Lisbon's 2011 Municipal Master Plan (CML, 2011a)



Image 27 - Lisbon's 2011 Municipal Master Plan, key (CML, 2011a)

Lisbon's 2011 Municipal Master Plan demonstrates the extent to which the substantial divide between Lisbon's periphery and center continued. Lisbon's center is dense, consolidated and continuous, characterized by its mixed-use and built at a smaller scale, with small parks never too far away from classic, "popular" neighbourhoods which have their own cultural and commercial hubs; this configuration extends somewhat timidly by the riverside. However, this typology ceases abruptly at the borders marked firstly by the Monsanto park and the train line, both of which form the barrier that separates the centre from the primary periphery, and then by a second barrier, the secondary circular highway (the *segunda circular*), beyond which is the secondary periphery. These barriers scar Lisbon's territory and represent urban moats that profoundly mark the city's layout, preventing it from developing in a cohesive and socially equitable way. Beyond these barriers one will find extensive housing areas with little commercial areas, even fewer cultural hubs and very little in way of urban variety.

And yet Lisbon is now faced with another daunting prospect, which is the considerable reduction of the demographic and socio-economic variety of its city center due to the influx of tourists, the proliferation of hotels, and perhaps most importantly, the transformation of private housing into informal tourist accommodation (for example, via digital platforms such as Airbnb...) While Lisbon, if anything, *should seek to expand its city center's variety progressively to the peripheries, it is now faced with the possibility of the inverse happening- the periphery's lack of variety expanding inwards*. Much like the zoning in Lisbon's 1967 Master Plan, which adopts rigid segregation of land use, and even to some degree, *excessive mono-functionality*, the city centre risks becoming increasingly dedicated to a sole purpose, in this case- *tourism*. The proliferation of hotels as well as the new phenomenon of local accommodation pose a threat to some of the more remarkable positive characteristics of Lisbon's city center; concepts such as polycentrism and the introduction of zoning policies that promote mixed-use zones are now central concepts of urbanism that gather a considerable degree of consensus- the Lisbon council however seems to be using its capacity to influence Lisbon's landscape, which itself has already been somewhat limited by the private sector's dominant position in urban development as well as the public debt crisis, to do, or at least allow for, the exact opposite to take place.



**Image 28 - Lisbon's 2011 Municipal Master Plan, detail (CML, 2011a)**



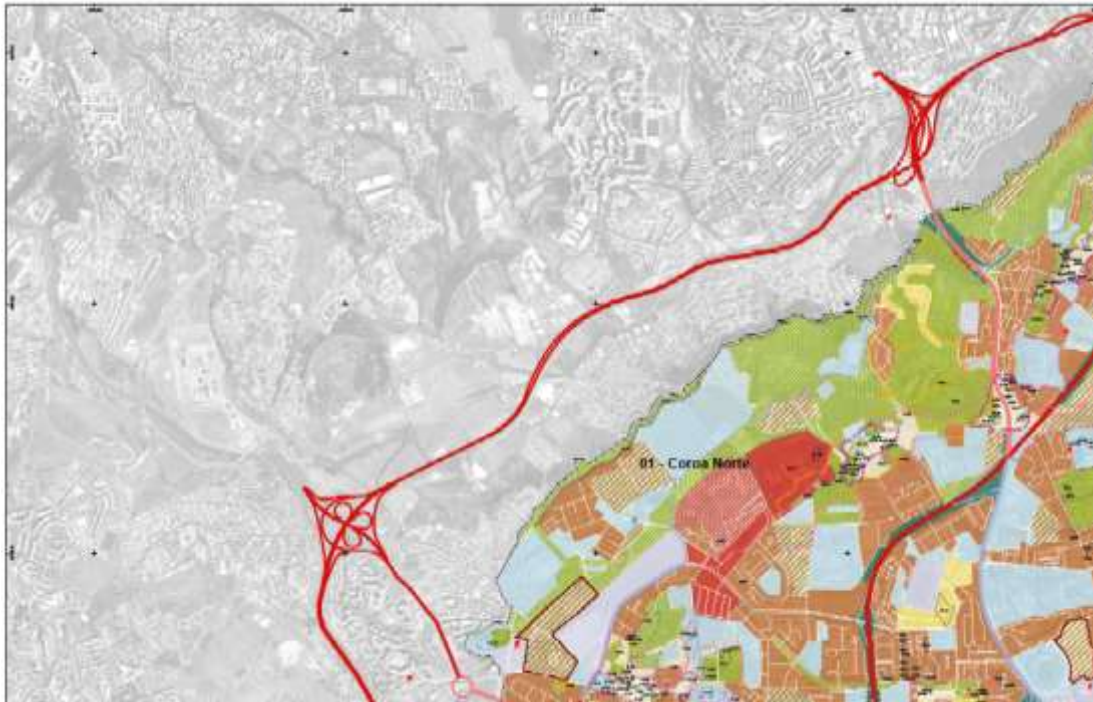
**Image 29 - Lisbon's 2011 Municipal Master Plan, detail (CML, 2011)**



**Image 30 - Lisbon's 2011 Municipal Master Plan, detail (CML, 2011a)**



**Image 31 - Lisbon's 2011 Municipal Master Plan, detail (CML, 2011)**



**Image 32 - Lisbon's 2011 Municipal Master Plan, detail (CML, 2011)**



**Image 33 - Lisbon's 2011 Municipal Master Plan, detail (CML, 2011)**

### **2.5.7 Between Corbusian Zoning and the New Urbanism Zoning - A Synthesis**

When it comes to zoning and land use policies, there seems to be a growing consensus for the need for equilibrium, namely, equilibrium between overly stringent policies, and overly lax ones:

“According to the UN-Habitat (2015), the lack of land policies and clear regulations can lead to uncoordinated city growth and the increase of illegal/irregular and informal settlements, while excessive regulations (such as strict zoning) can lead

to division of urban land-use into exclusive residential, commercial, or industrial areas, which may result in urban sprawl and low density urban expansion. In both cases, urban land regulations can inhibit the development of smart cities” (Zekovic et al, 2015, pp. 69).

We can attempt to synthesize the qualities of polycentric, continuous urban fabrics, unscarred by barriers such as highways and train tracks, with highly hierarchical, segmented urban dispositions. Let us first however consider one of the main benefits of the polycentric arrangement, which is that it provides an urban backdrop that promotes socio-economic equity, in particular in contexts characterized by rapid urbanization, the growth of suburbs, the proliferation of informal housing or even the appearance or expansion of slums. In these scenarios, a lack of polycentrism will tend to produce highly segregated, unequal cities with profound socio-economic inequality, and potentially, higher rates of crime, deep social divisions along with a plethora of political problems. Through the promotion of polycentrism the urban planner can hope to multiply and disperse, on a metropolitan scale, cultural, economic and commercial hubs, whilst reducing the probability of generating vast areas of impoverished, geographically secluded and socially marginal neighbourhoods. But polycentrism has its own particular limitations; attempts to promote polycentrism in an inorganic, forced manner, solely through the tools provided by municipal urban planning, *by municipal decree*, if you will, can fail spectacularly, as we have seen in the construction of satellite cities in Cairo. Equally, a polycentric city may lose its sense of hierarchy of space and place- an overly diffuse outlay can also reduce the appeal of places of social convergence. It is perhaps more sensible to attempt to develop identifiable gaps between already identifiable hubs. A more fractal design could be the solution to attempt to combat an inconsistent urban fabric in order to mitigate social inequality. The fractal design synthesizes the importance of hierarchy between spaces, the continuity and the need for multiplicity, harmony and balance.

Ne.lo (1996, 2001), quoted by Seixas, recalls:

Today's European city is, from the administrative point of view, a crushed, opaque and conflicted space (...) the evidence of how the administrative fragmentation of the territory accompanies and favors social divisions could grow further: The problems that such fragmentation for urban planning are maximised by the difficulties it poses for the practice of distributive social policies in this same urban space, along with the dynamics necessary for local policies, etc. Functional specialization, social segregation and fragmented administrative forces mutually feed each other in a manner that raise and strengthen a maze of dead-ends in a city with no end in sight" (because of its seemingly unending sprawl). (2013, pp. 82)

Seixas also argues:

For now, the awareness of social and spatial fragmentation, amplified by the mediatization of crime and urban problems (even when the data shows that they do not increase), has provoked a socially constructed urban agoraphobia (Indovina, 2001), a feeling of estrangement from public spaces that Davis also referred to in his reflection on the 'ecology of fear' (1999). (2013, pp. 95)

Seixas, further points out that the way cities are planned, particularly in zoning policies, is obsolete:

(...) with rare exceptions, we continue to administer, regulate and design the urban territory by means of models still strongly based on almost exclusively morphofunctional logics (...), delimitation of land uses and regulation of functionalities by paradigmatically outdated notions. (2013, pp. 160)

Ascher makes more specific accusations regarding the failures of modern zoning thus:

Modern urbanism (the very word "urbanism" appears in different forms from the turn of the nineteenth century to the twentieth century) applies within the framework of the organization of cities the principles that have been established in industry. The key notion is specialization: Taylorism will systematize industry where it will attempt to decompose and simplify tasks so as to improve performance. Modern urbanism has applied it from the late nineteenth century onwards through zoning, which later Le Corbusier and the Charter of Athens took to an excessive scale. (2001, pp. 28)

Ascher (2001, pp. 29) also states that the proliferation of technology means that each home can be equipped with key appliances, and that furthermore, the elevated capacity for commuting and transport that provides urban dwellers with the opportunity to live far from their workplaces, and "that the mono-functional neighbourhoods in urban peripheries are a reflection of this". However the dysfunctionalities that this mono-functionality generates, especially as these urban divisions promote the solidification of extreme divisions between social classes, has made modern urbanism almost consensually accept the need to implement greater multi-functionality and mixed-use for urban territories. It remains necessary to formalize alternative methods for a more harmonious multi-functionality as well as efficient ways to make the urban layout tend towards that direction, instead of the opposite. Finally Ascher (2001, pp. 30) diagnoses what he sees as "a Fordo-Keynesian-Corbusian urbanism - an expression of a simplifying rationality with its urban planning, mono-functional zoning, hierarchical urban structures, adapted to mass production and consumption, with its commercial centers, industrial zones and circulations as well as an implementation of the welfare state with its collective facilities, public services and social housing".

### **2.5.8 Modern Urban Utopian Visions**

Although authors like Kuldova and Varghese (2017) point to the inherently elitist nature of contemporary Indian utopian urban visions, we must all the while notice the forward-looking nature of India's new found fascination with the city and city life, no matter how ethically questionable one may argue they may be: For most of its independent national history, India has envisioned itself as the nation of villages.; these villages were conceived of as the heart and soul of the nation, as the very essence of India and of its authentic 'Indianness' and as a source of cultural pride... The village was the national utopia. Even in academic writing, until the 1980s, the 'urban' was more or less a marginalized category of analysis in India... But it was when the first National Commission on Urbanization was constituted in 1985, that urbanity was slowly becoming a topic in regional academia. Today, the village is still idealized and romanticized, along with the Gandhian narrative, in particular by the middle classes and elites, as a space of transition and rich cultural heritage, and yet, it is considered as backward, as the very opposite of contemporary modern and urban India; in the imagination, it is thus firmly positioned within the past of the nation and has no place in the present or in the utopian future... at the same time as the cultural heritage and

traditions are being commodified for the consumption of the select few, often with added ‘ethical value’... the future is envisioned as purely urban and exclusive” (Kuldova and Varghese, 2017, pp. 1-2).

Compare this to, for example, the kind of anarcho-primitivist visions that are so ubiquitous in western culture, as is discussed in the *Beyond Self-Hating Urbanism* publication (Silva Jordão, 2018a), and one might even wonder whether Western culture still is the dominant purveyor of futurist utopian urban visions.

### **2.5.9 Improving Verticality – Vertical Public Space and Accessibility**

Our public space tends to be two dimensional and is usually found at ground level. Vertical space tends to be vertical, so for example if one is walking around at a Central Business District, one can move around horizontally, but can only enter most buildings if one has any business there, i.e., its access is highly conditioned. So the key to achieving convex cities would be to have vertical public space, whereby accessible spaces are not only found at ground level, but rather when one can enjoy all the space, whether horizontal or vertical, thoroughly. This would be nearer to a prime usage of space, whereby space becomes more concentrated and readily accessible, instead of the dominant model of present which generates horizontal sprawl- sprawl is inevitable, it is only a matter of reducing it, and reducing it means spreading it out across horizontal and vertical dimensions.

There are some paradigmatic examples, though they are few and far between. In London, whereas going to the top of the Shard costs around 27 pounds, while going atop the Walkie Talkie Sky Garden requires a reservation in advance, a freely accessible “sky garden” at Fen Court marks what could be one of the first notorious public spaces atop a sky-scraper (Guardian, 2019).



**Image 34 - The Fen Court rooftop with the "Walkie Talkie" skyscraper in the background (The Guardianm 2019)**

In Lisbon, the “*miradouros*”, or ‘golden view’ are an integral part of the city’s cultural life, they are public spaces in which all sectors of society congregate t chat, drink, smoke and listen to music, and usually come in the form of small parks atop of one of Lisbon’s many hills- though even these don’t seem to be safe from the onslaught of privatization. In late 2018 the ‘Adamastor’ or *Miradouro de Santa-Catarina* was closed off and fears that it could be privatized quickly surfaced as the municipality announced radical measures in order to stop what they saw as recurrent problems of vandalism, drug traffic and vagrancy. So not only are these public spaces not free from privatization, the *miradouros* are the kind of access to verticality which is only available to cities with hills, which is not always the case.

But promoting vertical public space is not only about being able to access nice views- it is about shaping the very form of the city and making it more efficient, compact and just. While we can criticize urban sprawl and propose ways with which to reduce or mitigate it, **it would be perhaps more rational to say that in the age of urbanization, it is unrealistic to stop or reduce urban sprawl; rather, what we can do is redirect urban sprawl that is usually horizontal *upwards*, or if you prefer, *vertically*.**

### 2.5.10 Radio Centric Utopias and Insurmountable Moats

Utopias and Dystopias have a tangible effect on the way we plan and see cities. Utopias can be a positive driving force, but can also have negative effects on city planning and theoretical urbanism. Highly hierarchical and segregated planning practices that promote social inequity simultaneously occupy the ethereal space of utopian urban projections, but they also permeate present urban realities- *in the case of Lisbon, the transition between the former and the latter has been made possible through the application of successive Municipal Master Plans.*

The urbanistic, and even *philosophical* insight to be found herein is that *as a result of actually managing to transform cities in line with our utopian visions, it is possible to actively achieve the opposite of its intended effect, thus moving our urban reality closer to what some might view as a dystopia.* We are faced with the very real possibility of using urbanism as a supporting ideological and practical mega-structure through which mankind may end up constructing real life dystopias. Furthermore, these dystopias may even lack the aesthetic quality of cautionary works of science fiction while perhaps matching their horrors, adding insult to injury.

Works of fiction have always played a part in shaping our vision of the city. However the rise of alternative media and the youth's growing discontent with modern living and their own place in the world has reinvigorated direct and indirect, conscious and subconscious, interactions with urban theory, *often leading to dreams of a more egalitarian, healthy and spiritual life away from the city.* We can term this trend *resurgent anarcho-primitivism.* Many propose that a positive future within the urban environment can only be conceived by radically changing not only urban management, but the built environment as a whole, much like *urban utopias of past and present which concentrate on design more than they do on management.* These social dynamics, such as popular images of utopias and dystopias, are all too often ignored by academics who tend to be stuck in their own feedback loops, hence ignoring important ideological tendencies which may undermine their work. It is also possible that if urbanists don't address the manner in which their latent utopian and dystopian visions can help to bring about negative effects, potentially reinforcing popular misconceptions about the nature of cities and fuelling the resurgence of anti-urbanism in both academic circles and popular culture.

In calling this article "Do Urbanists Dream of Radio Centric Cities..." one is of course making a reference to Phillip K. Dick's classic science fiction novel "do androids dream of electric sheep?"- and much like this novel uses robots and artificial intelligence as a point of comparison which ultimately sheds lights on questions about what it means to be human, this article seeks also to continue discussions around what it means to be an urbanist. As urbanists, are we facilitators, or planners? Are technocrats, or democrats?

## **2.6 Local Administration, Housing and the Initial Emergence of the Theoretical Base Foundations of the Sliding Puzzle Model**

### **2.6.1 The Right to the City and Housing– Setting Our Priorities Straight**

Having discussed at length some of the more complex dynamics that the concept of the Right of the City carries and entails, let us now focus on a specific domain-housing. The reason why housing will be the object of further analysis hereby is due to the generalized, relative and virtually global housing crisis that became more and more evident during the writing of this Thesis.

Our understanding of the concept of the Right to the City has, of course, undergone profound changes throughout the last decades. This is normal, possibly desirable, and certainly necessary. But we must first point to a negative transformation that tends to mischaracterize and distort the concept, turning it into the opposite of what was its nature in its inception. This mischaracterization comes from the equivalence that the concept of the Right to the City has come to have with the claim of the Right to Housing. In this sense, many commentators tend not only to equate the two, but they tend, even worse, to argue that the Right to the City is and should be nothing more than the right to have access to decent housing. Making this equivalence opens the way to all kinds of misrepresentations, starting with the idea that the urban dweller has the right to ask for a free house, say, from the Local Administration authority, or that a simple complaint made to the police force should be equated to the right to expect a change in the law. This emphasis on the result and not on the process is precisely the superficial approach, instead of the one we want and need, the radical approach, which the concept of the Right to the City comes to transpose. The Right to the City is not and never was and never should be the right to have a decent house, it is the right to actively participate and have jurisdiction over the processes that make it possible for you to have a house or not. This may seem like a useless, pedantic differentiation, but it is not – if we focus on the inhabitant's right to receive or access a house then we will be reducing Right to the City to the limitations of representative democracy. This in turn will cause the right to the city (in its twisted version) to suffer from the same shortcomings as liberal democracy, and to be therefore equally dismissed as part of the problem, or at least as part of mechanisms that were not even here able to prevent the degradation of democracy during the last decades. Now the Right to the City is simultaneously an appeal to socialization not only of housing, including the right to physically inhabit the centre of the City, instead of being relegated to its periphery, but also the Right to be, ethereally, in the centre of urban decision-making mechanisms.

We cannot, then, running the risk of not only misrepresenting, but also of drastically reducing its usefulness and potential, limit the Right to the City to the right to housing. Our first concern must therefore be to remember and preserve Harvey's (1973, 97-8) assertion that our understanding of the Right to the City "should expand to take into account conflicts over the location of power and authority for making decisions, the distribution of influence, the granting of social status, the institutions built to regulate and control activities... We are looking, to be brief, for a specification of a fair distribution, through fair processes". But we have to go further. Farther away.

The concept of the Right to the City suffers from another danger, eminently modern and particularly characteristic of late capitalism, in addition to the danger of

being diluted by the concepts of liberal representative democracy. We are also in danger of fighting for the introduction, expansion and consolidation of participatory planning models while real power is alienated from the very arenas, we have worked so hard to conquer. The housing area is equally central and paradigmatic in this sense, but in a different way. It will be useless to democratize Local Administration with, for example, Participatory Budgets if these same structures do not have under their control the necessary instruments to affect the housing market. At the same time, if more and more of essential urban services such as sanitation, garbage collection or water supply are privatized, it is useless to democratize municipal services. Even Participatory Budgets with large amounts indexed to participation rates, high participation, excellent organization, assemblies, and high project execution rates would, in this case, be insufficient because the inhabitants would remain hostages to private entities to ensure basic services.

But the defence of the Right to the City today has even more complicated, more ambitious reverberations. The concept of the Right to the City will only remain relevant not only if it applies, relatively to urban life as it would be understood in the modern era, concepts of radical democratic socialism - it has to expand to other areas such as the digital sphere, and in ways that have not yet are sufficiently well worked. While many see, for example, the Internet as an essential tool to logistically support the participation process, we must once again be more radical, go more to the roots, and if we don't, our efforts will either be useless or even against -productive. The digital sphere is today a highly centralized world, which allows for previously unimaginable hierarchical control by a small group of technological giants. The Right to the City, paradoxically, has to be simultaneously radical in its consideration of physical space, relative to housing, for example, in the ethereal space, as in the space of Local Administration laws, but also in the digital space. The democratization of the digital world must, then, naturally and inevitably, also appear on the list of central concerns of any serious assessment of the urban question.

However, any criticism of the development of the concept of the Right to the City and even the necessary repudiation of present distortions must be accompanied by new claims, or to be more exact, transpose democratization to the new arenas of power of the 21st century.

### **2.6.2 The brutality of gentrification, the housing market and underhand evictions**

The incremental nature of the Sliding Puzzle Model's tendency towards verticalization also allows for the relocation of existing residents within relative proximity. This means that existing residents do not have to be relocated to the periphery, which in of itself brings not only unnecessary strain on resources, which as we have discussed previously, brings about severe impacts towards Climate Change, meaning they can continue to benefit from existing socio-economic relations, which are often pegged to certain localities, whilst still benefiting from the privilege that brand new housing brings.

As one has stated in the Sliding Puzzle Model's foundational work, titled "The Sliding Puzzle Model for Scaling-Up Cities: How Continuous Cycles of Development and Growth Can Be Enabled by Introducing State Enforced Quotas of Empty Urban Spaces" (Silva Jordão, 2018c, pp. 271-272):

“Current growth models often depend on crisis and/or destruction in order to reach optimum levels. As such we have built our cities and economies in the image of the Phoenix, which must burn before it may rise again. The question is- why should cities have to depend on natural disasters, financial crises or a high amount of abandoned or derelict buildings for large-scale and impactful redevelopment and scaling-up of its core to take place?

Orthodox urban planning theory would propose that vacant land is the pinnacle of inefficient land use.

From the municipal perspective, taxes cannot be extracted from it. An empty plot is a plot that could and should be used for, for example, housing. The last thing one would desire in a high-value area is an empty space. Or is it?

This paper investigates the possibility that one way to scale-up might be a counter intuitive, somewhat paradoxical one- by making sure that urban areas always have an empty building space or even whole empty blocks within relative proximity, so as to allow for scaling-up. Just like a Sliding Puzzle, which can only be solved by making strategic use of the empty square, leaving no empty spaces in cities ultimately means lack of space for maneuvering. Scaling-up is made difficult without serious disruption to locals, and other solutions are preferred, such as building in empty spaces elsewhere, which enlarges cities’ perimeters and promotes urban sprawl, whilst often failing to build the necessary amount of housing where it is most needed and sought-after. In other situations, when the need for redevelopment becomes inevitable, forced evictions might take place, often entailing mistreatment of local communities and disruptions to the social fabric.

In the absence of instruments like the Sliding Puzzle Model, developers will often either be forced to wait for disasters and accidents, or even resort to underhand tactics in order to redevelop. They might force inhabitants out, or simply abstain from maintaining buildings so that they become vacant and derelict, enabling the demolishing of the buildings and only then, scaling-up. Most notably, forced relocation has been one of the most persistent scourges of the urban poor throughout history. In particular, the urban poor’s drive to live within relative proximity of city centres is a potent force entrenched in a dialectical relation with State-enforced evictions and relocation- this drive shapes both cities, political events and urban policy. Mike Davis’s book *Planet of Slums* serves as an extended deposition of this somewhat politically underestimated and highly academically overlooked motor of human history (2006, pp. 32, 36-37, 51, 61-69, 98-108).”

Albeit still in an embryonic form, these considerations were already effervescent within my thinking and the structure of this study, and the necessity to develop mechanisms that interact with the housing market that operate neither only by leveraging the machinery of the public or private sector, but of both, simultaneously, using parts of both of the inherent logics of market and State in order to unlock the seeming stalemate that we have reached in way of substantial capacity to stop the constant rise in housing prices, became apparent.

### 2.6.3 Modern Capitalism and its Use of Creative Destruction, Abandoned Houses in Lisbon, and How the Sliding Puzzle was Born

One day, whilst walking around Lisbon with my partner, passing by a large, empty lot closed off for construction, my partner asked me: “why do there seem to be so many people moving to Lisbon and so many things happening?” This was around 2017, when post-crisis Lisbon was becoming trendy and the recipient of large sums of investment, namely into its real estate market. As I looked across to the empty lot in early phases of construction, I answered something to the effect of “well, you see, in Lisbon there is so much to be done, so much to be built, and that generates opportunity and excitement...” I then thought to myself, what if we could make it so that cities don't need decades of neglect and then a profound financial crisis, as seen in Lisbon, in order to attract investment and opportunity?

I then started considering ways of making it so that urban planning codes and zoning regulations could integrate empty space as an ever-present reality as opposed to ad-hoc lots that appear here and there due to abandonment, fires or the like.

These considerations that revolve around housing crisis, the general unavailability of central urban space, the usefulness of derelict buildings and how they can spur necessary development and infrastructural improvement led me to the following research question- *is there a way that one could integrate a mechanism into urban planning systems and zoning codes in particular that could make it so that we don't depend on derelict building nor ad-hoc empty spaces in order to grant urban centres the possibility to simultaneously offer more housing as well as have space to introduce or redevelop key infrastructure?* This in turn led me to the main research question which is: *What planning instruments can one develop in order to facilitate the building of housing in areas where they are needed the most?*

This in turn led me to formulate the following Hypothesis:

That by introducing a quota of empty urban spaces in urban centres, one can use them as pivots to relocate and then redevelop existing buildings. By replacing the old buildings with newer, taller and more efficient buildings and then demolishing the older buildings, thus generating new empty spaces, one can produce continuous cycles of development that will increase the overall capacity of urban centres while making ecological gains.

This research question and then the Hypothesis that naturally follows in turn led to the discovery and development of the Sliding Puzzle Model.

### **3 RESEARCHING AND DEVELOPING THE SLIDING PUZZLE MODEL**

### **3.1 The Sliding Puzzle Model for Scaling-Up Cities: How Continuous Cycles of Development and Growth Can Be Enabled by Introducing State Enforced Quotas of Empty Urban Spaces**

What follows is the extensive citation of the foundational paper of this Thesis (Silva Jordão, 2018c, pp. 266-278), albeit with some additions and clarifications, and is by far its most innovative and fundamental contribution. The development of this paper was an eureka moment which simultaneously lays the foundation for the Thesis as it is presented today, but in hindsight, also revolutionized the direction of the Thesis as a whole. The reason why it does so is because it offers a solution to some of the problems that were diagnosed and discussed in the two previous papers published before it, as well as interacting with many of the other theoretical considerations that preceded it. Its proposal for a revolutionary and innovative urban planning mechanism is notable, however, in the context of academic research, its most notable characteristic is that it is based on solid, specific, verifiable, lengthy and detailed mathematical calculations which in turn make up for the core Methodology which sustains this Thesis and makes its research flourish. A large part of the Thesis is based around the fundamental conditions as presented by its virtual environment and the calculations and result, namely relating to how two key variables, initial percentage of empty space and different building target heights can be used to achieve specific housing capacity gains. I also manage to demonstrate a series of other dynamics, namely, how the possible increases in housing capacity discussed previously and as is developed by this specific model, which I call “The Sliding Puzzle Model” can not only be applied across different virtual environments, but how it can be used for a variety of other applications that go beyond augmenting housing capacity.

Before citing the paper, some considerations. The calculations which follow are not only the root from which much of the ensuing papers, which further develop the Sliding Puzzle Model concept, they form the very empirical basis for this thesis. One must make a clear note that even though many of the ideas, concepts and analytical contributions that also form this Thesis can be considered to be very much within the realm of abstract concepts and subjective considerations, the mathematical calculations arising from the development of the Sliding Puzzle Model within this virtual environment and its results are exact, verifiable and perhaps most importantly, easily reproducible. Perhaps it is also important to note that despite the use of the term “virtual” when one speaks of this “virtual environment”, what one means by the use of the term is not that these calculations occupy some form of ethereal, imaginary space, but rather quite the opposite- these are foundational mathematical principles springing from the very dynamics of the Sliding Puzzle Model’s logic and specific dynamics that can then be applied, with predictable results, to any real environment. Its “virtuality” therefore is not an indication of an abstract, relative nature, but rather quite the opposite, instead forming an indisputable mathematical basis for its functioning and application.

The possibilities, variations and different modalities that the Sliding Puzzle Model can take and how they behave within this same virtual environment are further demonstrated in the chapter pertaining to Virtual Environment exercises which follows, and uses the same baseline variables that are specified in the paragraphs above.

### 3.1.1 Introduction

It has become common for some urbanists to emphasize the various uncertainties regarding the future of cities (Seixas, 2013, Bourdin, 2010) while some argue that technological advances are bringing about the concentration of human and material resources, generating new dynamics of agglomeration referred to as “Metapolis” (Ascher, 2001, Ascher 2008). This concentration is not only one of capital, information and people, it is also one which brings renewed importance to urban centres and in particular, very specific “global cities” which act as nexuses of power (Sassen, 2006). More than half of the world’s population live in cities, and this is projected to increase to 60% by 2030. Currently there are 512 cities around the world with a population of a million or more, 45 cities with between 5 to 10 million residents, and 31 with more than 10 million inhabitants, while the share of urban populations is expected to rise across all regions. Accommodating for urban population growth, especially in the megacities of the developing world, remains a key concern (United Nations, 2016).

It must also be noted that *overall global housing prices continue to rise* (IMF, 2020).

In short, the future is urban and the benefits and problems arising from urban densification will likely intensify in the near future. Naturally, the number of tall and supertall buildings is increasing steadily, as the next image shows. The manner in which urban centres deal with strains resulting from the upsurge in population depends to a large degree on how well Local Administration structures are equipped, with scaling-up representing both a challenge and an opportunity.

In an age of population growth and rapid urbanization, the way in which we scale-up our cities must not be left to chance. The future of mankind is not only urban, it is very possibly one where the increased importance of phenomena such as urban densification becomes more than a matter of urban planning, taking centre ground in areas such as social justice and societal stability at large. Developing ways in which to accommodate the wishes of those who seek to live in highly coveted city centres will be an increasingly important aspect of contemporary urban planning. This means developing ways to methodically and consistently densify key urban centres without reducing their appeal and intrinsic value, ensuring the quality of life of present and future residents as well as respecting the rights of those who already live and work in those areas.

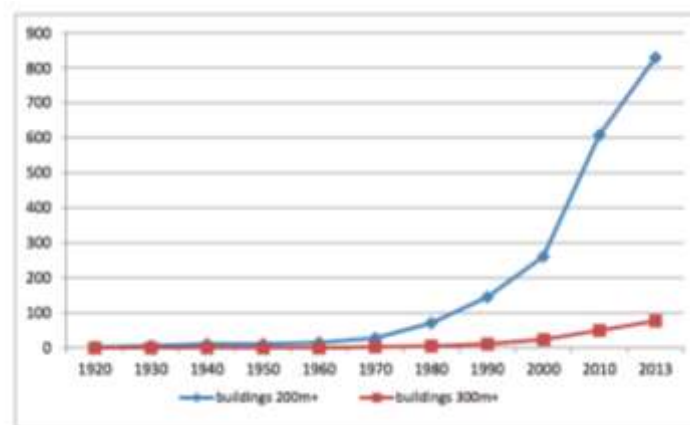


Figure 3 - Number of tall and supertall buildings (Zelazowski, 2015)

### **3.1.2 Urban Sprawl- an environmental and mental health hazard:**

As a New York Times Editorial focused on the potential of cities says, “Cities remain economic engines and cultural hubs and density remains the best way to limit the impact of humans on the environment” (The New York Times, 2020).

Urban sprawl has widely come to be seen as one of modern cities’ main problems, with European planners giving it particular attention. It is widely acknowledged that it will represent a profound and complex problem particularly for the megacities of the global South. Uncontrolled urban sprawl has also placed a considerable strain on the environment and transportation systems alike. An estimated 60-80% of electricity production and CO<sup>2</sup> emissions emanate from cities and urban sprawl is a considerable factor in augmenting these rates, particularly because of the increased need to transport large amounts of people across vast areas (Kamal-Chaoui and Robert, 2009).

According to a 2018 study, the highest emitting 100 cities account for 18% of Global CO<sup>2</sup> emissions, and the fact that a relatively small number of cities account for such a high proportion of emissions means that “concerted action by a limited number of local governments can have a disproportionate impact on global emissions” (Moran et al. 2018, 1-2). This study however did not account for urban form and how it affects emissions. A study of Japanese cities (Makido et al, 2012) found that form does affect CO<sup>2</sup> emissions, and that overall, density reduces CO<sup>2</sup> emissions per capita, but also found that too much density can also negatively impact CO<sup>2</sup> emissions, having also ascertained that too much complexity also increases emissions.

A study of Manila found that urban sprawl augments CO<sup>2</sup> emissions due in great part to factors such as the greater distances that inhabitants need to travel and the lack of affordability of housing near the centres of employment (Fontanilla Andong and Sajor, 2015). Many other studies argue that minimizing urban sprawl and promoting urban densification reduces transportation costs, energy use and CO<sup>2</sup> emissions (see Bart, 2010, Jones and Kammen, 2014, Mehaffy, 2015, Güneralp et al., 2017) though some argue that specificities and nuances must be taken into account (Gately et al, 2015) or that reductions in CO<sup>2</sup> emissions would be limited (Transportation Research Board and National Research Council, 2009).

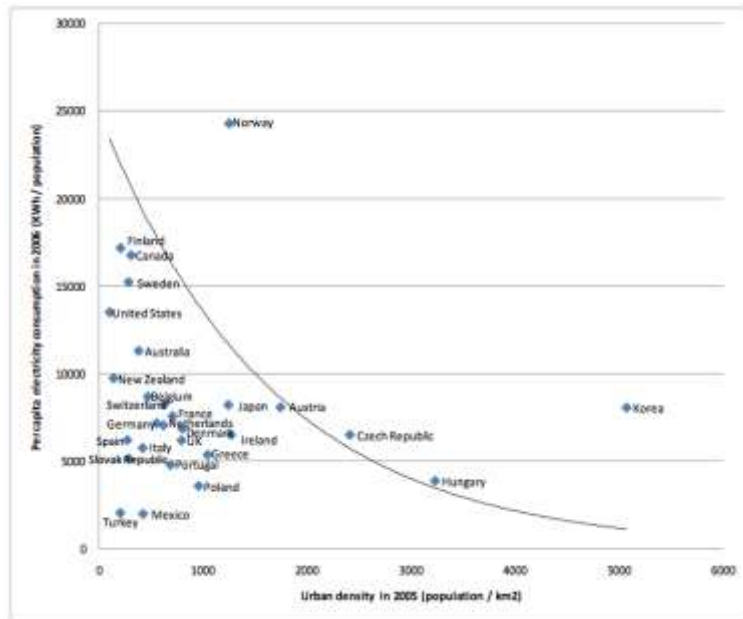


Figure 4 - Relation between urban density and electricity consumption (Kamal-Chaoui and Robert, 2009, pp. 44)

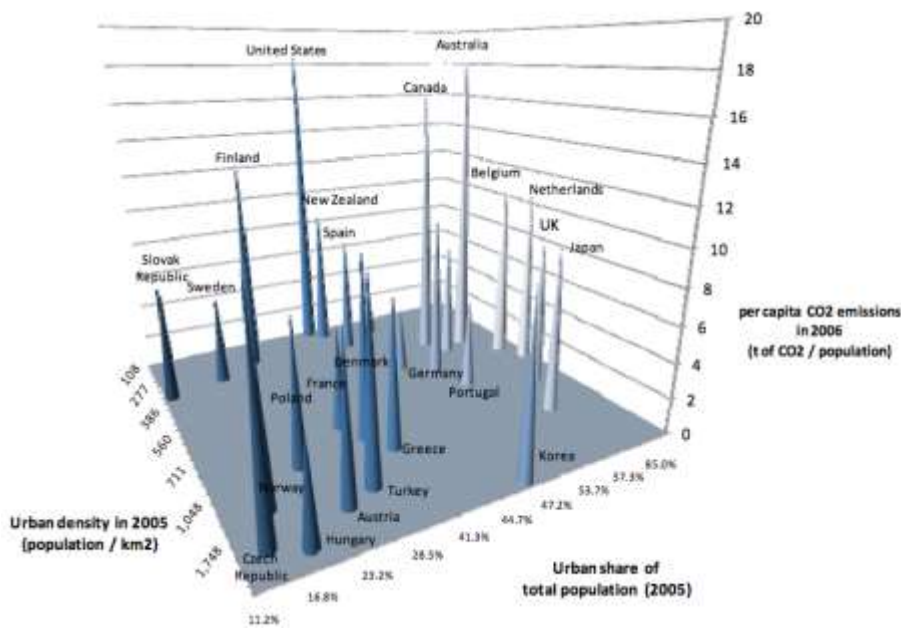


Figure 5 - Relationship between urban density, percentage of urban population and CO<sup>2</sup> Emissions per capita (ibid)

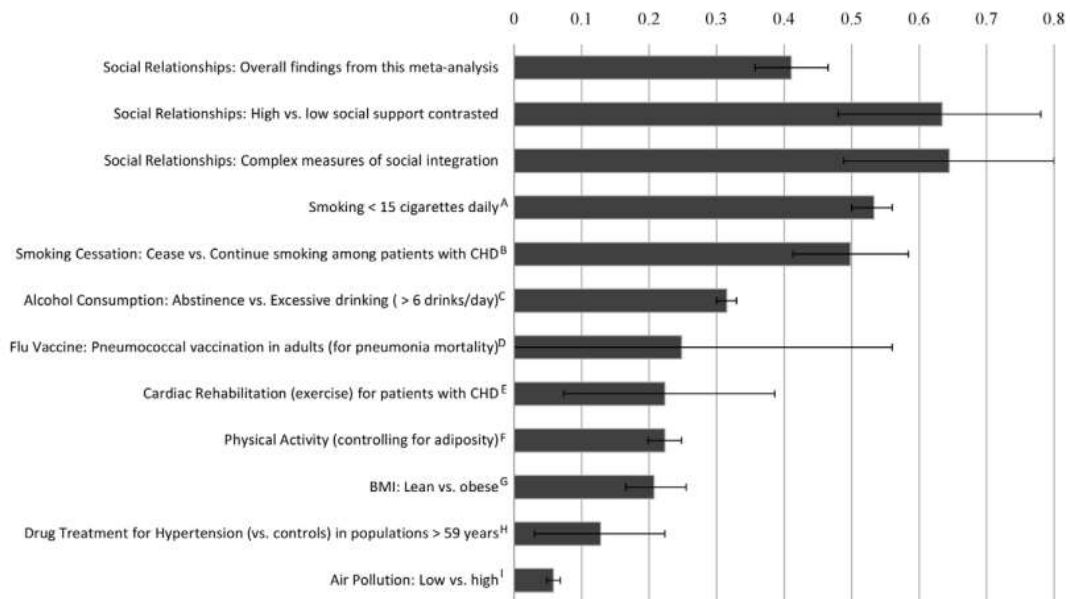
One study has found that population growth does not always result in the same rates of growth in CO<sub>2</sub> emissions which might indicate that urban form affects CO<sub>2</sub> emissions (Mitchell et al., 2018). Another study has found that urban areas account for 70% of global carbon emissions from burning fuels, and that urbanization adds substantial pressure to overall carbon emissions and states that “Predictions of the future trajectories of the global carbon cycle will require a much better understanding of how urban development affects the carbon cycle over the long term” (Churkina, 2016).

Some studies have questioned the role of urban form on travel patterns and habits, attributing the main differentiating factor to “white collar” lifestyles or the lack thereof, as well as rates of population growth (Echenique et al, 2012), while others have found that compact urban development does indeed reduce driving, however at relatively small rates (Stevens, 2016). However, some studies (Gordon and Richardson, 2007) argue that compact cities are not a desirable planning goal when considering factors such as pressure on agricultural land, residential density preferences, transit use patterns, costs and benefits of suburbanization, efficiency gains, rent-seeking, social equity and competitiveness.

It must be noted that all of these three studies must be considered within the great context of the existence of anti-Agenda 21 coalitions as well as overarching opposing attitudes to State intervention overall in the fields of urban planning and sustainable development in the United States of America (Trapenberg Frick, 2014).

But urban sprawl has not only become an important issue because of its effects on sustainability. Increasingly, many are studying the societal results of the drive for suburbanization that marked post-II World War urban development in industrialized nations. While some are asking whether ‘Is Bad Urban Design is Making Us Lonely?’ (Berg, 2012), many go further and claim that suburban living can be deemed as ‘bad urban planning’ which leads to more loneliness and social atomization.

Studies have shown that having complex social relationships is as much, or more of a factor in decreasing mortality rates as quitting smoking and stopping alcohol consumption (Holt-Lunstad, Smith, Layton, 2010, pp. 14).



**Figure 6 - Comparison of odds of decreased mortality across several conditions associated with mortality (Holt-Lunstad, Smith, Layton, 2010, pp. 14)**

And though living in dense urban spaces does not necessarily result in more social relationships;

“Of course many factors have an impact on social connection that are not directly linked to cities. They include individual dispositions, income, family situation, health, crime, culture and countless others.

“But cities provide many essential ingredients for social connection – despite the fact that they have often been represented as sites of loneliness and alienation... Cities are places where large numbers of people come together to benefit from interacting with each other. Urban transport allows people to move around to see family and friends. Cities provide places for us to meet: homes, cafes, libraries, parks, footpaths, sacred places, and so on.

“Proximity, mobility and shared spaces are important because, despite other ways of connecting, face-to-face contact remains a crucial way to develop and sustain our personal relationships” (Kelly et al, 2012).

For this reason, the same report proposes building “social cities” as a priority. Another study, relating to the study of Turin, Italy, found that “good accessibility to public transport, as well as a dense urban structure (versus urban sprawl), could contribute to reduced risk of depression, especially for women and the elderly, by increasing opportunities to move around and have an active social life” (Melis et al, 2015).

Another central objective in reducing urban sprawl is to reduce commuting times as well as reducing the needs for mass transport overall.

### **3.1.3 The Urban Planning Dynamics of Urban Sprawl**

A significant amount of the urban sprawl will be a result of the construction of informal housing- In some cases, such as in the case of Belgrade (Zekovic et al, 2015), as of 2009, informal settlements accounted for 22% of the construction land and 44% of residential areas, with some 1.4 million informal buildings existing in total across Belgrade. As Zekovic et al. (2015, pp. 71) explain:

“The urban land regulation in the BMA (Belgrade Metropolitan Area), demonstrating a traditional administrative approach, was a key reason for massive illegal building and sprawl. A misbalance in market supply and demand for undeveloped urban land in Belgrade, as well as too high or low values of floor space index, indicate the type of regulatory framework and governance which supports much more an administrative than a market approach.”

This is not the only instance in which tough building regulations via overly rigid land-use policies not only fail, but might be counter-productive. One can say that an overly sprawled out city is like a city that has forgotten its purpose, a city that has fundamentally forgotten how to be a city perhaps. A city, or the urban model as one prefers to call it, has one function- to render human agglomeration possible, and if possible, prosperous, whereas urban sprawl results in dispersion, diffusion and dilution.

### **3.1.4 Why Scaling-Up Matters:**

Large scale and density need not be, and in fact often is not, neither a societal dread nor a cause for alarm. Though one thing is for sure- when dealing with the need for increased density in the context of rapid urbanization and population growth, especially in the megacities of the developing world, failing to plan is planning to fail.

So what are the tools that are for the moment most deficient when it comes to allowing for densification without compromising quality of life and inhabitants’ rights? When it comes to maximizing the usage of space i.e., *scaling-up*, perhaps it is in the engineering and architectural department that city planners are best served. Building

vertically to the heights necessary for desirable urban living has become commonplace. But there is one department in which evolution and innovation is necessary: urban planning, and in particular, Local Administration policy and zoning practices. Overall, we can safely assert that scaling-up is as much of a *political* and *urban planning* challenge as it is an engineering one.

Paradoxically, it is often the cities that are in most need of scaling-up that will find it most challenging. It represents a challenge to degree to which the urban fabric is impervious to radical changes in the absence of events deemed to be either natural or man-made disasters or socially unjust policies. In densely populated urban environments, even incremental changes such as scaling-up housing can seem a daunting task. In an age of rapid urbanization, urban development is often faced with the necessity of accommodating models that scale-up, namely in providing higher density or higher quality housing, without infringing on the basic rights of those who already live in the spaces targeted by redevelopment.

In cases of fast development in contexts characterized by scarcity of available urban land, such as in Cairo, Egypt, densification can also produce problems such as increased congestion of a limited transportation system, but still serve as an essential and inevitable motor of development for strategically important urban centres (Ibrahim, 2007). A study of cities in the United States of America also found that a vibrant city center will make a larger number people want to live closer to it, thus affecting land use patterns which then affects transportation use- at the same time, lack of housing in the centre or limitations placed on the construction of new housing will result in greater rates of urban sprawl and subsequently an increase in carbon emissions and energy costs (Holian and Kahn, 2012). When it comes to densification, especially in the main cities of developing countries, it is often not a question of whether scaling-up makes sense but rather in which ways the inevitable scaling-up can be undertaken in a manner that is more likely to produce economic growth, sustainable development and social justice.

### **3.1.5 Verticality, Land and Economic Value:**

The ad-hoc building of high-rises can have the adverse effect of lowering land value and causing all sorts of negative externalities within its surrounding areas. However, if done incrementally and in key, strategic areas, scaling-up is an essential part of urban development which allows for areas of high-value and strategic importance to be used and inhabited by more people at a greater rate of efficiency.

We must also note that a lot of the negative impacts usually associated with high-rise buildings, such as the lowering of the value of nearby housing when high-rise office buildings are introduced, are often based on preconceived notions rather than facts, while in some cases they may affect house prices positively (Thibodeau, 1990).

It has also been noted that during the period which coincided with the spread of high-rise buildings in the main cities across the developed world, during the 1930's, cities with higher populations did not necessarily have the highest land values, but that there was a strict correlation between limitation of building height and land value. When comparing London and New York, "the impact of building height restriction is obvious. Even though the population in London was 1.27 million larger than New York, its most expensive prices of land was just 1/5 of New York's priciest real estate" (Sun, 2016, 147), while even other, less populous and important cities in the United States with no height restrictions reached land values higher than those in London.

**Table 1. Land Value Comparison of the Twenty-four Largest Cities in the World (1931)**

City	Most expensive land value per mu		Exchange Rate	Population	Population Ranking	Land Value Ranking
	Local Currency	Shanghai Local Currency (Tls <sup>a</sup> )				
New York	\$ 5,445,000	16,900,000	31	6,930,000	2	1
Chicago	\$ 3,630,000	11,700,000	31	3,430,000	4	2
Philadelphia	\$ 3,630,000	11,700,000	31	1,950,961	9	3
Boston	\$ 2,500,000	8,050,000	31	781,188	17	4
Indianapolis	\$ 1,520,000	4,900,000	31	364,161	22	5
Montreal	\$ 1,450,000	4,675,000	31	681,000	19	6
Los Angeles	\$ 1,240,000	4,000,000	31	1,238,048	10	7
Liverpool	£ 240,000	3,780,000	1/3 $\frac{1}{4}$	804,000	16	8
London	£ 217,800	3,430,000	1/3 $\frac{1}{4}$	8,202,812	1	9
Tokyo	¥ 2,000,000	3,200,000	160	2,294,600	7	10
Paris	Fr 1,800,000	2,140,000	785	2,283,000	6	11
Sydney	£ 116,160	1,828,000	1/3 $\frac{1}{4}$	1,238,660	11	12
Berlin	DEM 2,000,000	1,540,000	130	4,332,000	3	13
Rome	ITL 7,350,000	1,250,000	5.90	999,769	13	14
Singapore	SS 650,000	1,200,000	183 $\frac{1}{2}$	502,000	21	15
Manila	CUP 540,000	870,000	62	324,522	23	16
Marseilles	Fr 6,750,000	860,000	785	647,000	20	17
Cape Town	£ 108,900	820,047	1/3 $\frac{1}{4}$	207,000	24	18
Bombay	Rs. 650,000	765,000	85	1,176,000	12	19
Manchester	£ 45,000	710,000	1/3 $\frac{1}{4}$	730,550	18	20
Jincheng in Argentina <sup>b</sup>	ARSS 670,000	670,000	100	2,225,000	8	21
Shanghai	Tls 500,000	500,000	-	3,112,250	5	22
Hong Kong	HK\$ 575,000	450,000	78	852,932	15	23
Guangzhou	GZY 300,000	210,000	70	950,000	14	24

<sup>a</sup>Silver dollars, a common currency in Shanghai before 1933.

<sup>b</sup>Jincheng<sup>a</sup> is the literal translation from the Chinese table. It may refer to Buenos Aires, the capital and also the biggest city in Argentina. Source: Asia Realty Company, *Shanghai Real Estate Monthly*, 1931.7, 5-6.

**Table 1 - Land Value comparison of the 24 largest cities in the world (Sun, 2016, pp. 146)****Table 2. Land Value and the Limitation of Building Height**

	Most expensive land value per mu (Tls)	Population Ranking	Land Value Ranking	Limitation of Building Height
New York	16,900,000	2	1	Setback if more than 250ft or 2.5 times of the width of the adjacent streets
Chicago	11,700,000	4	2	
Philadelphia	11,700,000	7	3	264ft
Boston	8,050,000	10	4	No limitation
Indiana	4,900,000	11	5	155ft
Los Angeles	4,000,000	8	6	180ft
London	3,430,000	1	7	150ft
Paris	2,140,000	6	8	80ft
Berlin	1,540,000	3	9	65.5ft
Rome	1,250,000	9	10	72ft
Shanghai	500,000	5	11	78.5ft
				No more than 84ft <sup>a</sup> setback required if more than 1.5 times the width of the adjacent streets

Source: Asia Realty Company, *Shanghai Real Estate Monthly*, 1931.7, 5-6.

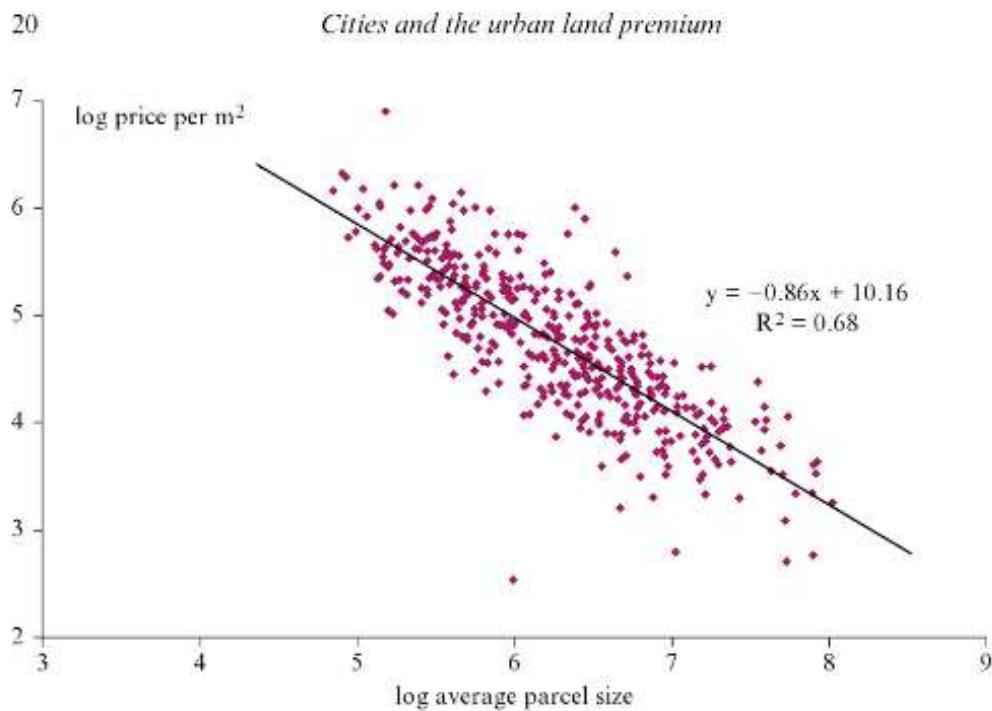
**Table 2 - Land Value comparison between the 24 largest cities in the world (ibid)**

Dennis (2008, 280) asks “What then, was the relationship between building height and land values? The traditional argument is that scarcity of land in Lower Manhattan, or within the Loop in Chicago, drove up land values and hence necessitated high-rise buildings. Certainly, land values did rise very rapidly – sevenfold – in Chicago in the 1880s. Even so, and perhaps reflecting the greater severity of the 1890s slump in Chicago, by 1903 land values in New York were four times those in Chicago. Both

cities had steep land values gradients, but New York’s was steeper than Chicago’s... in either city developers could have opted for cheaper land within comfortable walking distance of the core of the existing CBD (Central Business District). Rather than high land values resulting in the construction of skyscrapers, it might be argued that it was the desire of developers to build high, increasing the income that could be derived per unit area, and their reluctance in venturing into the new districts, that made it possible for landowners to raise land values. Building skyscrapers led to higher land values, rather than the other way around.”

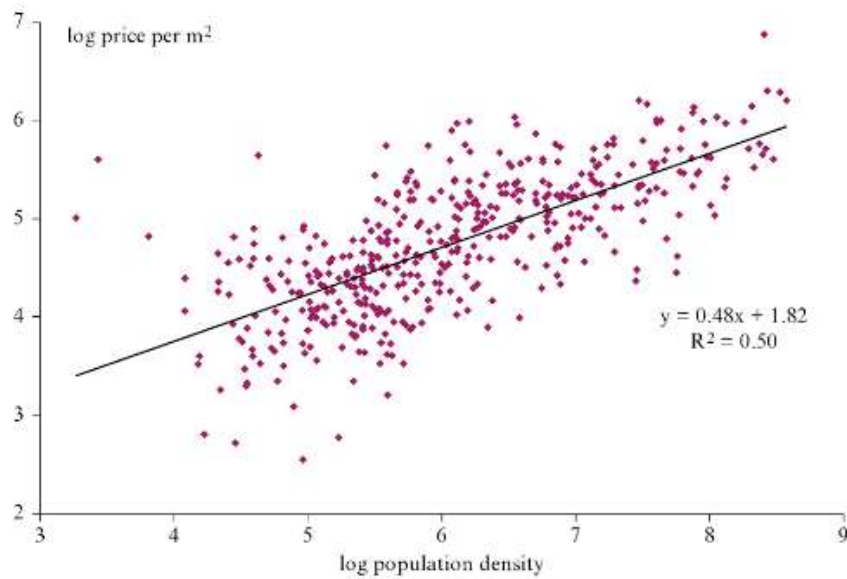
The conclusion we may draw from this is that when height is artificially restricted (by planning regulations), a certain area may have its value limited as the regulations prevent it from reaching its potential density and height. But we can also speculate that the height in areas of high-interest may also not reach its real potential not only on account of planning regulations, namely height restrictions, but also because of the lack of planning and zoning tools with which to make scaling-up possible.

Plot surfaces and population density also affect prices. As one would expect, the greater the plot surface, the lower the land price, the and greater population density in a municipality, the higher the land price (study relative to Netherlands, Marlet et al, 2015).



Source: Own calculations on the basis of the data provided by the NVM (Dutch Association of Real Estate Brokers).

Figure 7 - The greater the plot surface, the lower the land price (Netherlands- Marlet et al, 2015, 19)



Source: Own calculations on the basis of data provided by the NVM (Dutch Association of Real Estate Brokers) and CBS Statistics Netherlands.

**Figure 8 - The greater population density in a municipality, the higher the land price (Netherlands- Marlet et al 2015, 20)**

However the fact that scaling-up can, under the right circumstances, lead to higher land values, does not make it a desirable goal in and of itself. What is desirable, however, is making it possible for more people to live within walking distance of the areas which they find attractive, either for economic, social or cultural reasons. Increasing the housing stock within walking distance of Central Business Districts, cultural hubs and other places of interest may also be considered a legitimate objective for urbanists desiring to make cities more attractive, prosperous and sustainable.

Another benefit of increased density is the synergy arising from the presence of high levels of expertise within relative proximity which also make cities excellent locations for the sharing of information and skills (Quigley, 2009) in particular because high levels of proximity often increase employment opportunities (Rosenthal and Strange, 2001).

Some authors have used the increasing tendency for cities to have ever rising skylines as an analogy for the increasing socio-economic divisions of modernity (Graham, 2016), but less attention has been paid to how vertical development in localities of high economic interest can actually help to bridge class divisions and mitigate economic inequality. It can be said that high-rises have, in some aspects, come to gain negative connotations, and yet it would be a mistake to have a negative view of height alone- when it comes to building height, one really can say that *it's not the size that matters, but how you use it*.

Profiteering from the sale of urban land, namely by imposing a system of fictitious scarcity of land brought upon by strict regulations, is also a problem that one has to consider, and it paradoxically also tends to generate verticality, sometimes in quite a spectacular fashion, as one will see later on in the case of Hong-Kong.

Furthermore it can be said that in developing mechanisms that allow for the scaling-up of city centers, one can develop models of urban development which place more emphasis on the added value brought by urban planning, architectural and engineering innovations that allow for higher density city centers as well as new modes of using central urban space altogether, hence reducing the role of speculation on the land value of peripheral terrains, such as that which urban sprawl tends to promote. Converting rural land into urban land is a process which serves as a source of huge profits for landowners and developers alike. *This system serves as a dynamo for urban sprawl.* Together with the added need for brand new infrastructure, such as roads and highways, along with the building of all the support infrastructure that urbanization requires, such as building power lines and pipes, transforming rural or undeveloped land into a new, peripheral, suburban neighborhood is an operation that involves so much economic activity that stands to benefit key economic agents that some critics of capitalism have gone as far as to say that urban expansion has become a central, if not the key central component to capital accumulation in industrialized countries (Lefebvre, 2008, Harvey, 2008).

High-rise buildings do however carry some setbacks. One such setback is the increased levels of air pollution that they can produce due to their effect on airflow (Hayati and Sayadi, 2012).

### **3.1.6 Empty Spaces- The Temples of Freedom, Imagination and Possibility:**

So far, research regarding empty urban spaces has concentrated on studies regarding specific potential and suitability for future development, treatises on their capacity to serve as nexuses of urban regeneration, the particular nature of Europe's de-industrialized urban spaces, as well as other angles such as their capacity to serve as springboards for consensus-building (Smith, 2008) or even how some forms of empty spaces might cause agoraphobia (Milun, 2006). Most of the literature that deals with how empty urban spaces can be used to better cope with urban population growth seems to come from Anglo-Saxon academia. Consider for example the following reflection regarding empty space in Victoria, Australia:

“Here in Australia vacant land is also the object of struggles over meaning and occupation. For example, are vacant residential lands to be taxed into more productive use such as with the recently created Vacant Residential Property Tax here in Victoria? Should vacant government lands be filled with portable units and temporary leases to house the homeless such as has recently been approved by the Victorian Planning Minister for Maribyrnong? Or should vacant houses be taken over by those who most need them as the Homeless Persons Union of Victoria did a couple of years ago? Empty spaces turn out not to be that empty after all. They are in fact sites filled with passionate struggles between groups with very different visions on how to improve the city” (Caulkin, 2018).

More has been written about empty spaces, however, from a conceptual and at times philosophical point of view.



**Image 35- Terrain Vague I, Constant (1972)**



**Image 36- Terrain Vague II, Constant (1973)**

“These territories form a system of empty spaces which ramify « within » the occupied spaces... It’s in these spaces that the New Babylon is already being built” (Stalker, 2000, in Lippolis, 2016)

“For the Situationist International, “unitary urbanism” should not, as Constant would have it, project the urban sceneries of the post-revolutionary humanity, waiting that the revolution comes into being by itself, mas should rather be an investment made into the possibility of the time: it was fundamental to build atmospheres, environments and cities which were capable themselves of spurring the virtuous game of permanent revolution into daily life” (Lippolis, 2016).



**Image 37- Terrain Vague III, Constant (1973)**

### **3.1.7 Land Banks- Part of the Solution and Part of the Problem**

Public land banking can be defined as “a process by which a government authority assembles land, usually on the periphery of an urban center, with a view to selling it for development at some future date” (Carr and Smith, 1975, pp. 316). Upon the inception of the concept it was supported on supported “on the grounds that it would restrain the rising cost of residential land for new construction, would provide for more orderly growth patterns, and would ‘reserve to the public gains in land values’...” while it was also argued that land banking could “eliminate the role of the land speculator...” (ibid). The six points used to argue for this were (ibid, 317-318):

1. There is no speculative profit in publicly owned land prices.
2. Large swathes of public land can be used to “flood the market” so as to lower prices when deemed necessary.
3. Government can in most cases acquire land cheaply via expropriation, though the unpopular nature of expropriations may cause political setbacks and doubts as to the eventual price of acquisitions in the event of appeals.
4. Government’s planning powers increase but don’t ensure the probability of public land banks being used for the public good.
5. Public land banks are more affordable as government can waiver taxes and other carrying costs, though as with point 4, this can be argued against.
6. Public land banks may incur lower servicing costs, though as with point 5 and 6, this can be argued against.

Upon their inception, Land Banks were also seen as an important tool for combatting disorderly urban growth (Fishmand and Gross, 1972). More recently it has come to be viewed as an important tool for urban regeneration (Samsa, 2008, Silva, 2011, Heins and Abdelazim, 2014) and renewing urban land (Alexander, 2005).

Land banks can also be privately owned. And as is often seen with the paradoxical (one may even say, *dialectical*) evolution of ideas and mechanisms, whereby they can evolve to a point at which they come to be the opposite of what they started as, whereas public land banking was touted as a measure that could reduce the

negative effect of land speculation on housing prices, the term has come to be associated with the direct opposite. More recently, “Land Banking” has become synonymous with private landowners’ practice of hoarding strategically located vacant lands with the intent of selling them or developing them at a later date, hoping that the price of the land and/or the development therein rises, thus maximizing profits (Guardian, 2015, Guardian, 2017). These vacant lands are often in urban areas of high value, often held by private landowners or real estate developers, and some commentators have concluded that the relatively slow development of housing even in the context of the severe housing crisis in the United Kingdom, for example, can be explained because of the fact that it would be against the interest of the land owners and developers to develop quickly as this would lead to lower housing prices and hence, lower profits (ibid).



**Figure 9 - Number of Privately Land Plots Held Land Banks in the United Kingdom, 2015 (Guardian, 2015)**

In this context, the prime asset of privately-held land banking, *vacant urban land*, comes to represent not an exciting prospect, a symbol of potential and possibility (as conceptualized by the Situationist International, see Lippolis, 2016) but rather as a part of the complex web of private and public mechanisms which have contributed to the deficit of housing in high-value urban areas. When dealing with private land banks, empty land can be an asset used by financial speculators which in turn may increase land values and deepen housing shortages.

In the case of public land banks, vacant land represents underused land from which a satisfactory level of taxes cannot be levied. With private and public land banks alike, urban vacancy is equivalent to inefficiency, it is a malady that must be cured with development so as to extract maximum value and come to serve a purpose.

But what if, paradoxically, always having an empty space in areas of high density and land value were in and of itself the ultimate form of value for urban planning and for the resolution of housing shortages in particular?

### **3.1.8 State-Enforced Quotas of Urban Empty-Spaces- counter-intuitive, paradoxical, and indispensable:**

“Cities today are being made and re-made at a faster pace and at a larger scale than ever before... Yet, despite the increasing complexity and specificity of the

urban condition, there is a generic uniformity in the spatial, architectural and planning realities that are being built on the ground... a critique of their rigidity and lack of complexity [is necessary]... an outline a more incremental, flexible urbanism that engages with the indeterminacy of urban change [is also necessary]" (Burdett, 2018).

In an age of urban expansion, why should we build buildings, blocks, neighborhoods and cities as if they are the finished article? Perhaps the very specific challenges that urbanists are faced with would be best addressed by introducing designs across different urban dimensions that incorporate the capacity for future expansion, growth and scaling-up. And in order for urban growth to be made possible without relying primarily on urban sprawl, mechanisms that allow for vertical growth are necessary. Verticalization and densification of the city core will become a primary objective and challenge for cities all over world.

In places such as the Middle East, Maghreb, South America and the Mediterranean, it is common to see buildings that are purposefully left unfinished while at the same time being inhabited- some still have exposed vertical metal beams. This is often done so as to allow for the addition of another floor that will be used to accommodate the new members of the family if and when it expands.



**Image 38 - An inhabited, unfinished building in Aswan, Egypt (Marla, 2010)**



**Image 39 - An inhabited, unfinished building in Crete, Greece (Crane, 2010)**

The concept of the unfinished building is also represented architecturally in the building of the European Parliament in Strasbourg. Like a Masonic Ashlar the polishing of which will never really be complete, the building represents a work in progress, an unfinished project, but that is no less functional because of it.



**Image 40 - The European Parliament in Strasbourg, France (Eco News, 2014)**

When one thinks of what constitutes a city, different land-uses and buildings often come to mind. A city will usually have one or several schools, hospitals, police stations, bus and train stations, and all of these will exist in a certain quantity and be located within relative proximity of its population centres. If the right mix of uses and opportunities are blended together, the rate of probability of success of a city increases; these buildings and functions represent the absolute minimum requirements for a city to thrive.

If a city does thrive, one of the most easily recognizable indicators that demonstrates its success is an upsurge in its population as well as of those who wish to live there. However the redevelopment that is often necessary to increase occupancy within already developed city centres, often referred to as ‘infill development’ (or ‘brownfield development’ in the case of derelict, abandoned or underdeveloped patches of urban land) is usually confronted with all kinds of barriers, not least spatial, political and planning difficulties (Farris, 2010). This is one of the, though not the only, factors that fuel urban sprawl.

If a city possesses the elements necessary for growth and success, the need to transform its city centre will become an issue of increasing importance and its capacity to do so will decisively affects its capacity to accommodate growth. In cases such as that of Rotterdam, it was possible to reconstruct the city centre along modern lines due to the fire of 1940, which provided an unusual opportunity for redevelopment (Knuijt, 2008). In other cases, such as Lisbon, a considerable part of the city centre was redesigned due to the earthquake and tsunami of 1755 (see following image, da Silva, 1950).



**Image 41 - Carlos Mardel's redesign of Lisbon's city centre following the 1755 earthquake and tsunami (da Silva, 1950)**

Another example is the fire Shek Kip Mei fire in Hong Kong which left some 53,000 people homeless but paved the way for development of a high-rise public housing programme. It not only gave the government the opportunity to build high-rises in the places affected by the fire, but also led to the demolishing and redevelopment of adjacent houses that were untouched by the fire.

In the absence of instruments like the Sliding Puzzle Model, developers will often either be forced to wait for disasters and accidents, or even resort to underhand tactics. They might force inhabitants out, or simply abstain from maintaining buildings so that they become vacant and derelict, enabling the demolishing of the buildings and only then, scaling-up- most notably, forced relocation has been throughout history one of the most persistent scourges of the urban poor. In particular, the urban poor's drive to live within relative proximity of city centres is a potent force entrenched in a dialectical relation with State-enforced evictions and relocation- this drive shapes both cities, political events and urban policy. Mike Davis's book *Planet of Slums* serves as an in-depth study of this highly politically underestimated and somewhat academically overlooked motor of human history (2006, pp. 32, 36-37, 51, 61-69, 98-108). It is often said that Crassus, possibly the richest man of antiquity, made a considerable part of his fortune by monopolizing the fireman services, refusing to put out fires in buildings that did not pay him a fee to do so as well as then buying up burnt property at low prices- he ended up as Rome's biggest landlord of his day.

It has been commented that debates regarding the building of new housing and displacement wrongly assumes that the former will lead to the latter (Cortright, 2018). The State of California is a particularly good example as its housing market is notoriously expensive. A government study has resoundingly supported the building of more housing in order to reduce overall housing costs, which it deems "problematic for households and the State's economy" (LAO, 2015, pp. 3). Another study of the housing market in California in particular is highly critical of these common misconceptions and seeks to demonstrate that building new housing in highly-sought after areas is fundamental to diminishing the displacement of lower-income residents, thought it proposes that new housing be built by private agents as "Expanding affordable housing

programs to help these households likely would be extremely challenging and prohibitively expensive. It may be best to focus these programs on Californians with more specialized housing needs- such as homeless individuals and families or persons with significant physical and mental health challenges” (LAO, 2016: 1). Initiatives such as the Mandatory House Affordability plan try to address these needs via the construction of housing blocks in low-density areas usually destined to detached houses, but are often met with resistance by “anti-density activists” (Barnett, 2018)

More recently, the financial crisis that hit Portugal along with the large amounts of abandoned, damaged or derelict buildings in the centre of its capital, Lisbon, was a substantial factor in ushering a wave of redevelopment and gentrification. A similar situation has also been recently credited as being one of the factors behind Detroit’s recent upsurge in redevelopment and investment. Current growth models often depend on crisis and or destruction in order to reach optimum levels. As such we have built our cities and our economy in the image of the Phoenix, which must burn to before it may rise again.

*The question is- why should cities have to depend on natural disasters, financial crises or a high amount of abandoned or derelict buildings in order for large-scale and impactful redevelopment and scaling-up of its core to take place?*

Old cities, and to be more specific, medieval and thereafter Renaissance European cities, were not always growing, sprawling, open, cosmopolitan places. They were quite often walled off and as such, space was limited. Those inside the city walls were often granted protection and inclusion within the walls on condition that they pay Municipal taxes, a substantial part of which would go into the wall’s maintenance and other construction projects. Overall population growth rates were also low, certainly in comparison to contemporary rates. But all this changed with the industrial revolution. Walls virtually became obsolete and the huge influx of people into cities as well profound technological advances meant that cities were transforming rapidly and spreading fast, increasing their overall size, and sprawling out into its peripheries.

It is understandable that cities which do not foresee a high rate of population growth be built as if they are the finished article. They will have vertical and horizontal limits. Empty spaces will be rare, if any are left at all. But it is possible that urbanists have continued to apply planning principles, namely regarding land use and zoning, that are not adapted for an age of rapid urbanization and population growth? Could it also be that some of these principles are not only unprepared for growth, but either actively hinder or mishandle it?

It is perhaps time to acknowledge that one of the main priorities for contemporary urbanists should be to develop models that accommodate urban densification, that is, the sustained demographic flux into highly coveted and contested central urban spaces, to happen in a just and sustainable manner for both those moving in as well as for current inhabitants- this means developing mechanisms allowing for sustained and cohesive infill development and densification.

Orthodox urban planning theory would propose that vacant land is the pinnacle of inefficient land use. From the municipal perspective, taxes cannot be extracted from it. An empty plot is a plot that could and should be used for, for example, housing. The last thing one would desire in a high-land value location is an empty space. Or is it?

This paper investigates the possibility that one possible mechanism that would allow for the scaling-up of city centres might be a counter intuitive, somewhat

paradoxical one- making sure that urban areas always have an empty space or even whole empty blocks within relative proximity, so as to allow for scaling-up. Just like a Sliding Puzzle, which can only be solved by making strategic use of the empty square, leaving no empty spaces in cities ultimately means lack of space for maneuvering. Scaling-up is made difficult without serious disruption to locals, and other solutions are preferred, such as building in empty spaces elsewhere, which enlarges cities' perimeters and promotes urban sprawl, whilst often failing to build the necessary amount of housing where it is most needed and sought-after. In other situations, when the need for redevelopment becomes inevitable, forced evictions might take place, often entailing mistreatment of local communities and severe disruptions to the social fabric.

Furthermore, facing an empty space and being capable of managing it, and consciously choosing not to occupy it ultimately represents a form of urban planning discipline which will be much needed in an age where the need to continuously transform urban environments is a certainty. Much like a form of zoning abstinence, whereby one denies oneself the right to do something now, i.e., to build something on an empty space, in order to achieve something of greater value later, by abstaining from compulsively building on empty spaces and instead, managing and utilizing them consistently and methodically in order to implement a more complex and ultimately more fruitful process.

So at this point the question remains, *what kind of method for utilizing empty spaces can we apply in order to enable continuous cycles of urban transformation?*

### **3.1.9 So... How Does the Sliding Puzzle Model Work?**

There is a paradox at the root of the Sliding Puzzle Model, which is that highly sought-after city centres will very quickly become victims of their own success- their attractiveness will mean that the only rational way (thus far) to manage them is to aim for an optimum use of space, and this will entail a lack of empty space, as empty space is the apex of inefficient use of land and space. However, this generates a contradiction- a lack of space will also entail lack of space for which to manoeuvre, and a lack of ability to enact change and apply transformation, and it is precisely highly sought-after city centres that are in most need of constant change and transformation, be it because of high demand for housing, the need to build public services, the need to verticalize so as to use space more efficiently, etc. The more attractive a city centre becomes, the harder it becomes to effect profound transformation to its centre also. But this can be addressed with novel planning instruments, and the Sliding Puzzle Model is specifically designed to achieve this.

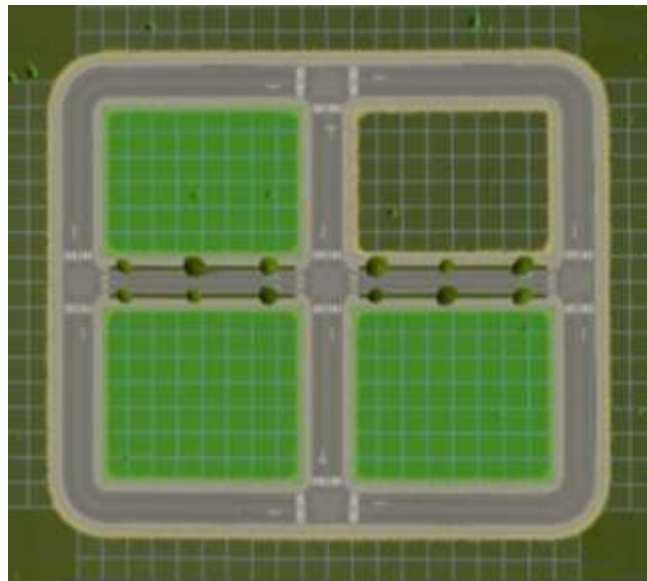
The Sliding Puzzle Model is a zoning practice which aims to incrementally increase density and optimize land use in highly sought-after urban areas. Most importantly, it aims to introduce a planning instrument that allows for the constant and incremental redevelopment of the built environment.

By introducing a quota of State-enforced empty space into central urban areas, and thereafter expropriating derelict, low-quality or low-density buildings in high value areas whilst moving property rights onto the new, taller buildings erected in the empty space, it becomes possible to relocate inhabitants within relative proximity whilst increasing overall capacity. Demolishing the expropriated building generates a new empty space which allows for continuous cycles of redevelopment.

Just like a Sliding Puzzle game, in which a single space can be used to move around every piece in the puzzle, over a long enough period of time a single empty space can allow for the redevelopment of large areas. Higher quotas of empty spaces used in this way can increase the rate of redevelopment, whilst ensuring relocation within relative proximity for occupants.

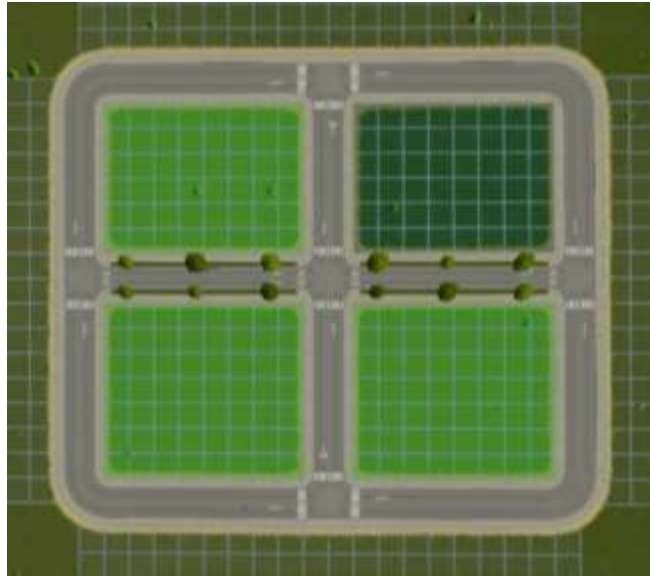
Over a long enough time period, used in this manner, an empty space can be used to redevelop a whole city just as the single empty square in a Sliding Puzzle game can move every other piece around, hence allowing one to solve the puzzle.

What follows is a visual simulation of what one Sliding Puzzle cycle, with a 25% quota of empty space, would look like, where the light green represents low density, and the dark green represent higher density. The empty space is top right.



**Image 42 - Three blocks of low density housing with one empty space**

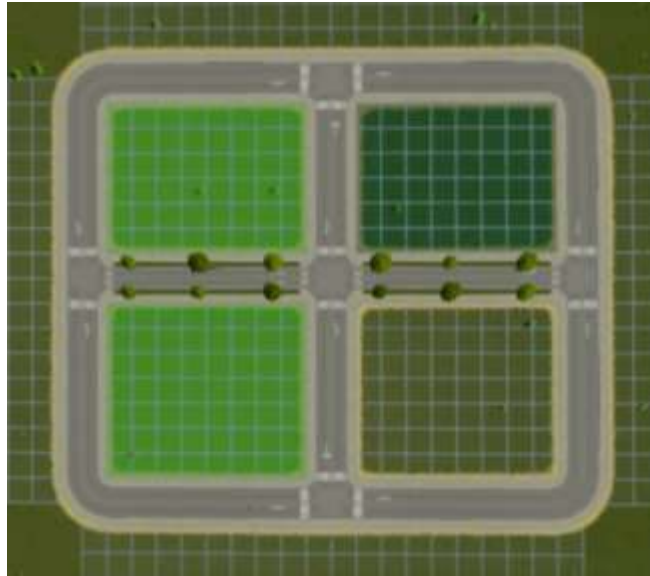
In the beginning, there are three low density blocks, and one empty space. This serves only as a visual representation- capacity gains will be simulated in the next section, using height gains and percentage of starting empty space as variables.



**Image 43 - Building of a higher density block commences on the empty space**

For a short period relative to the duration of the building of the new block, i.e., one Sliding Puzzle cycle, there will be no empty space. Once the construction is finished, one block (or building) must have its property rights transferred to the new block. The ideal scenario would be a property swap arrangement for which occupants and owners of nearby buildings can apply. In this case, the prospect of having one's property rights transferred to a newer, more valuable block, building and floor, can be used as a way to decrease the popular resistance that expropriation processes often unleash.

The gain in overall capacity depends on the height and capacity of the new block and its buildings. The old block (or building) must be demolished so that a new empty space, now in a different place, can be made available so as to allow for the next cycle. Just like the empty space that moves around the Sliding Puzzle, this empty space can be moved also, but in more ways than an actual Sliding Puzzle game- the empty space can be used to relocate occupants and owners within relative proximity and need not be limited to adjacent blocks and buildings. The relative proximity between the old and the new block is an important aspect of what differentiates the Sliding Puzzle Model as it makes for relatively smaller disruptions to the urban, economic and social fabric.



**Image 44 - When the building process is finished the old block can be demolished and its functions and property rights transferred to the new block**

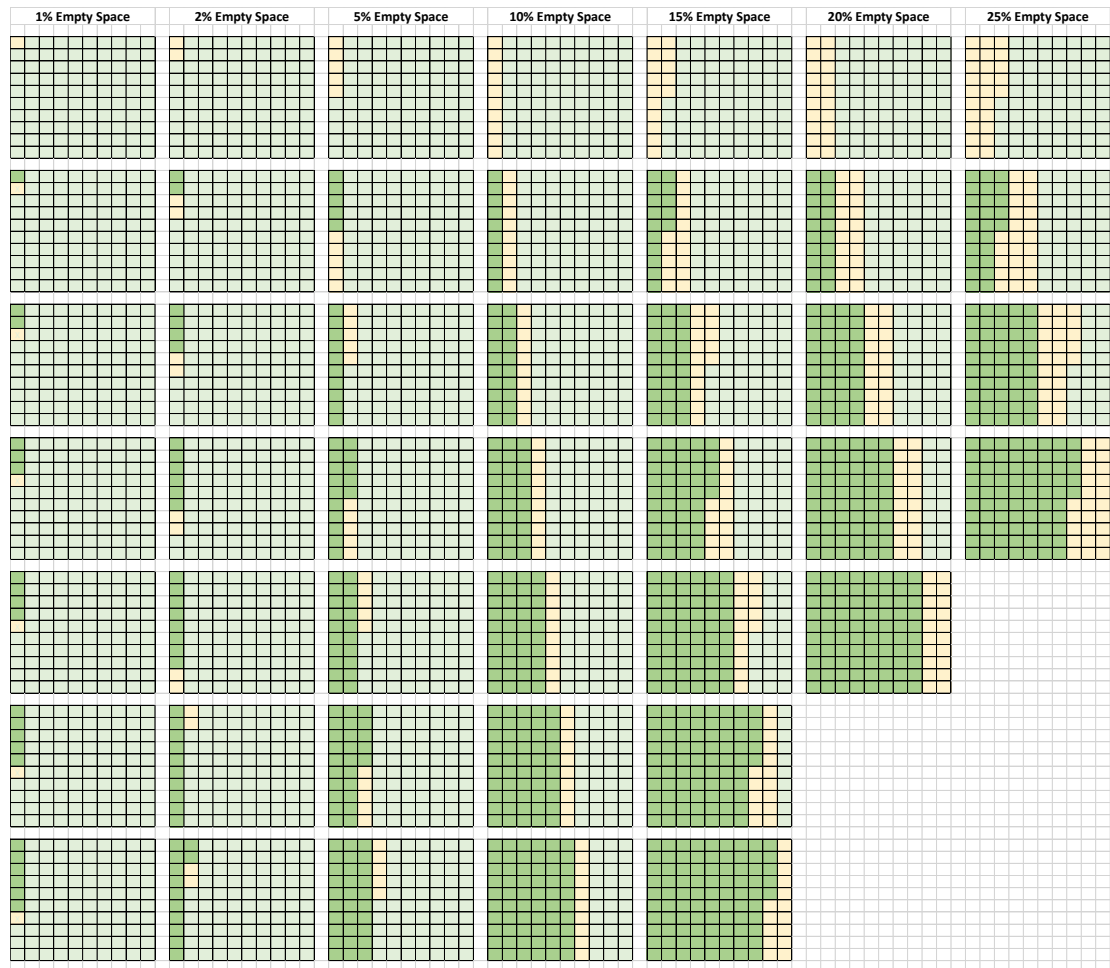
Thus the full Sliding Puzzle Model Cycle looks like this:



**Image 45 - One Sliding Puzzle Model Cycle**

In this simplified scenario, this process can be repeated three times until all three blocks are redeveloped, with one remaining empty, permitting the cycle to recommence, either for the redeveloped blocks to be redeveloped again, or so as to be used in the same way for other, formerly untouched blocks.

Let us now look at how different rates of empty space can produce different number of cycles and rates of development:



As one has seen, by using this model one can hypothetically, over a long period of time, redevelop every single building within a particular targeted area. Though in most, if not all cases, this would be unrealistic and undesirable, it still stands to reason that the Sliding Puzzle Model can be used to redevelop large swathes of urban territories- it is quite important therefore that whatever new building is erected using this mechanism should be not only more efficient, whether in terms of height, functionality, environmental impact and overall quality, but also as aesthetically pleasing as the one it has come to replace, if not even more. One has already mentioned that the Sliding Puzzle Model should be applied in such a manner that allows for the accommodating of more residents into desirable areas, without compromising the inherent quality of those same areas. The Sliding Puzzle Model's very logic relies on increasing the residential capacity of any single area, though if its application in any way reduces the quality of life of those who already live there, it will be nothing more than a blind tool for densification and verticalization whose effects on the overall quality of the targeted area or city will, if anything, be counter-productive.

The Sliding Puzzle Model is to a degree a proposal of a model under which this could be achieved, with the prospect of mitigating urban sprawl, reducing housing costs in situations in which they are high, mitigating financial crisis due to financial speculation on private housing, housing bubbles, as well as granting government authorities greater leverage on housing prices.

### 3.1.10 Simulating Housing Capacity Gains

The simulation that follows has been undertaken using variables based on mid to high density cities in Europe. The total area is of 1 km<sup>2</sup>, containing a total of 100 housing blocks. Blocks have been set at 60 meters squared (which is irrelevant for the simulation calculations, but serves to demonstrate the spatial logic behind the simulation, namely the total number of blocks), with each block having 8 buildings each, and each building starting at 3 floors, with each floor having 10 occupants. This sets the initial density at 24,000 per kilometer squared. The simulation does not use time, but rather uses Sliding Puzzle Cycles (SPC) as units (as demonstrated in the previous section) to demonstrate potential capacity gains.

Here are the initial simulation conditions as described above.

Initial Simulation Conditions	
Total Area	1 km <sup>2</sup>
Total Blocks/km <sup>2</sup>	100
Block Size (m <sup>2</sup> )	3600
Buildings per Block	8
Floors per building	3
Occupants per Floor	10
Sidewalk + road width (m)	30
Starting Population	24000

**Table 3 - Initial Simulation Conditions**

Here are the different densities of the one-kilometer square simulation if every housing block building and black are of the same height, from three to thirty floors.

Density per km <sup>2</sup> depending on floor numbers per building										
Floors/Building	3	6	9	12	15	18	21	24	27	30
Population/km <sup>2</sup>	24000	48000	72000	96000	120000	144000	168000	192000	216000	240000
People/building	30	60	90	120	150	180	210	240	270	300
People/block	240	480	720	960	1200	1440	1680	1920	2160	2400

**Table 4 - Occupation capacity by number of floors**

Now let us take a look at the quantity of housing capacity and how they can be increased. Every table demonstrates the varying rates of capacity growth depending on how much empty space one begins with. Then each different table demonstrates what those capacity rates of growth are, depending on whether each new single block has six floors, nine floors, twelve floors or fifteen floors. Let us consider first what kind of growth rates can be accomplished when each new single block has six floors. Take into consideration that when one starts with only one empty block, each SPC will only produce one new block, whereas if one starts with two empty blocks, each SPC will produce two new blocks, and so on. *One must also take into account that the more empty space one begins with, the greater the rate of capacity growth, and yet the greater initial loss of capacity is.*

Simulation of rate of capacity gains with new buildings at 6 floors							
% of Empty Blocks	1.00%	2.00%	5.00%	10.00%	15.00%	20.00%	25.00%
Number of empty blocks	1	2	5	10	15	20	25
Initial Loss of Capacity	240	480	1200	2400	3600	4800	6000
Number of cycles until full reconstruction	99	49	19	9	5.66	4	3
Adjusted Population	23760	23520	22800	21600	20400	19200	18000
Adjusted Population after Full Reconstruction (with empty blocks remaining)	47520	47040	45600	43200	40776	38400	36000
Net Gain	23760	23520	22800	21600	20376	19200	18000
Net Gain per cycle	240	480	1200	2400	3600	4800	6000
Net Gain per cycle %	1.01%	2.04%	5.26%	11.11%	17.65%	25.00%	33.33%

**Table 5 - Simulation of capacity gains with new buildings at 6 floors**

Simulation of rate of capacity gains with new buildings at 9 floors							
% of Empty Blocks	1.00%	2.00%	5.00%	10.00%	15.00%	20.00%	25.00%
Number of empty blocks	1	2	5	10	15	20	25
Initial Loss of Capacity	240	480	1200	2400	3600	4800	6000
Number of cycles until full reconstruction	99	49	19	9	5.66	4	3
Adjusted Population	23760	23520	22800	21600	20400	19200	18000
Adjusted Population after Full Reconstruction (with empty blocks remaining)	71280	70560	68400	64800	61152	57600	54000
Net Gain	47520	47040	45600	43200	40752	38400	36000
Net Gain per cycle	480	960	2400	4800	7200	9600	12000
Net Gain per cycle %	2.02%	4.08%	10.53%	22.22%	35.29%	50.00%	66.67%

**Table 6 - Simulation of capacity gains with new buildings at 9 floors**

Simulation of rate of capacity gains with new buildings at 12 floors							
% of Empty Blocks	1.00%	2.00%	5.00%	10.00%	15.00%	20.00%	25.00%
Number of empty blocks	1	2	5	10	15	20	25
Initial Loss of Capacity	240	480	1200	2400	3600	4800	6000
Number of cycles until full reconstruction	99	49	19	9	5.66	4	3
Adjusted Population	23760	23520	22800	21600	20400	19200	18000
Adjusted Population after Full Reconstruction (with empty blocks remaining)	95040	94080	91200	86400	81528	76800	72000
Net Gain	71280	70560	68400	64800	61128	57600	54000
Net Gain per cycle	720	1440	3600	7200	10800	14400	18000
Net Gain per cycle %	3.03%	6.12%	15.79%	33.33%	52.94%	75.00%	100.00%

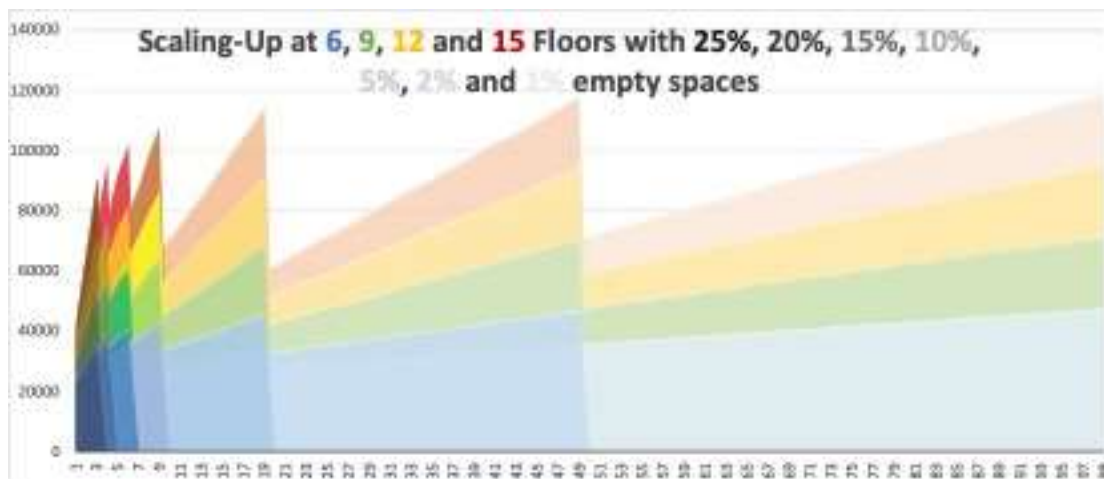
**Table 7 - Simulation of capacity gains with new buildings at 12 floors**

Simulation of rate of capacity gains with new buildings at 15 floors							
% of Empty Blocks	1.00%	2.00%	5.00%	10.00%	15.00%	20.00%	25.00%
Number of empty blocks	1	2	5	10	15	20	25
Initial Loss of Capacity	240	480	1200	2400	3600	4800	6000
Number of cycles until full reconstruction	99	49	19	9	5.66	4	3
Adjusted Population	23760	23520	22800	21600	20400	19200	18000
Adjusted Population after Full Reconstruction (with empty blocks remaining)	118800	117600	114000	108000	101904	96000	90000
Net Gain	95040	94080	91200	86400	81504	76800	72000
Net Gain per cycle	960	1920	4800	9600	14400	19200	24000
Net Gain per cycle %	4.04%	8.16%	21.05%	44.44%	70.59%	100.00%	133.33%

**Table 8 - Simulation of capacity gains with new buildings at 15 floors**

Below one can see the projected rates of housing capacity gains until full reconstruction with all the different starting percentages of empty spaces and varying building height for new blocks. The blue section represents the rates of growth when new blocks have six floors, the green with section with nine floors, yellow with twelve and red with fifteen.

By ‘full reconstruction’ one means the point at which every single housing unit in the simulation has been reconstructed, whereby another SPC will necessarily target a building that has already been built through the sliding puzzle method.



**Figure 10 - All simulated occupation rate gains juxtaposed**

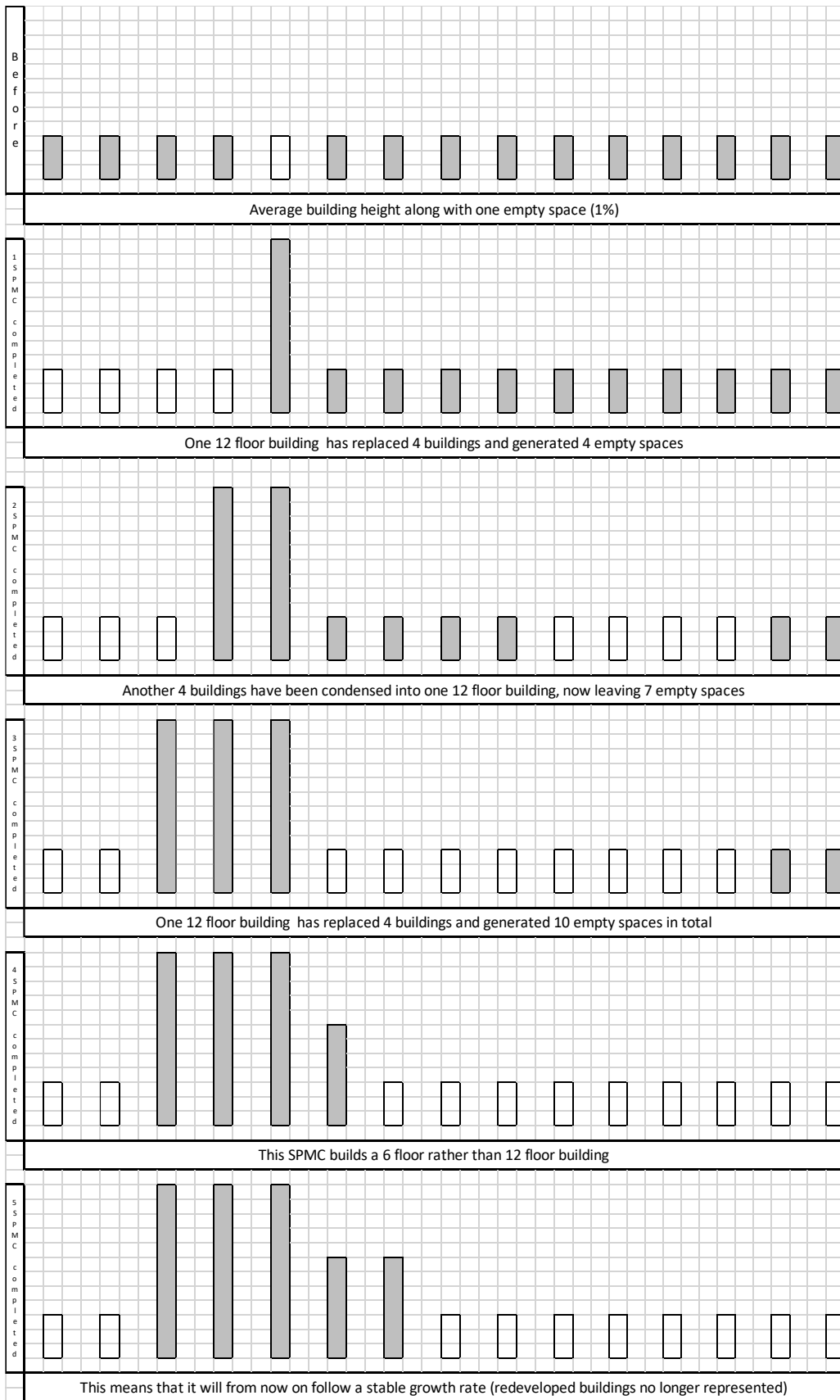
One can also see that some rates of capacity growth match across different combinations (of quantity of initial empty spaces and new building heights). For example, scaling-up to nine floors starting with 2% of empty space virtually matches the rate of gains of scaling-up to fifteen floors with 1% empty space (4.08% and 4.04% capacity growth per cycle respectively), while the rates of gains of scaling-up to six floors with an initial 2% of empty space matches those of scaling-up to nine floors at 1% (2.04% and 2.02%).

We can use the projection above to understand what combination would be necessary to accommodate any desired capacity gain or projected population growth rates within a particular city or specific urban area. Using only these two variables, floor number of new blocks and initial number of empty spaces, one can ascertain the

combination that would be more suited to the projected or desired population, density and occupation growth of a city or part of a city.

### **3.1.11 The Sliding Puzzle Model Quantum Jump**

One of these variations will consist of joining together different rates of growth so as to adapt to capacity rate growth to pre-existing conditions. For example, if we predict that a certain city centre needs a sustained population capacity growth of 5% per year, and it is also ascertained that one Sliding Puzzle cycle would take 2 years (i.e. the time that it takes to build the new block as well as the administrative and legal tasks of finding adequate candidates for the transferal of property rights, etc.), then the combination can be of six floors with an initial percentage of 10% empty space, nine floors with 5% empty space, twelve floors with 3-4% empty space or fifteen floors with 3% empty space. Let us also suppose a given Municipality applies the Sliding Puzzle Model starting with only one empty block (1% empty space), which will provide approximately a 1%, 2%, 3% or 4% increase in capacity per cycle depending on whether the new block has six, nine, twelve or fifteen floors. Let us also say that the Municipality in question has decided on increasing the quantity of floors for most new blocks to six. In order to accommodate the necessary rate of gains a percentage of empty space of 10% has to be reached, but let us suppose that it only has 1% of empty blocks at the beginning of the process. A choice can be made to use the first single space for the building of a new block with 12 floors. Within it, four blocks can be relocated, meaning that the initial cycle will provide no percentage increase in total occupation capacity, but will provide four new empty spaces, meaning the next cycle can recommence, only this time with 4% of empty space. The next cycle will repeat the same procedure, which will produce seven empty blocks. Another cycle will produce another three empty blocks, reaching the desired 10% of empty blocks (in the designated 1 km<sup>2</sup> area). This means that three cycles are necessary to reach a stable ratio of 10% which can then be used to increase capacity by 5% per year.



**Image 46 - Some of the variations of height gains and how they may affect overall building height**

However there is another problem. Which is that after 3 cycles, which in this simulation is equivalent to 6 years, if all the empty blocks are used to maintain the desired occupation gain, it would only take slightly under 9 cycles, which in this simulation is equivalent to 18 years, for all the blocks to be redeveloped (with the last, 9<sup>th</sup> cycle only being able to replace 7 blocks and not 10 because of the initial 3 which have already been replaced). This would, using the initial density of the simulation of 23,760 (24,000 minus the initial loss of one 3 floor block, which holds 240 occupants, if the Sliding Puzzle Model is applied initially with 1% of empty blocks), results in a final density of 42,060, with 10 remaining empty spaces. If it is desired to go back to the initial ratio of 1% empty blocks, the remaining 9 blocks can be used to build new blocks with 6 floors, which, with each 6 floors block holding a capacity of 480 occupants, would result in a total population density of 46,380- a 95% increase over 12 cycles- 24 years, if each cycle takes two years.

That means that from the beginning of the application of the Sliding Puzzle Model in a simulation covering 1 km<sup>2</sup>, it would only take slightly less than 12 cycles, 24 years, to achieve full reconstruction. This may be the logical solution if one is targeting a particular city centre which is undergoing a fast, and unusual growth, however it would be inefficient to continue the cycle in this manner as it would entail incrementally demolishing and reconstructing all of the housing within the targeted 1 km<sup>2</sup> within 12 cycles. If one cycle can be undertaken in 1 year, it would take 12 years, or if one cycle takes 3 years, 36 years, and so on. This would not be unrealistic nor undesirable for some parts of a city, for example, of a developing city in a developing nation which seeks to double its capacity within a relatively short span of time. For cities in developing nations, however, a more stable ratio of 1% or 2% empty spaces would perhaps be preferable, which allows for a longer period of time before full reconstruction is reached (99 and 48 cycles, respectively), with any fluctuations in needs for occupation rates being placed on changes in the floor number of new buildings. A single cycle, resulting in a new block of 15 floors, would account for a 4% increase alone, if the initial block height (or average height) is 3 floors. If for example the initial floor height is 6, perhaps a more realistic projection when targeting high-density urban centres in Europe, then the same rate of increase (4%) would be achieved if the new buildings were 30 floors high, or 18 floors if the empty space ratio stands at 2%.

## **3.2 The Sliding Puzzle Model - Building Public Housing by Leveraging Empty Spaces**

After having developed the mathematical foundations for a novel urban planning mechanism, the Sliding Puzzle Model, what follows is an extensive citation of the paper attempts to develop, using solid theoretical enquiry and specific forays into specific urban planning challenges and needs, a specific application of this urban planning mechanism (Silva Jordão, 2020b, pp. 400-412). It takes a widely discussed theme, that of social housing, a discussion which in and of itself already has an extensive body of work, both theoretical and practical, and demonstrates how many of the challenges and needs that have already been widely diagnosed by a plethora of authors can be addressed and ameliorated using a novel urban planning mechanism- The Sliding Puzzle Model. In showing how social housing can be built in a manner that is more incremental when compared to the dominant, most commonly used methodologies within the past, it contributes to the debates around social housing positively and expanding the repertoire of urban planning mechanisms that can be used for this specific type of urban development. It also demonstrates a very specific manner, perhaps most importantly, in which social housing can be built and developed, and in turn shows how the application of this novel urban planning mechanism can be applied to solve problems which existed before and continue to this day, namely, in proposing a solution to the overly segregated manner in which social housing development tends to be built to this very day.

By expanding on the previously introduced urban planning mechanism as well as building on some of the theoretical themes that underlie this Thesis, namely, how the Sliding Puzzle Model can be used to address housing shortages, lack of affordable housing, and more specifically, how these challenges can be addressed by using the Sliding Puzzle Model to allow for the building of social housing in urban centres, this paper takes the specific method and calculations developed in the Sliding Puzzle Model's foundation paper, and applies it to a specific theme and issue that is already widely discussed within the field of urbanism, meaning that this paper is more than a theoretical spin-off, rather, it is an example of how the urban planning mechanism developed herein can be applied to very specific challenges and urban contexts.

### **3.2.1 The Housing Problem, an Introduction**

Housing shortages and lack of accessibility to affordable housing is becoming increasingly common across cities around the world. Formerly, and especially during the post-Second World War period, public housing was widely considered as an obvious and functional way to address these shortages, in particular insofar as it affects then poorer sections of the population.

In light of the shortcomings of past social housing programmes, but also by taking into account that the increasing dominance of private actors over the housing market has generated a reality whereby prices seem to steadily grow over time, one can safely propose that new, daring housing policies are needed. One can furthermore propose that the State in is an unique position that allows it to act decisively within the housing market so as to effectively interact with private market forces with the ultimate aim of reducing, or at least stabilizing, average house prices and increase accessibility and affordability. Increasing the rate of publicly, Municipally-owned and controlled housing is a viable option so as allow public entities to leverage their own housing stock so as to affect average housing prices- and yet, social housing programmes of the past

that have attempted to do this have had considerable shortcomings. By increasing the Municipal housing stock, and inserting them into the affordable renting market, Municipalities can come to affect prices and empowering their own decision-making structures whilst making a positive contribution to their cities. But any attempt to do so must address the demonstratable limitations and flaws of past public housing programmes.

### 3.2.2 House Price Rises are Out of Control

Housing shortages and lack of accessibility to affordable housing represent an increasingly common issue in cities around the world – globally, prices have tended to rise (IMF, 2020).



**Figure 11 - Evolution of Average Housing Prices Worldwide (IMF, 2020)- the overall trend has been for global average house**

And not only have average house prices risen consistently over the last decade, the rises in house prices have been, in the majority of countries studied by the following IMF graph, been considerably higher than rises in average incomes, which results in higher ratios of house price-to-income ratios- *this trend can be verified globally*:



**Figure 12 -Evolution of Average Housing Prices to Income Ratio Worldwide (IMF, 2020)- the majority of countries studied in this graph demonstrate a growth in housing prices as related to income**

Increasing the rate of publicly, Municipal-controlled housing is key so as to lower prices, and yet social housing programmes that have attempted to do this have considerable shortcomings. Many municipalities have attempted policies such as rent price controls- this article will focus on how this trend can be corrected by building new housing, increasing the housing stock, as well as inserting more

### 3.2.3 Why and How the State Has Stopped Investing in the Housing Market

Madden and Marcuse’s “In defense of housing – the Politics of Crisis” (2016) is perhaps one of the most comprehensive recent works that extensively addresses the transformation of the State’s role in regards to its intervention within the housing market and the arena of housing overall:

“The first factor is the contemporary counterpart to enclosure: deregulation, the removal of restrictions placed on real estate as a commodity. Throughout the United States and many other countries, there has been a steady trend towards weakening or abolishing the regulations, customs, and rules governing residential property...

Deregulation also permitted a wave of privatization of publicly owned or controlled housing. In the United States, public housing is in full retreat. Since the 1990s, more than 260,000 public housing units across the United States were either sold off to private owners or demolished in order to sell off the land beneath them. The situation is even grimmer in Britain, where public housing represented a much larger piece of the residential sector. Since 1981, nearly 3 million units of council housing have been sold or transferred. In the post-socialist world, the privatization of housing since 1989 has probably constituted the largest transfer of property rights in history. The hard-won spaces of partial decommodification developed in the post-war period have been eroded.

For all of its far-reaching consequences, deregulation has not meant the subtraction of the state from real estate markets. It has not meant getting rid of regulations so much as rewriting them to make real estate a more liquid

commodity. The state is still deeply involved throughout the housing system” (Madden and Marcuse, 2016, pp. 19-20).

The current phase of housing commodification has not translated into the affordable paradise that its promoters predicted. Instead, it has allowed powerful elites to monopolize more housing. Cities like New York that have seen extensive deregulation and huge building booms in recent decades have not seen corresponding drops in housing costs. One international study found that “demand pressures stemming from financial deregulation may have translated into increases in house prices by some 30 percent.” Globalized, deregulated markets are unstable and subject to wild price swings, first contributing to bubbles and later to crashes...

In a notable example of housing policy absurdity, some UK tenants in ex-public-housing units receive public subsidy for their rent, which they pay to private landlords. 68 One tenant on a council estate told reporters that she is charged £800 per month by a private landlord, while her council rent for the same unit would have been £360 per month—with the public making up the shortfall. The whole situation typifies hyper-commodified housing: profit seeking businesses inserting themselves into the residential system and siphoning off resources, making housing more expensive while contributing nothing to the ability of the system to meet residents’ needs” (Madden and Marcuse, 2016, pp. 24).

But while the tendency has been for States to deregulate and loosen their controls over housing markets, all while also investing less into affordable housing, their regulatory role means that they are still, in more than one way, quite actively participating in the general trend towards less affordable housing:

“...For these authors and more, the hyper-commodification of housing is not the problem—it is the solution. This reasoning follows clearly from standard economic logic. But this position ignores the real-world effects of the commodification of housing. Fully deregulating and unleashing the cranes will not and cannot solve the housing crisis, for a number of reasons.

First, while markets are imagined as self-organizing entities, as we have seen, the state has always been central to the process of making housing a commodity that can circulate through market exchange. The state cannot “get out” of housing markets because the state is one of the institutions that creates them. Government sets the rules of the game. It enforces the sanctity of contracts, establishes and defends regimes of property rights, and plays a central role in connecting the financial system to the bricks and mortar in which people dwell.

In other words, housing markets are political all the way down. The balance of power between tenants and landlords, or between real estate owners and communities, cannot be determined in a neutral, apolitical way. What the free market boosters ignore is the question of power.

The housing market is, among other things, a domain of struggle between different, unequal groups. Removing the regulations that rein in property owners shifts power towards capital and away from residents- while also, not coincidentally, making land more valuable and more amenable to speculation. This is why it is the real estate lobby that campaigns to deregulate the housing system, a demand that tenants almost never make. The commodification of

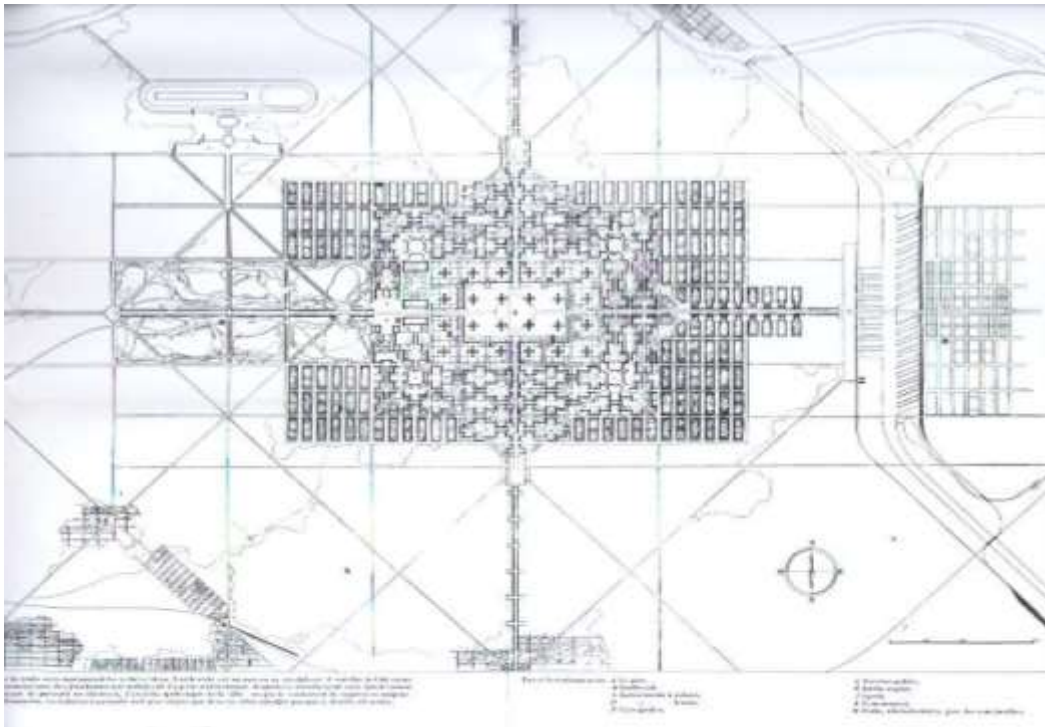
housing is a political project that refuses to acknowledge itself as such” (Madden and Marcuse, 2016, pp. 27).

The main point to be taken away is that the neo-liberal talking point that defends a policy of Statal non-intervention in regards to housing in general carries a series of misconceptions and non-sequiturs when one considers some basic facts and concepts not only in regards to housing itself, but more essentially, to the role of the State itself in areas such as upholding of commercial and civil contracts, as well as some of its most basic functions of territorial management.

### **3.2.4 Social Housing and Segregation**

Athens Charter (1933) as Ascher points out (2001), defended a vision of the city in which zoning was taken to its extreme, by prescribing overly segregated zones separated by use- post-Second World War social housing policies and what can be described as tendency for the building of social housing in the cities’ peripheries were guided by what was at that point seen as a drive to decongest city centres and to rid them of the perceived squalor or inner, central city living. Seixas (2013, pp. 160) defines this lingering legacy and the way in which it affects cities’ administration thus:

“(…) with rare exceptions, we continue to administer, regulate and design the urban territory by means of models still strongly based on almost exclusively morphofunctional logics (...), delimitation of land uses and regulation of functionalities by paradigmatically outdated notions.” The Charter of Athens itself (1933) puts it in the following terms, in its Second Part, “The Four Functions of the City”, in its initial “Dwelling” section: “9. The population density is too great in the historic, central districts of cities as well as in some nineteenth century areas of expansion: densities rise to 1000 and even 1500 inhabitants per hectare (approximately 400 to 600 per acre). 10. In the congested urban areas housing conditions are unhealthy due to insufficient space within the dwelling, absence of useable green spaces and neglected maintenance of the buildings (exploitation based on speculation). This situation is aggravated by the presence of a population with a very low standard of living, incapable of initiating ameliorations (mortality up to 20 per cent).”



**Image 47 - Le Corbusier's conception of what cities should look like and most specifically, the zoning practices he proposed are characterized by highly segregated uses and rigid divisions (Le Corbusier, 1925)**

Mixing different income groups, ethnicities, religions, and age groups is fundamental to avoid socio-economic problems in the same manner that biodiversity in the agricultural realm can be a good insurance policy:

"The term mixture calls for a real miscellaneous social-territorial mix - mix of social groups, individuals, classes, ethnicities, ages, housing, activities, equipment, services, transport - which makes (or would make) the city an urban mix. That is, the central objective is the transition from a situation of segregation to a more balanced (ideal) situation..."

Through social mixture, we intend to avoid the constitution of places of poverty, racial enclaves and places of urban violence, and the voluntary separation of certain segments of the population. Finally, social mixture constitutes a Republican ideal that aims to maintain the national cohesion of a State based on the ideal of equality. The term "social mixture" is based, as it were, on the relationship between three ideals: social cohesion, territorial solidarity and social rebalancing" (Lelévier, 2005: 39)" (Menezes, et al, 2006, pp. 2).

The logic of territorial equality can also be said to be a fundamental element of social justice (Young, 1990). However, most of social housing programmes of the post-war period in Continental Europe followed the monofunctional, segregated model rather than the logic of socio-economic and territorial mixing and diversity. This is for several reasons, but one can say that it was a mix of convenience, as cheap, empty land is easier to find in the peripheries of cities, as well as a blatant case of trying to "hide" the poorer segments of the population away from city centres, whilst also carrying the political benefit of housing them far away from the physical centres of power, a factor that is particularly relevant in social housing programmes in capital cities.

### 3.2.5 The Sliding Puzzle Model and Social Housing

Housing policies of the past have had as their basis the belief that dignified housing is a human right and thus have focused on providing cheap or free housing to those who could not afford to purchase or rent their own homes on the private market. Social housing programmes have all too often generated cheap, low quality buildings, blocks and sometimes whole neighbourhoods that often become hubs of social exclusion. But as capitalism matured, private housing became the norm. This in turn, together with speculative investment, resulted in skyrocketing prices and the exclusion of younger generations from the property market and sometimes even renting. The main objective remains to lower prices so as to increase accessibility for all.

Attempts to limit the agency of the State in the housing arena to simple oversight have proven insufficient or counter-productive. It is becoming painfully obvious that the State must be more than a regulator and must be ready to invest heavily in housing if it is to have a real impact.

Providing free housing to those in need is not only expensive, but risks being seen as highly unjust by those paying high rents and who have invested heavily in purchasing homes or are still paying mortgages. If free housing is provided to those who cannot afford a home it would be more profitable to stop paying out loans, be evicted and then wait for their free State-provided homes. Any major disruption to the status quo would also essentially compromise the banking sector's stability and quickly hasten another financial crisis.

The paradoxical role of the State should therefore be to use public investment in housing not so as to provide free housing but to use the overwhelming investment capacity of the State to significantly lower prices in the medium to long term. This can be done if a high percentage of housing is owned by the State, but is rented out much like private homes are, with the ultimate goal of giving the State the capacity to lower overall prices through the pressure provided by the lower prices of its own housing stock. This role has been largely left to central and private banks which try to affect prices by changing mortgage interest rates. It is becoming abundantly clear that this is insufficient.

Let us take a recent development -as a response to housing shortages and price rises, a new housing tower will be built in Lisbon, but not in the centre, but instead in the first periphery, in Benfica (Público, 2018). This seems to be a step in the right direction as it constitutes a positive and decisive, to not say brave, step towards a new public housing policy that incorporates affordability and density. However one must ask whether this model may be repeating some of the old mistakes of past social housing policies, namely, building high-density housing in the peripheries rather than the centre. There are some important ideas that we can refer back to. Firstly, the Urban Utopian Radio Centric obsession taking centre stage again, but in this context, with the question of centrality and peripherality playing a key role on the decisions pertaining to the location of new housing units, or even where should take aim when projecting redevelopment projects, with empty spaces in the periphery almost always being the only possible candidate. What one is hereby proposing is that building higher density housing in the periphery is indeed the most likely and rational choice, in the absence of tools such as the Sliding Puzzle Model. The Sliding Puzzle Model can be an important contribution that can, if applied, permit us to go from dystopian, highly hierarchical, concave cities, to more egalitarian and less hierarchical convex cities. By using the

Sliding Puzzle Model one can move these target areas, which are the empty spaces available for development of new housing, progressively towards the centre, as we have just seen in the “Proximity of Relocation” chapter.

### 3.2.6 The Paradoxical Public Housing Policy we Need

Housing policies of the past have had as their basis the concept that dignified housing is a human right and thus have focused on providing cheap or free housing to those who could not afford to purchase or rent their own Homes. But unfortunately, it often led, in particular when considering the context of post-Second World War continental Europe, generated cheap, low-quality buildings, blocks and sometimes whole neighbourhoods that often became ghettos. But as capitalism advanced and became dominant it became obvious that building housing was to increasingly become a private endeavour. This in turn, together with speculative investment has meant that prices have skyrocketed and younger generations are increasingly being excluded from the property market and sometimes even the renting. The dual objective then becomes to lower prices so as to increase accessibility to dignified housing.

Attempts to limit the agency of the state in the housing arena to simple regulation have proven insufficient or even counter-productive. It is becoming painfully obvious that the state must be more than a regulator and must be ready to invest heavily in housing if it is to have a real impact.

However, handing out free housing to those most in need would not only be expensive, but risks being seen as highly unjust by those who pay high rents, or have invested heavily in purchasing homes or are still and will continue to pay mortgages. If free housing is handed out to those who cannot afford a home it would be more profitable to stop paying out loans, be evicted and then wait for their free state-provided homes. Any major disruption to the status quo would also essentially compromise the banking sector's stability and could, in a worst-case scenario, even perhaps quickly hasten financial and political crises.

The objective of the state in regards to housing policy must be to both incrementally work towards full coverage, higher affordability, less homelessness as well as higher quality housing.

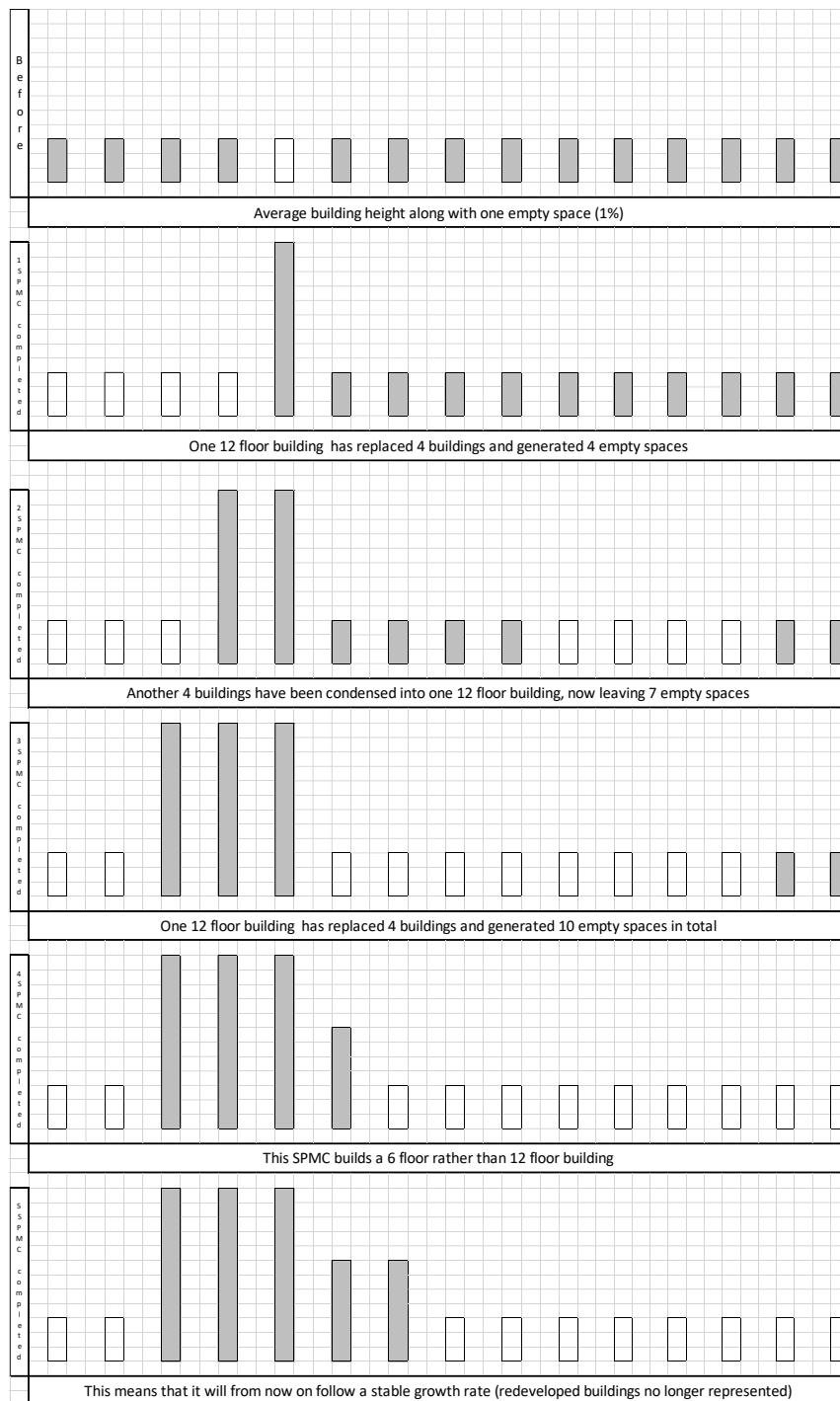
The State's paradoxical role could therefore be to use public investment in housing not to provide free housing, but to use the overwhelming investment capacity of the State to significantly lower prices in the medium to long term. This can be done if a higher percentage of housing is owned by the State, and more specifically, if publicly-owned housing is rented out and/or sold much like private homes are, with the ultimate goal of giving the State the capacity to affect overall prices by changing the prices of its own housing stock. This role has been left to central and private banks which try to affect prices by changing mortgage interest rates- *it is becoming abundantly clear that this is insufficient*. It remains to be seen what rate of overall housing stock needs to be publicly owned in order for the state to be able to affect prices quickly and efficiently, but one can imagine that anything between a third and half would be necessary- as ambitious as this might seem, the risks of not acting decisively in the area of housing policies are too great for inaction to be considered as an alternative.

It remains to be seen what rate of overall housing stock needs to be publicly owned in order for the State to be able to affect prices quickly and efficiently, but one

can imagine that anything between a third and a half would be necessary. By carefully studying rates of public housing stocks, their respective models and how they have affected overall prices, an optimum rate can be devised that should become the standard for how involved in public housing the Municipality should be.

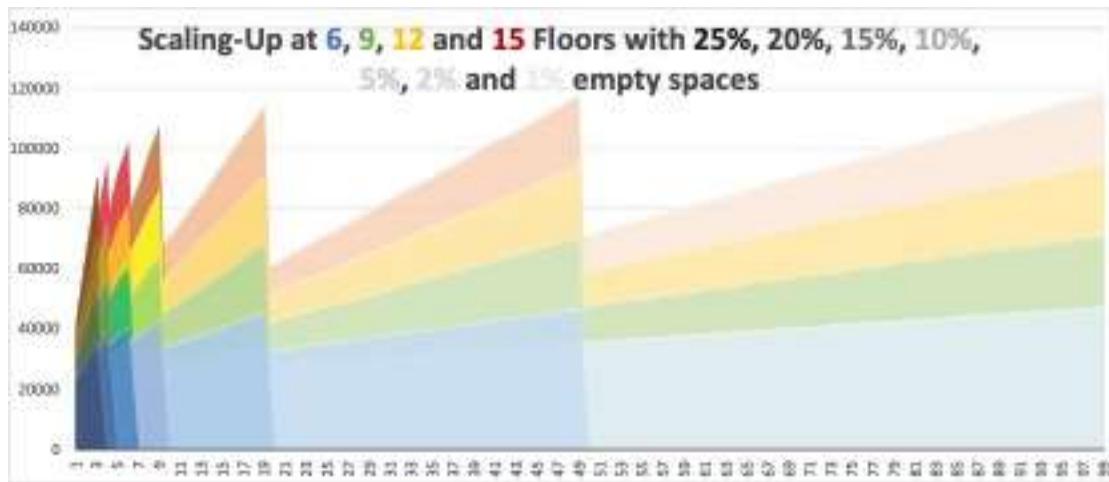
### **3.2.7 The Sliding Puzzle as a Tool for Municipalities to Buy Back Into the Housing Market**

The Sliding Puzzle Model has as one of its main characteristics the ability to provide incremental height and therefore occupation gains where extra housing is built by making strategic use of empty spaces. The image below illustrates how the Sliding Puzzle Model allows for the relocation of existing housing into taller buildings, thus freeing up empty space on which new buildings can be built:



**Figure 13 – How the Sliding Puzzle Model can be used to free up new empty spaces and what target building heights are needed for the multiplication of new empty spaces**

However the Sliding Puzzle Model can be simply used to build new housing, whereby the new buildings have an additional amount of floors that are then owned by the entity leading the redevelopment- *ideally, the Municipality*. The following graph demonstrates the capacity gains that can be obtained using the Sliding Puzzle Model using a virtual environment in which the initial buildings to be redeveloped have 3 floors:



**Figure 14 - The capacity gains that can be attained by using the Sliding Puzzle Model using a virtual environment with the initial building height at 3 floors.**

It is important to note that these capacity gains are the overall capacity gains, but perhaps in this context it's most important to note that the capacity gains come from the extra floors that are built- these extra floors can, for all intents and purposes, be dedicated to public housing. And since the other floors are used for relocating tenants from previous buildings, the Sliding Puzzle Model not only allows for increased occupation, height gains and extra floors- *it would allow for the one and same building to be privately and publicly owned*. If, for example, the option chosen is for the new buildings to have 6 floors, and again referring back to the virtual environment in which the initial buildings have 3 floors, then the new buildings would be, assuming that the original buildings whose tenants are being relocated were privately owned, half privately owned and half publicly owned. The publicly owned floors can then be resold or rented in order to finance the Sliding Puzzle Model program, but they can also be used for social housing initiatives. If achieved, this would allow for less segregated public housing as public housing tenants would be sharing buildings with private owners.

### **3.2.8 Diffuse and Mixed Social Housing – A Solution to Past Limitations**

There is a general consensus surrounding the need for public housing to be mixed-income, however, this component is not enough if it is not paired with, at best, significant measures to promote the participation of inhabitants, and at the very least, not resorting to forced displacement and coercive relocation (Keating, 2000). Past mistakes surrounding social housing can lead us to identify two elements that were, and continue to be central to the ongoing problems associated with public housing projects- *segregation* and *evictions*. Social housing projects are therefore increasingly attempting to incorporate two elements- integration as opposed to segregation (of different income groups, ethnicities, etc.) and participation as opposed to unilateral imposition. But these are merely axioms which can be used to guide public housing initiatives, the question remains- *what mechanisms and instruments can we apply to drive the building of new public housing projects that are integrated and participatory?* This section will discuss the ways in which the Sliding Puzzle Model can be used as part of social housing initiatives that can, in virtue of the Sliding Puzzle Model's intrinsic characteristics, avoid the pitfalls of past social housing programs, namely, segregation and coercion.

The Sliding Puzzle allows for the building of housing regardless of whether the location be peripheral, or not. Since it relies on the relocation of existing tenants from buildings that will then lead to the generation of a new space, all that is needed to start the initial Sliding Puzzle Model cycle is one empty space- and if this space is in a city centre, it will generate new empty spaces and thus new opportunities for building within city centres.

### **3.2.9 Conclusion - City Councils are Selling their Swords:**

One of the disconcerting but constructive conclusions we can reach is that in abstaining from investing in housing in general and in public housing in particular and yet at the same time, not abstaining from exerting legislative control over many aspects that relate to housing, Municipalities are in breach of the social contract. As we discussed extensively, Municipalities have not withdrawn from interacting with the housing market and its regulatory dimension.

In order to shed light on what the new dynamics between Municipalities and housing we propose a metaphor that draws from medieval history.

As is related to us by an expert of the history of the city of Lisbon speaking of Medieval Council policies:

“Another example of abuse of power was related to confiscation of arms, with the warden receiving half of the fine attributed for illegitimate possession, and for this reason weapons were often improperly confiscated. After the weapons were confiscated, they were sold at city fairs under the watch of the clerk, and the proceeds reverted in favour of the Council [then referred to as *Alcaidaria*] (Martins, 2006).”

The imagery invoked by this episode is fascinating. A violent, unruly, European medieval port City where Council officials would patrol the streets with their longswords, constantly getting involved in swordfights during which, if victorious, they would confiscate inhabitants’ swords, only to proceed to sell those very same swords in the market so as to levy funds for the Council, which would then return to the streets, and so on.

But there is an even more interesting image that we can fathom. Imagine if the Council was so short of funds, say, as a result of a financial crisis, that the wardens sold-off their own swords along with the swords they confiscated? If they did, surely the result would be that they soon would become unable to confiscate swords in the first place, and be quickly overcome by medieval thugs of all sorts. The city would be thrown into chaos as a result of the Council’s short-sighted policy.

Though somewhat caricatural, this example is perhaps the best way to illustrate the Lisbon Council’s current housing policy, as it is in the process of an unprecedented sell-off of Municipally-owned buildings, a large part of which could be used for housing. By selling its property seeking short-term investment, it is also limiting its ability to fulfil its duty and solve its inhabitants’ problems, just as the wardens would have done had they sold not only confiscated swords, but their own also. Furthermore, if the housing policy described in the first section of this article were to be implemented, there would be a medium and long-term financial incentive for the Municipality- instead of continuing with its limited and highly flawed housing policies of the past and present, converting a high percentage of its current housing stock into properties that would be rented for prices considerably below the current market values, it would not

only positively affect the market prices overall, it would receive through this programme a steady stream of income that it could then re-invest into purchasing buildings, increasing its stock incrementally, therefore also increasing its capacity to affect the market prices.

Once again, Madden and Marcuse's "In defense of housing – the Politics of Crisis" (2016) sheds some further light on the widely-held concept that public housing represents an unjust burden on taxpayers and that it skews the housing market in a detrimental manner:

"The idea of a meddling state ignores two major facts. The first is quite simple: all of the federal money spent on public housing and other direct subsidies for working-class and poor households pales in comparison to the money spent subsidizing wealthy and middle-class homeowners. Tax expenditures constitute over three-fourths of the government's total housing subsidies, including tax deductions for mortgage payments, deductions on property tax payments, and deferral of capital gains taxes on real estate sales. The vast majority of these credits are claimed by taxpayers in the highest income bracket. 29 If the state has been "interfering" with housing, it has been doing so by substantially lowering the costs of homeownership for people who can already afford it. The idea that what the state has done, it has done in the interests of the poor is standing history on its head.

"Second, and more importantly, the picture of government interference implies a false account of the relationship between housing and the state. It posits the state as an alien intruder into an autonomous housing market. The market is imagined as a rational sphere that operates more efficiently the less the state intervenes, and which would operate perfectly if the state left it alone entirely.

"In fact, housing has always been dependent upon, and integrally tied to, state action. The government is involved in making housing possible in multiple ways. The state plans and builds the streets on which homes are located. It certifies the materials and techniques out of which houses are constructed. It regulates, or directly supplies, the infrastructure for electricity, water, sewage, and transportation upon which housing depends. It provides the means to enforce contracts and define the legal relationships that make possible the buying, selling, producing, and leasing of housing. It enforces the legal sanctity of the home from intrusion and violation. It constructs and protects the property rights that make landlordism and tenancy possible. It influences the extent to which capital is used for housing or diverted from it.

"Government does not intervene in an autonomous private housing market. The state can more accurately be said to privilege some groups or classes over others. It can take a stronger or weaker position regarding particular residential issues. But it does not intervene in an essentially separate sphere. In a sense, all housing is public housing, in that all housing is shaped by public action and depends upon public authority—and indeed, many housing units have received tax benefits or some other form of direct or indirect public subsidy as well. 30 None of this is to suggest that the state has unlimited legitimacy within the sphere of housing, or that state action cannot be criticized. Of course it can, and should. But calls for the state to get out of housing markets are incoherent. The housing system is inextricably tied to the state, law, and public authority. The question

will always be how the state should act towards housing, not whether it should do so” (Madden and Marcuse, 2016, pp. 75-76).

And one might ask, *where would the funding come from?*

“Funding for building new public housing should come from general government revenues, so that it does not become dependent upon luxury development, as with inclusionary zoning. New public housing could also be funded by redirecting the hundreds of millions of public dollars given away as subsidies to corporate real estate. Public housing can become a mechanism not only to provide shelter, but also to relieve stress from elsewhere in the housing system. The more public housing is a desirable, accessible, and affordable option, the less scope exists for exploitation by private landlords. Public housing can also help deal with some of the shortcomings of private homeownership. A proposal for a “right to sell” offered by the British geographer Danny Dorling and others would allow private owners in financial distress to sell their homes to local governments and become secure public tenants, avoiding foreclosure while adding to the public housing stock...

But we should not aim to uncritically adopt twentieth-century public housing, which was created in very different conditions than those that prevail in cities today. The residential public sector reflected particular twentieth century class compromises and political-economic imperatives. It was designed to stabilize the Fordist–Keynesian city: to defuse conflicts, to provide jobs, to facilitate the work of private developers. This model should not be blindly copied. Public housing should be protected and expanded but also radicalized and democratized...” (Madden and Marcuse, 2016, pp. 132-133).

State intervention in the arena of housing is, therefore, not only an inevitable endeavour that the State must, and always does engage in, but furthermore, that it is not so much a question of *whether* the State will intervene in this regard, but rather *how*. The Sliding Puzzle Model as first developed in the primary, original article “The Sliding Puzzle Model for Scaling-Up Cities: How equitable and just urban development and growth initiatives can be made possible by State-enforced mandatory quotas of empty urban spaces” (Silva Jordão, 2018c) can provide a useful contribution towards solving the plethora of challenges that are brought up by the challenge of shaping new social housing programmes and initiatives that are both palatable to an often adverse public opinion, functionally able to tackle the challenges presented, as well as that, perhaps most importantly, avoid to fall into the pitfalls of previous social housing programmes.

### 3.3 The Sliding Puzzle Model- Transforming Sprawled Concave Cities into Compact Convex Cities

This paper is another practical, empirically-based expansion on the Sliding Puzzle Model's possible applications and reverberations. Firstly, this paper introduces a novel theoretical macro-characterisation of urban morphology, concentrating on its skyline- the concept of Concave and Convex cities, the former being cities in which the city centre tends to be of lower height, and the peripheries of a higher height, whilst the convex cities being those in which the city centre tends to have higher verticality in its building's average morphology, whilst the peripheries are low-height. The paper argues that cities should introduce urban planning mechanism and urban development initiatives that favour a more convex shape, as oppose to concave, whilst arguing that the concave disposition generates a whole series of urban planning ills, the most important of which being that of condemning a majority of its inhabitants to living in the periphery and thereafter incurring the risk of also condemning them to a state of high rates of socio-economic exclusion and peripherality.

More specifically, this paper also demonstrates, in detail, manners in which the Sliding Puzzle Model can be used to reverse the cases in which urban peripheries have higher average building heights and sometimes even population density than in the centres. Again, one defines these types of urban morphologies and in particular, their skylines, as being “concave” cities and argues that this morphology is irrational and detrimental in both our analysis pertaining to urbanism, but also political and socio-economic trends. The paper then demonstrates how the Sliding Puzzle Model can be used to intervene incrementally in such cases, that is, in allowing for the incremental verticalization of the city centre, thus progressively turning them into “convex” cities. Paradoxically, the Sliding Puzzle Model can also be used to redevelop certain urban areas so as to make less dense and actually decrease their height.

The paper was accepted and set for publication, however, at the time of writing, the publication has still not gone ahead, and as such, what will be hereby produced is at the same time original as well as the reproduction of the paper submitted and accepted for publication which otherwise would have the citation Silva Jordão, 2020c, with 2020 being the date of submission, acceptance and presentation in the SIIU conference (26-27 November, 2020, Seminário Internacional de Investigação em Urbanismo).

#### 3.3.1 Hong Kong – The Paradigm for Verticality (?)



**Image 48 - Bamboo scaffolding in Hong Kong (The Guardian, 2018d, picture is from 2008)**

Hong Kong's use of bamboo scaffolding is the perfect symbol for its capacity to complement modernity with tradition and local environmental and economic specificities.



**Image 49 - Bamboo scaffolding in Hong Kong (The Guardian, 2018d, picture is from 2009)**

In places such as Hong-Kong, where available building space is scarce, the high though the building of high-rise buildings reaches very impressive levels.



**Image 50 - A bird's-eye view of the Hong Kong Skyline**

Hong Kong has a somewhat artificial scarcity of land as a result of overly restrictive land use policies- This also goes to show that Hong Kong's impressive verticalization has been led by privates seeking a profit from their hefty investments (into land purchases) but that this also generates considerable hardships for Hong-Kong's citizens. It remains to be seen what model and under what conditions central and local authorities can develop mechanisms to verticalize to the extent that private initiative has done over the last decades. It is, in this context, somewhat unsurprising that Hong Kong is planning on building an artificial island to solve what it sees as a shortage of land.

Though the reason as to why Hong Kong has reached such levels of verticality is more linked to its very specific planning regulations, namely, its lax taxation policy and its subsequent need sell land at higher prices in order to fund its government, it can be used as a baseline for the verticality that can be reached whilst still maintaining a functional, competitive, global city that is considered by many as a socio-economic example to be followed.

### **3.3.2 The Paris Paradox – The Concave City**

Paris, in stark contrast to Hong Kong, is characterised by its highly protected city centre, which leads to more inflexible central urban development as well as stringent building height restrictions. Together with its highly problematic peripheries, often marred by socio-economic exclusion, crime and even sometimes riots and uprisings, Paris' urban morphology is a paradigmatic case of a concave city. The Tour Montparnasse is a notable exception in which height restrictions were suspended. However, for the most part, central Paris is characterized for low-height as a result of strict height restrictions. This means that a business centre had to be built in La Défense, an immediate periphery of Paris, rather than its centre, as is common place in other cities such as London and New York.

In Paris, strict building height restrictions remain. The Tour Montparnasse was a notable exception in which height restrictions were suspended. However, for the most part, central Paris is characterized for low-height as a result of strict height restrictions.

This means that a business centre had to be built in La Défense, an immediate periphery of Paris, rather than its centre, as is common place in other cities such as London and New York. One of the main reasons behind the height-restriction is an attempt to preserve the aesthetic value of Paris' historical centre and prevent it from looking like another indistinguishable global city. It is therefore highly paradoxical, to not say highly ironic, that its most easily recognizable building has been, for some time, a construction which was supposed to be temporary, and whose sole purpose was to demonstrate the marvels of modern engineering and how high structures could now become- the Eiffel Tower. Though the public reception was quite negative, Parisians learnt to love the Eiffel Tower as its symbolic, and subsequently, economic value, became more and more obvious over time.



**Image 51 - The View from the Top of the Tour Montparnasse**



**Image 52 - Another angle of the Tour Montparnasse**

But let's imagine for a moment that Paris' height restrictions were to be lifted. How could one possibly scale-up its city centre without causing massive disruptions to its socio-economic fabric? The Sliding Puzzle Model would allow for an incremental scaling-up, namely of the housing in the centre of Paris, which would allow for more

people to live near the places where they work and enjoy themselves, nearer to their favourite cultural hubs and the city's attractions, while also allowing for the land values to rise further. Any attempt to do so without a tool such as the Sliding Puzzle Model would generally entail the displacement of inhabitants living in the centre to the periphery, with the possible but not certain possibility of moving them back in when the redevelopment, i.e. the building of more dense and taller housing, is complete.

As it stands today, Paris's skyline is somewhat concave- its centre is low while its surroundings rise up and overlook the core with both admiration and envy. One might assume that a concave skyline is somewhat indicative of dysfunctional urban development. If the centre is vibrant, varied, dense and vertical, it follows that a lot of people will be able to travel and reach their destinations more efficiently given that both their starting point and destination are in the centre. This certainly seems to be the expected, natural course for a city to take. When compared to a large number of people having to travel from the suburb to the centre, or even possibly from one suburb to another, having a bustling city centre that can absorb a large part of the city's activities certainly seems like the better option. And even though many cities follow this logic, there are also many exceptions, and Paris is perhaps one of the most notable exceptions.

Paris' Skyline has for a long time been at the centre of debates which are both political and aesthetic. The Tour Montparnasse and the Eiffel Tower are two high-rise constructions which are still contested and disliked amongst many Parisians. However, the building of the *Tour Triangle* after a lengthy legal dispute regarding its building permit, won by the constructors in 2015, represents a moment of change and will surely be the pivot around which future debates regarding building height will be had.

### **3.3.3 The New York Paradigm – The Convex City**

Jeffrey Meikle describes early 20<sup>th</sup> century New York in his book *Postcard America* as “Although exhibiting a pleasing irregularity, the skyline forms nearly a bell curve with a right-of-centre focal point established by the adjacent towers of the Bank of Manhattan Trust Building and the Irving Trust Company Building” (Meikle, 2016, unknown page number). There is however, a gap in New York City's Skyline but it also is slowly but surely being filled with high-rise construction.

But we can also see other dynamics at play. In some cities, as would be expected, the city centres, i.e. those places which are most coveted by businesses and inhabitants alike, are the places in which the buildings rise the highest. These cities' skylines are shaped like the Bell Curve. And New York has had a Bell Curve skyline for a while- Jeffrey Meikle describes early 20<sup>th</sup> century New York in his book *Postcard America* as “Although exhibiting a pleasing irregularity, the skyline forms nearly a bell curve with a right-of-centre focal point established by the adjacent towers of the Bank of Manhattan Trust Building and the Irving Trust Company Building” (Meikle, 2016, unknown page number). There is however, a gap in New York City's Skyline (see Cheddar Originals, 2018) but it also is slowly but surely being filled with high-rise construction.

An excellent example of this is New York City's Manhattan. As the value of the land rises, so too does the need to maximize the use of space by building ever-taller buildings become evident. The presence of attributes deemed to be of high urban value, such as Central Park, or a direct view of the waterfront, also tends to increase density and building height.



**Image 53 - The Manhattan Skyline as seen from an elevated view from the general direction of Central Park**



**Image 54 - A bird's-eye view of the Manhattan Skyline and beyond**



**Image 55 - Another view of the Manhattan skyline with Central Park in the middle**



**Image 56 - A vertical view of Manhattan**



**Image 57 - Manhattan view pointed at its South bank**



**Image 58 - Highest House Price in Manhattan (Central Park, with view to the lake), Trulia, 2018**



Image 59 - House Price, Greepoint, Trulia, 2018



Image 60 - House Prices in Greenwich, Trulia, 2018

However, in demonstrating that scaling-up can, under the right circumstances, can lead to higher land values, we have not demonstrated that it is desirable. What is desirable, however, is making it possible for more people to live within walking distance of the areas which they find attractive, either because of economic, social or cultural reasons. **Increasing the housing stock within walking distance of Central Business Districts, cultural hubs and other places of interest therefore becomes a central objective for urbanists desiring to make cities more attractive, valuable and sustainable.**

But perhaps the main benefit of increased density, namely the synergy arising from the presence of high levels of expertise in urban areas which also make cities excellent locations for the sharing of information and skills (Quigley, 2009) in particular because high levels of proximity result in more employment opportunities (Rosenthal and Strange, 2001).

Increasing the housing stock within relative proximity of Central Business Districts, cultural hubs and other places of economic activity therefore becomes a central objective for urbanists desiring to make cities more attractive, valuable and sustainable.

Some authors have depicted at the increasing vertical development of cities and constructions overall as the perfect analogy for the increasingly deep socio-economic

divisions of modernity (Graham, 2016), but less attention has been paid, directly, at how vertical development in localities of high economic interest can actually help to bridge class divisions and mitigate economic inequality.

It is interesting to see how deep the subway system is beneath New York, along with all other underground infrastructure, and see how it compares to the average height of buildings in a certain area. When compared to the tallest skyscrapers, which stand at a range of between 600 to 1550 feet, the lowest subway station is 180 feet deep, 191<sup>st</sup> Street Station.

### 3.3.4 Paths Towards Convex Cities

In many ways, cities tend to be convex- not necessarily in the shape of the skyline as reflecting the average building height, but certainly in terms of the occupation and use, as seen by LSE's Cities Urban Age Programme's fascinating city density maps (London School of Economics, 2018):

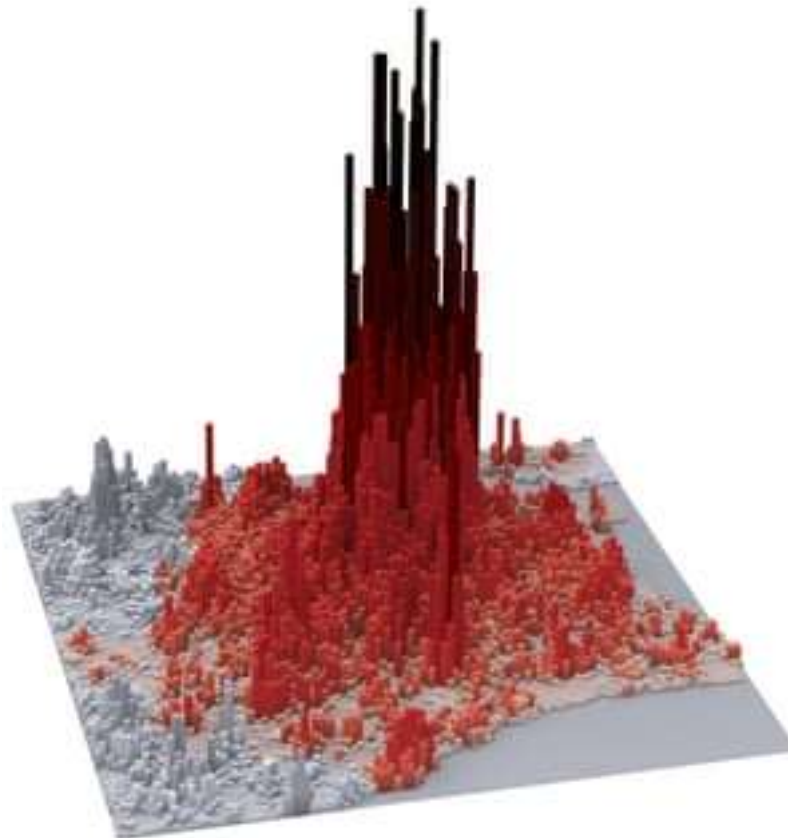
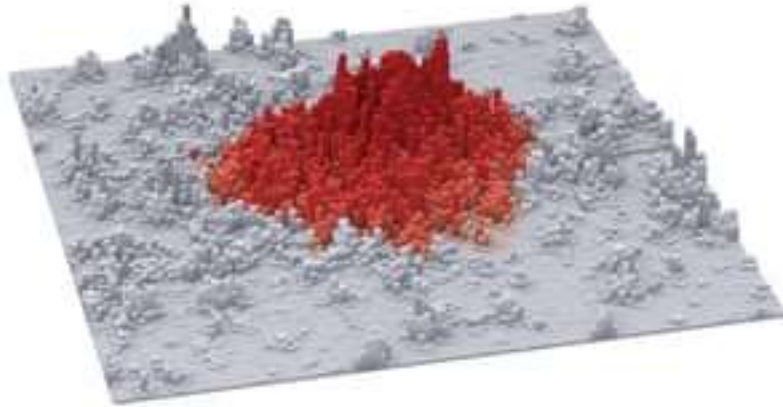
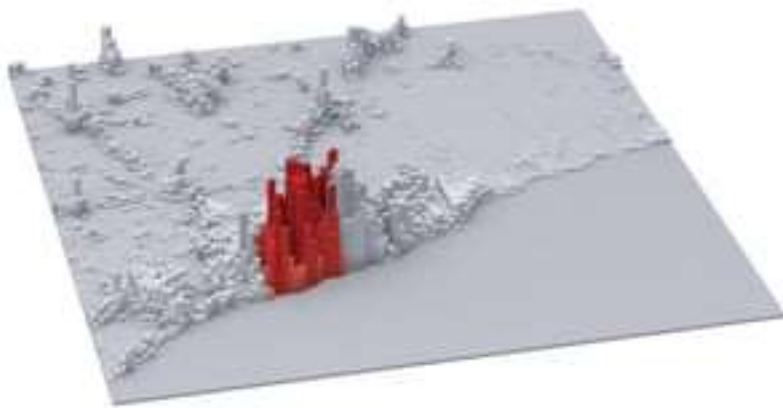


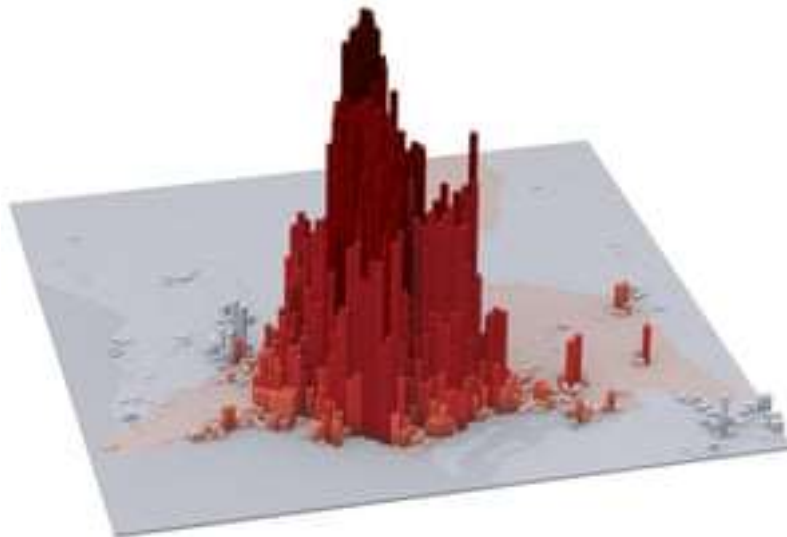
Image 61 – Shanghai's peak density per km/2 is 77,726



**Image 62 – London’s peak density is 18,769 per km/2**



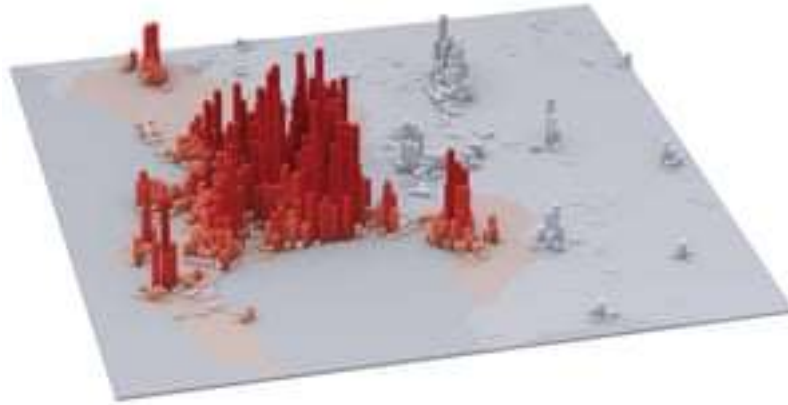
**Image 63 - Accra’s peak density is 14,507 per km/2**



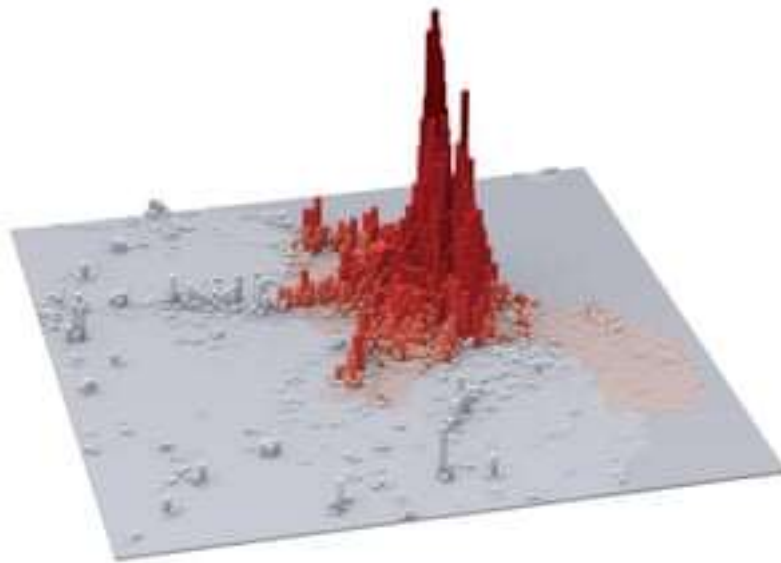
**Image 64 - Karachi’s peak density is 50,084 per km/2**



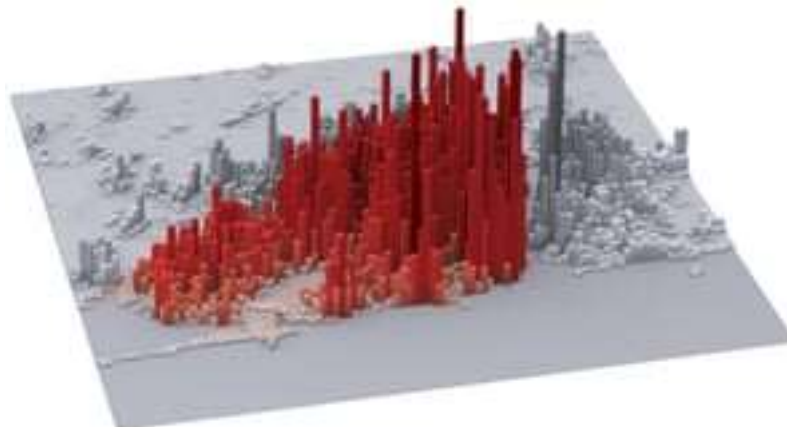
**Image 65 - Cairo's peak density is 153,606 per km/2**



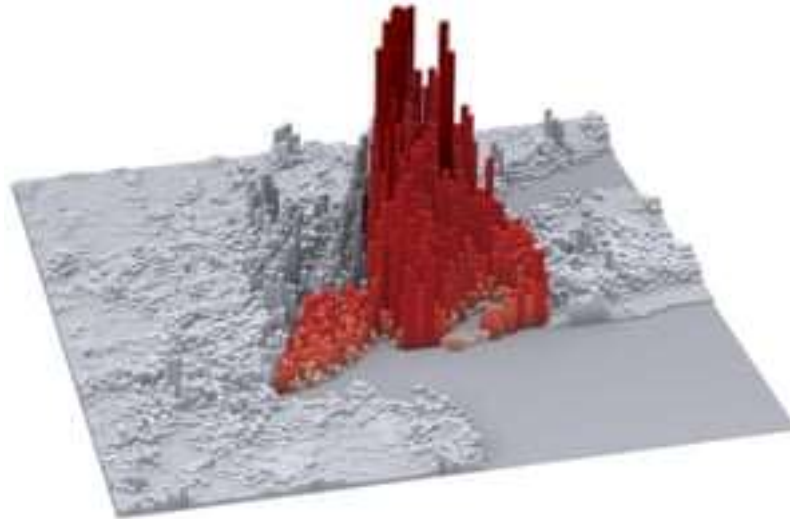
**Image 66 - Cape Town's peak density is 24,794 per km/2**



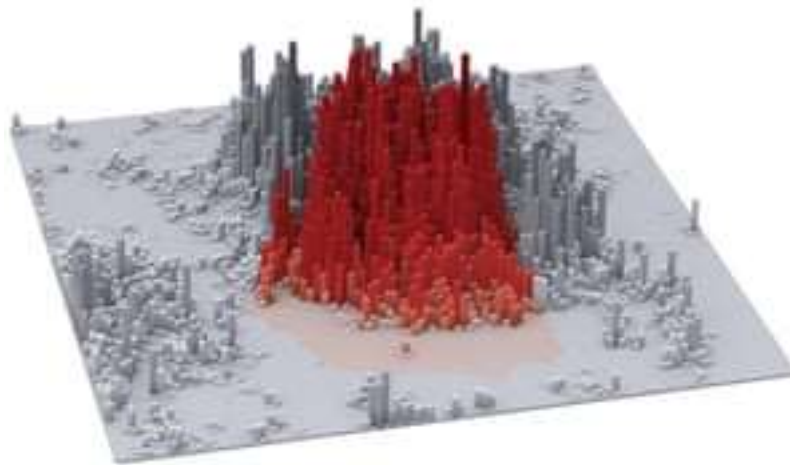
**Image 67 - Dar es Salaam has a peak density of 42,241 per km/2**



**Image 68 - Rio de Janeiro's peak density is of 32,416 per km/2**



**Image 69 - New York has a peak density of 38,242 per km/2**



**Image 70 - Mexico City's peak density is of 31,598 per km/2**

These images shed light on the vastly different configurations that cities have in terms of their population density. Some are more diffuse, some less, however, the vast majority point towards a tendency of central areas to be more densely populated than the peripheries. We can ask the question- is this data sufficient to say that is the natural disposition of cities to have population converge towards the centre?

### **3.3.5 Burk al-Babas - Incremental urban development (or lack thereof)**

If we refer to Makido et al's concept of complexity and how it makes for rises in CO<sup>2</sup> emissions, (2018) we can stipulate that one of the main advantages of the Sliding Puzzle Model is that it allows for incremental scaling-up and development. There have been several urban development projects that have failed spectacularly precisely because its original plan and overall attitude do not take the importance and benefits of incremental urban development into account. These could fail because of a number of reasons- the design could be flawed from the beginning, and the lack of incrementality could ultimately mean that essential flaws can only be identified when it's already too late. It could also be that lack of incrementality, which in its extreme form can sometimes take the form of pure megalomaniacal madness, means that financial issues arise due to the grand scale of the project. And one benefit of building incrementally is

that it promotes upgrading, developing and expanding pre-existing urban bodies over building new, detached urban centres that could very well never really attract the people and economic activity that is needed to make them live and flourish.

There is one example which seems to fail profoundly in all of these three dimensions so as to provide us with the ultimate case study of urban planning hubris- as well as a real testament to the need of instruments such as the Sliding Puzzle Model- Burk al Babas, a ghost town of some three-hundred Disney-style mini-castles built in Turkey, all at once, which became abandoned after its developed went bankrupt. Though it was at first seen as a symbol for Turkey's economic woes of 2018 and 2019 (The Guardian, 2019c) it will surely come to be seen first and foremost as a paradigmatic case of the failure that will almost certainly ensue if a new town is founded without the necessary incremental development and the foundational aspects of what a town needs in the first place. Though its failure is seen in an economic and financial light, it will inevitably be come to be seen as an urban failure much more than an economic one.



Image 71 - Abandoned Dis(ney)topia in Turkey (The Guardian, 2019c).

### 3.3.6 Conclusion- Improving Verticality

Our public space tends to be two dimensional and is usually found at ground level. Vertical space tends to be vertical, so for example if one is walking around at a Central Business District, one can move around horizontally, but can only enter most buildings if one has any business there, i.e., its access is highly conditioned. So the key to achieving convex cities would be to have vertical public space, whereby accessible spaces are not only found at ground level, but rather when one can enjoy all the space, whether horizontal or vertical, thoroughly. This would be nearer to a prime usage of space, whereby space becomes more concentrated and readily accessible, instead of the dominant model of present which generates horizontal sprawl- sprawl is inevitable, it is only a matter of reducing it, and reducing it means spreading it out across horizontal and vertical dimensions.

There are some paradigmatic examples, though they are few and far between. In London, whereas going to the top of the Shard costs around 27 pounds, while going to the top of the Walkie Talkie Sky Garden requires a reservation in advance, a freely accessible “sky garden” at Fen Court marks what could be one of the first notorious public spaces atop a sky-scraper (Guardian, 2019a). High-rises are even appearing in small towns, as is the case of the small Danish town of Brande (The Guardian, 2019b).



**Image 72 - The Fen Court rooftop with the "Walkie Talkie" skyscraper in the background (The Guardian, 2019a).**

In Lisbon, the “*miradouros*”, or ‘golden view’ are an integral part of the city’s cultural life, they are public spaces in which all sectors of society congregate to chat, drink, smoke and listen to music, and usually come in the form of small parks atop of one of Lisbon’s many hills- though even these don’t seem to be safe from the onslaught of privatization. In late 2018 the ‘Adamastor’ or *Miradouro de Santa-Catarina* was closed off and fears that it could be privatized quickly surfaced as the municipality announced radical measures in order to stop what they saw as recurrent problems of vandalism, drug traffic and vagrancy. So not only are these public spaces not free from privatization, the *miradouros* are the kind of access to verticality which is only available to cities with hills, which is not always the case.

But promoting vertical public space is not only about being able to access nice views- it is about shaping the very form of the city and making it more efficient, compact and just. While we can criticize urban sprawl and propose ways with which to

reduce or mitigate it, **it would be perhaps more rational to say that in the age of urbanization, it is unrealistic to stop or reduce urban sprawl; rather, what we can do is redirect urban sprawl that is usually horizontal *upwards*, or if you prefer, *vertically*.**

## **4 SIMULATING DIFFERENT SLIDING PUZZLE MODEL SCENARIOS USING VIRTUAL ENVIRONMENTS**

## 4.1 Logic of the Exercise and Scope of the Virtual Environments

Thus far, this study and the peer-reviewed papers inserted herein have attempted to demonstrate the basic logic behind the Sliding Puzzle using a basic, initial set of circumstances, namely, a 1km Squared virtual urban space with one hundred blocks. One then calculated what increments can be gained using the most basic form of the Sliding Puzzle Model, namely, consecutive single cycles of the Sliding Puzzle Model, and this simple sequence applied to different scenarios that differ amongst themselves in two variables- four varying target building heights, (six, nine, twelve and fifteen floors) and seven varying initial percentages of empty space (25%, 20%, 10%, 5%, 2% and 1%), which altogether make for twenty-eight different scenarios. The results for what increments in occupancy capacity can be consulted in Silva Jordão, 2018c, and Silva Jordão, 2020b. The increments are, as would be expected due to the repetition of the same single Sliding Puzzle Cycles in sequences, perfectly linear, and stop at the so-called “point of full reconstruction”, at which the empty space has travelled and therefore left redeveloped building in its path along all existing blocks.

The Sliding Puzzle however can be applied in a variety of different scenarios that can have within themselves different combinations of initial percentage of empty space, different percentage of empty space along different cycles and varying target building heights. This section will demonstrate some of the possible variations, producing different scenarios that have different use cases and vastly different results. It will remain, within this section as a purely abstract set of exercises whereby different variables will be changed so as to represent not only different possibilities but also strictly different depending on the scenario.

One of the main objectives is to demonstrate that the Sliding Puzzle Model can indeed be used not only to augment housing capacity, as the calculations and tables that have been shown beforehand tend to demonstrate, but that it can be used to amass empty space, clear space for a road or highway as well as to simply redevelop diverse urban areas in an incremental manner. It also demonstrates that different assortments and quantity of empty spaces may be found at the beginning of a Sliding Puzzle Model exercise or that indeed the Sliding Puzzle Model itself can be used to free up more empty space and that this can be done with or without achieving actual housing capacity gains.

## 4.2 Abbreviations and Descriptions of the Ensuing Seven Virtual Environment Scenarios

The complexity of the different variations and combinations makes it necessary to develop a system of abbreviations, codes and jargon. Let us first list some useful abbreviations and codes that we will then apply to describe the different scenarios that one has hereby developed.

- SPM - Sliding Puzzle Model
- SPC - Sliding Puzzle Cycle
- SPS - Sliding Puzzle Scenario
- SPMI Exercise – Any attempt to play the Sliding Puzzle Model with specific starting variables such as percentage or quantity of initial empty space or initial building heights
- SPMI V.Exercise – An actual virtual environment of a specific SPMI Exercise (as described above)
- 1% 0s (x%0s) – 1 is the initial percentage of Empty space in a particular Exercise, and Empty space is referred to as the number Zero and s for space, therefore, “0s”.
- 3/6 – Initial building height is 3 floors, target building height is 6 floors,
- cg- there is capacity gain in the cycle
- ncg- there is no capacity gain in the cycle
- 3/15– Initial building height is 3 floors, target building height is 15 floors
- dis0 – This means that the Empty space being interacted with and potentially amassed is dispersed.
- amass0 – This means that the Empty space is being amassed in some way. It might be in a line (to facilitate the building of roads, railways or heavy duty sanitation work for example) or simply concentrated across various blocks so as to perhaps allow for the building of a bigger block or larger construction (such as a school, university, police station, etc.).
- 5% amass0 – Initial conditions are of 5% empty space and that empty space is concentrated.
- 2C – Two Sliding Puzzle Cycles
- Takeover – the redevelopment takes over progressively and infectiously, representing the potential usurpation of the Sliding Puzzle Model by ferocious capitalistic drives and interest.

*So let's take one file name and decrypt it-*

“SPMI V.Exercise 2Cx3sc: 1% 0s: 3/6 cg - 3/15 ncg dis0 3/6 cg- 3/15 ncg amass0- 3/15 ncg amass0 3/9&3/12”

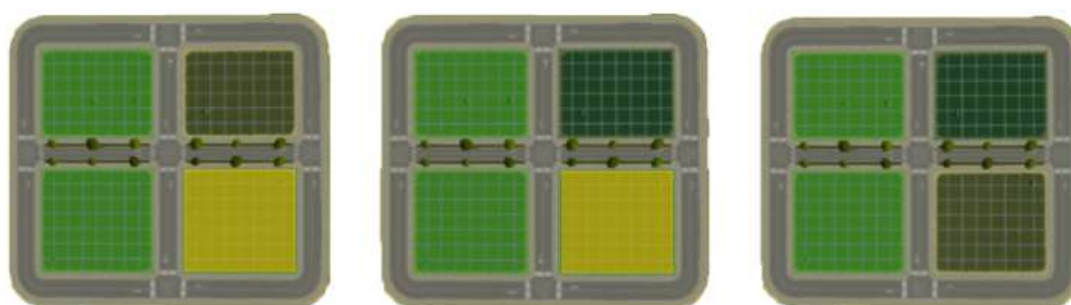
So the Format is (Number of Cycles)x(Number of Scenarios): (Percentage of Empty Space): (Before and After Floor Ratio) (is there capacity gain?) (is empty space dispersed or not)

Any attempt to play the Sliding Puzzle Model with specific starting variables such as percentage or quantity of initial empty space or initial building heights. In this case the variables are that this exercise encompasses 2 Cycles (C) played out across three different scenarios (3sc), with an initial percentage of Empty space that is of 1% in all cases.

### 4.3 One Percent Initial Empty Space and Height Gain from 3 to 6 Floors with Capacity Gain

In this first scenario, coded **1% 0s 3/6 cg**, the initial percentage of empty space is 1% and the initial buildings are set at 3 floors, and there will be two cycles whereby each time one building of 3 floors will be replaced by one of 6 floors. If only one set of these numbers is provided, i.e. “3/6”, it means that the ratio of old to new building height is always the same.

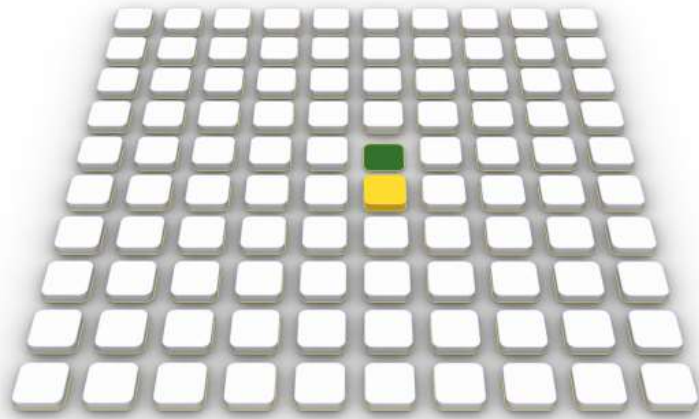
This is the most basic and yet most important Sliding Puzzle Model exercise, and the first cycle of this two-cycle exercise has been consistently used in this Thesis to demonstrate the fundamental logic of the Sliding Puzzle Model. This following image represents one Sliding Puzzle Model Cycle and has been used before in this Thesis- for clarity, one will mark the target for redevelopment in yellow.



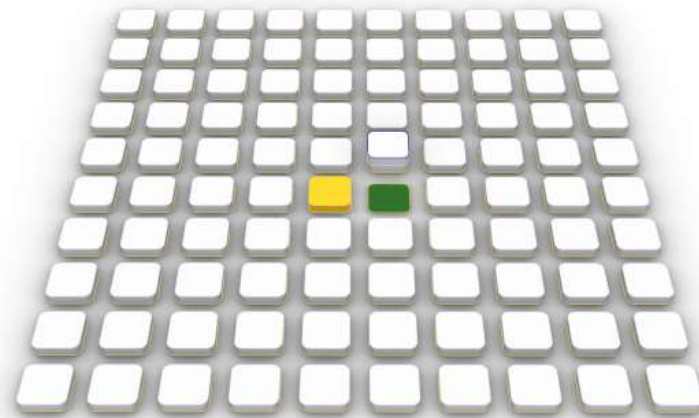
**Image 73 - One Sliding Puzzle Model Cycle, this time with the allotment targeted for redevelopment marked in yellow**

In the first image, the square on the top right is empty- that is our initial empty space, denoted in the code for this particular exercise as “0s”, that is, zero space, which is empty space. The square on the bottom right is marked in yellow as it is now being targeted for redevelopment. On the second image, the new building on the top right, now relocating the function and inhabitants that used to be located on the bottom right, now exists at the same time as the old building. On the third image, the original building has been vacated and demolished and is now the location of the new empty space, which has effectively moved from top right to bottom right. The Virtual Environment exercises that follow skip the transition phase during which there is no empty space, relative to the time frame that it takes to construct a new building, and show at every step the final result of a building being relocated. In some cases, the building and its functions is simply relocated, that is to say, built with the same height elsewhere, denoted as “no capacity gain” or “ncg”, and in some cases, a new taller building is built, and as it has more capacity, this process is denoted as “capacity gain” or simply “cg”.

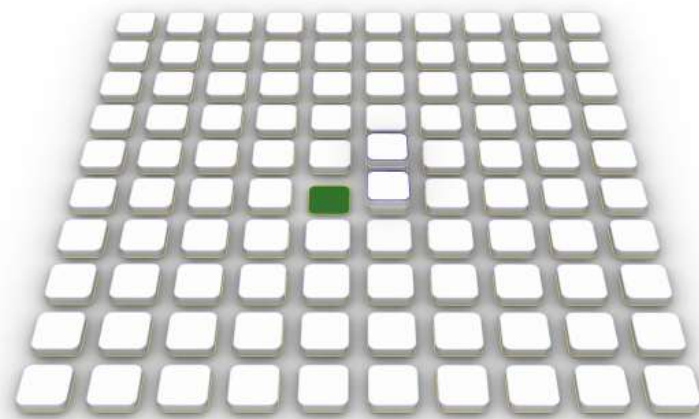
The following example demonstrates two Sliding Puzzle Model cycles, whereby each cycle adds 3 floors of capacity, with the initial buildings targeted for redevelopment all standing at 3 floors, which will be the initial starting point for all following Virtual Environment exercises. As a result of the two cycles, two buildings are demolished, two new buildings are built, and an empty space remains at the end of the process so that it can recommence. This scenario would be suitable for a situation in which a low or moderate rate of housing capacity augmentation is desired, with the rate of growth being steady across cycles.



**Image 74 - One empty space in green, with one target building in yellow**



**Image 75 - One empty space in green, with one target building in yellow, with one building already redeveloped and standing at 6 floors**



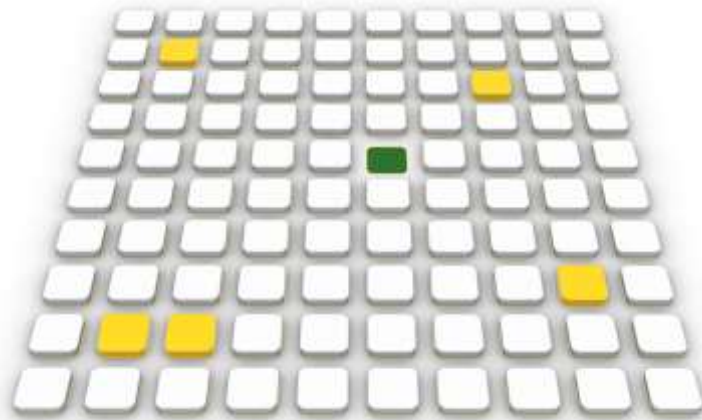
**Image 76 - One empty space in green, with two buildings already redeveloped and standing at 6 floors**

#### **4.4 One Percent Initial Empty Space and Height Gain from 3 to 15 Floors with No Capacity Gain Followed by Height Gain from 3 to 6 Floors with Capacity Gain with Dispersed Empty Space**

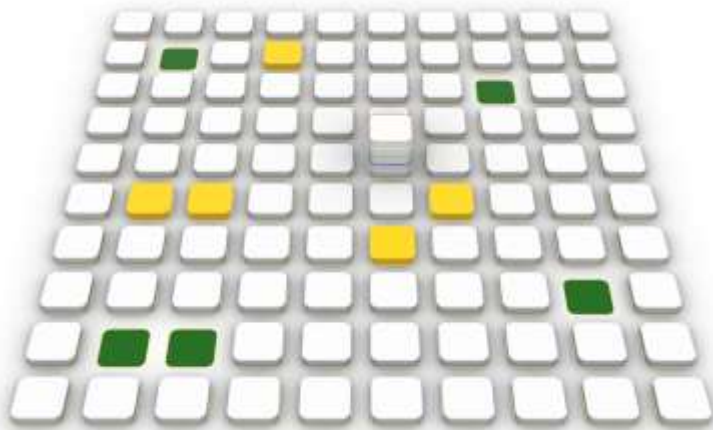
In the second scenario, coded **1% 0s 3/15 ncg 3/6 cg dis0**, the initial percentage of empty space is 1% and the initial building has 3 floors, the target building has 15 floors, but there is no capacity gain (ncg) and the empty space (0) that is produced as a result is dispersed (dis). The second cycle starts with a different target building height, which will be 3/6 (whereas in the first it was 3/15) and produces capacity gain (cg).

This scenario takes the logic of the Sliding Puzzle Model slightly further. It shows perhaps a more realistic situation whereby a certain area that needs a lot of redevelopment and some degree of capacity gains also lacks the amount of empty space that would otherwise be needed if one were to apply the logic of the first exercise, shown previously. If indeed one remains confined by the concept that each cycle can only have as a goal the relocation of one building from one place to another whilst achieving an augmentation of capacity, then the initial amount of empty space gets replicated across cycles, which is to say, it remains the same. However it may be that the initial cycle or cycles of a Sliding Puzzle Model exercise achieve an augmentation of the amount of empty space rather than just an augmentation of height and capacity. In this manner, one can either commence the new cycle with more empty space, therefore augmenting the amount of buildings one can redevelop and hence the scope of the redevelopment drive, or start new individual cycles with each of the newly acquired empty spaces.

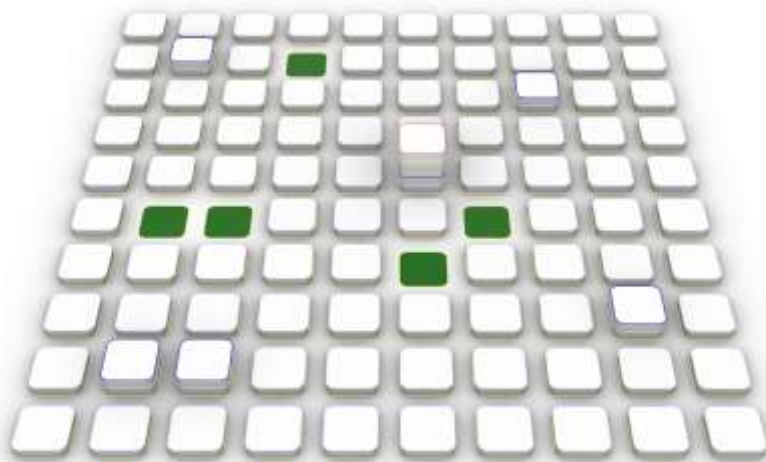
In the following exercise, one starts, much like the exercise before, with an initial single empty space. However, one will target five, not one buildings for reconstruction. In doing so, we will relocate five buildings to the location of the initial empty space, building a new 15 floor building which relocates the 5 buildings targeted for redevelopment without gaining capacity but now generating 5 new empty spaces. The second cycle now begins with 5 empty spaces, and this new cycle can then redevelop 5 buildings targeted for redevelopment with a capacity gain of 2 floors, buildings new buildings of 6 floors. In this particular example, when calculating the effect on housing capacity, one must now take into account that one started with one empty space, and now have 5- this is referred to as “initial loss of capacity” throughout the Thesis.



**Image 77 - One empty space in green, with five target buildings in yellow**



**Image 78 - Five empty space in green, with five target buildings in yellow and one redeveloped building with 15 floors**



**Image 79 - Five empty space in green and five redeveloped buildings with 6 floors and *one* redeveloped building with 15 floors**

Let us now calculate how this exercise would affect the housing capacity within this Virtual Environment. Let us first remember the initial conditions of the simulation as well as the simulation of capacity gains when augmenting to 6 and 15 floors.

Initial Simulation Conditions	
Total Area	1 km <sup>2</sup>
Total Blocks/km <sup>2</sup>	100
Block Size (m <sup>2</sup> )	3600
Buildings per Block	8
Floors per building	3
Occupants per Floor	10
Sidewalk + road width (m)	30
Starting Population	24000

**Table 9 - Initial Simulation Conditions**

Density per km <sup>2</sup> depending on floor numbers per building										
Floors/Building	3	6	9	12	15	18	21	24	27	30
Population/km <sup>2</sup>	24000	48000	72000	96000	120000	144000	168000	192000	216000	240000
People/building	30	60	90	120	150	180	210	240	270	300
People/block	240	480	720	960	1200	1440	1680	1920	2160	2400

**Table 10 - Occupation capacity by number of floors**

Simulation of rate of capacity gains with new buildings at 6 floors							
% of Empty Blocks	1.00%	2.00%	5.00%	10.00%	15.00%	20.00%	25.00%
Number of empty blocks	1	2	5	10	15	20	25
Initial Loss of Capacity	240	480	1200	2400	3600	4800	6000
Number of cycles until full reconstruction	99	49	19	9	5.66	4	3
Adjusted Population	23760	23520	22800	21600	20400	19200	18000
Adjusted Population after Full Reconstruction (with empty blocks remaining)	47520	47040	45600	43200	40776	38400	36000
Net Gain	23760	23520	22800	21600	20376	19200	18000
Net Gain per cycle	240	480	1200	2400	3600	4800	6000
Net Gain per cycle %	1.01%	2.04%	5.26%	11.11%	17.65%	25.00%	33.33%

**Table 11 - Simulation of capacity gains with new buildings at 6 floors**

We can ascertain that in the beginning, we have one empty space, a capacity of 23,760, which is the initial 24,000 with the initial loss of capacity subtracting the 240 capacity that each block has. The first cycle relocates five buildings into one new building of 15 floors- the capacity, therefore, remains the same. We now however have five empty spaces, which means the second cycle can redevelop five new buildings. These five buildings targeted for redevelopment will be redeveloped using the five empty spaces, and because the initial objective of augmenting the amount of empty space to work with has been achieved, one can now redevelop in a more moderate fashion, by building new buildings that sit at 6 floors. By looking at the table relating to housing capacity gains with buildings with 6 floors, we can see that the net gain per cycle when the initial amount of empty space is 5% (5 allotments of empty space, as our Virtual Environment consists of 100 allotments) is of 1200, which is simply 5 x 240, as we have merely doubled the capacity of five buildings, doubling their height from 3 to 6 floors. We therefore end the exercise with a new housing capacity of 24,960. 89 buildings remain untouched and still stand at 3 floors, and 11 buildings or allotments

were affected in the process. There are overall less buildings, starting at 99 buildings, and now standing at 95. The net result of this exercise is that we augmented housing capacity of from 23,760 to 24,960 whilst augmenting the amount of empty space from 1% to 5% or from 1 empty allotment to 5 empty allotments.

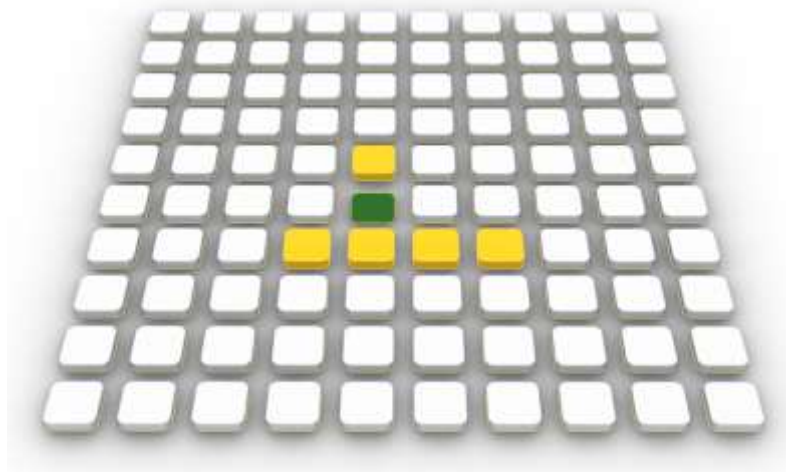
## **4.5 One Percent Initial Empty Space with Height Gain from 3 to 15 Floors with No Capacity Gain Seeking to Amass Empty Space**

In the third scenario, coded **1% 0s 3/15 ncg amass0**, the initial percentage of empty space is 1% and the building starts at 3 floors and the target is 15 floors, but there is no capacity gain (ncg) and the Empty space (0) is “amassed” which means it is concentrated. It might be in a line or simply concentrated across various blocks so as to perhaps allow for the building of a bigger block or larger construction.

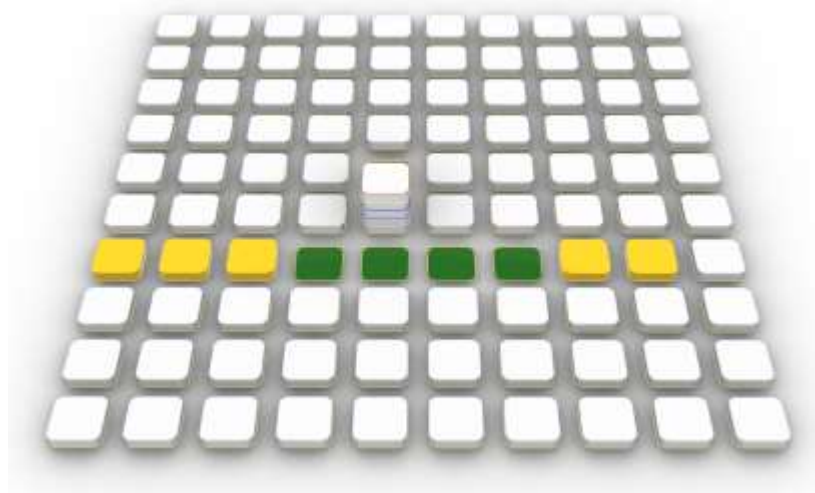
This scenario is suitable for a scenario in which it is not so much lack of housing capacity, but rather lack of space that is the issue- the objective therefore is not to augment the housing capacity, but to augment the capacity that a certain area has to accommodate for future development projects. This exercise seeks therefore to augment the adaptability rather than the housing capacity as such.

One of the easy conclusions to draw from this Virtual Environment exercise is that in scenarios in which one wishes to open up space in order to build large infrastructure in an area without totally displacing its current inhabitants, one then has to concede that in order to do so in an expedient manner, one or several buildings that are of a superior height to those already present might have to be built, which might then lead us to the conclusion that in certain scenarios, freeing up empty space might lead to the upsetting of the skyline of a specific urban area. This is relevant for a scenario such as the one that this Virtual Environment predicates itself one, that is, a stable, initial starting point where all buildings are of similar height. One could imagine another scenario in which more empty space is also necessary, but instead of having to build one or several buildings that are taller than those in the area, one could perhaps find one or several buildings that are of lesser height than those surrounding them, in which case they might themselves be targeted for redevelopment on account of their low height, as using the location of these lesser tall buildings to build future taller buildings that relocate the inhabitants of the allotments one wants to free up will provoke less drastic changes to the skyline. General and specific insights on how the Sliding Puzzle Model may affect cities’ skylines can be found in the paper “The Sliding Puzzle Model - Transforming Sprawled Concave Cities into Compact Convex Cities” (Silva Jordão, 2020c).

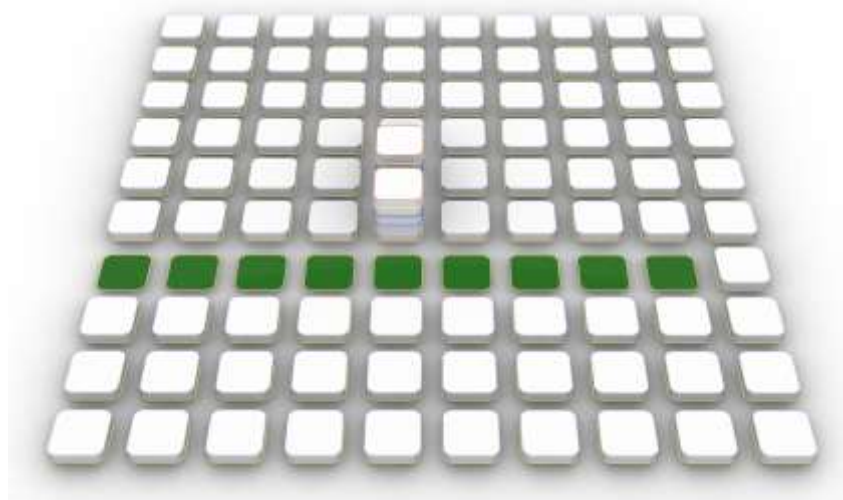
One can think of several variations of these scenarios, namely one in which the need for more empty space as well as the need to drastically augment the height of certain buildings might actually converge- after all, this scenario and exercise may be continued in subsequent Sliding Puzzle Model cycles in such a manner that leads to an augmentation of both empty space as well as capacity, which represents an augmentation of both housing (or other) capacity as well as an augmentation in the adaptability and potential for growth of a certain urban area.



**Image 80 – One empty space in green with five target buildings in yellow**



**Image 81 - Five empty spaces in green (one is hidden behind redeveloped building) with five target buildings in yellow and one redeveloped building with 15 floors**



**Image 82 - Nine empty spaces in green and two redeveloped buildings with 15 floors**

This is a seminal exercise for within the logic and development of the Sliding Puzzle Model as it demonstrates can be used in a variety of ways and for a variety of purposes but most importantly, it demonstrates that it can be used to amass empty space that itself then can be used to build anything. Although, as we have seen, it can be used to increase housing capacity, which is often an urgent need, so too are a whole plethora of other redevelopment initiatives. For example, maybe it is necessary to install a key public utility building in an already dense area. Or perhaps a whole block, or more, needs to be bulldozed to make way for a highway. In this scenario, the Sliding Puzzle Model can be used to “move the buildings around”. But what really makes the Sliding Puzzle Model stand apart is that the logic behind is not always that buildings are being interacted with and increased in overall capacity, as in some cases, it is rather that the empty space is being slowly and gradually amassed. So whereas conventional planning theory concentrates on the built environment, the Sliding Puzzle Model unveils another layer of potential inherent to empty space itself. In other words, the Sliding Puzzle Model is what happens when an urban planner looks into the void, but instead of emptiness and desolation, sees resources and opportunities.

And why would amassing empty space be the goal? Mainly because key development targets can only be met and strategic targets achieved if empty space is available- *and very often, this empty strategic empty space is the least available where it is most necessary*. Whether for building orthodox public utilities such as parks, schools, hospitals, police stations, etc., but also in order to integrate new inventions and utilities that have not been either invented or widely introduced yet.

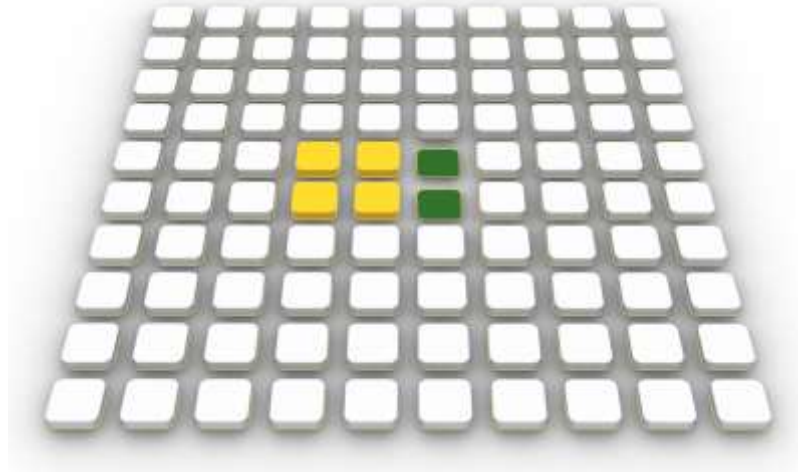
## **4.6 Two Percent Initial Empty Space with a Height Gain from 3 to 6 Floors with No Capacity Gain Followed by Height Gain from 3 to 6 Floors with Capacity Gain and Seeking to Amass Empty Space**

In the fourth scenario, coded **2% 0s 3/6 ncg 3/6 cg amass0**, the initial percentage of empty space is 2% and the building starts at 3 floors and the target is 6 floors with no capacity gain (ncg) in the first cycle, however, in the second, using the same building target height of 6 floors, there is capacity gain (cg) and the rebuilt buildings are amassed together in a dense and compact manner, whilst also freeing up condensed empty space (amass0).

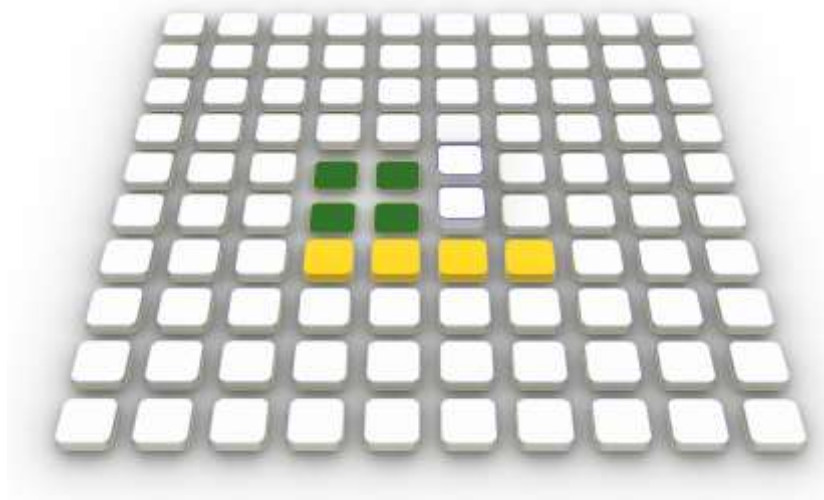
The following exercise demonstrates that empty space can be amassed in different dispositions, and also demonstrates that one cycle can lead to no capacity gain whilst augmenting the quantity of empty space, whilst the following cycle can be used to augment capacity. This scenario is suitable for a context in which one predicts not only that a certain urban area needs to augment its capacity, but also whereby one predicts that the need for capacity gains will itself augment in the near future. The reason for the first cycle leading to no capacity gain is that the objective is to double the amount of empty space, in this case, from 2% to 4% or from 2 empty allotments to 4 empty allotments, and we do so by relocating 4 targeted buildings to 2 initially empty allotments, augmenting the height from 3 to 6 floors. In the second cycle we then follow by continuing to augment the height from 3 to 6 floors, and still targeting 4 buildings for redevelopment- no gain of height beyond 6 floors has been achieved, however, we have managed to amass some empty space, and the amount of empty space that we can begin another cycle with is now 4 instead of the initial 2.

The initial housing capacity was 23,520, which is the initial 24,000 capacity with the deduction of two empty allotments which each would usually have a capacity of 240 each. During the first cycle we are able to relocate 4 buildings targeted for redevelopment into two allotments, adding no capacity. During the second cycle another 4 buildings are targeted for reconstruction, this time using 4 empty allotments, increasing height from 3 to 6 floors and hence gaining a capacity of 3 floors for each targeted building, which means we have gained a capacity of 960 whilst also augmenting the amount of empty space from 2 to 4 allotments.

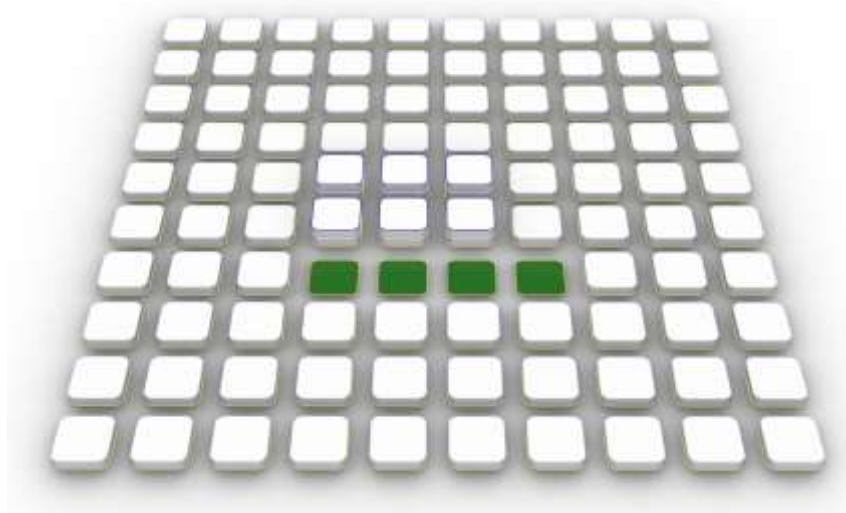
The final arrangement of the empty space we have amassed in this following exercise is in the form of 4 allotments disposed in a linear fashion, however, it could of course be done in such a way that they are perhaps in a different disposition. The previous exercise also followed this pattern, that is, of opening up space in a linear fashion. One can imagine however an application of this same following exercise but undertaken so as to open up the same amount of 4 allotments, but arranged in two rows of two- this could be used for example if one needs to build a very large complex such as a building pertaining to transportation or another key public utility.



**Image 83 – Two empty spaces in green with four target buildings in yellow**



**Image 84 - Four empty spaces in green with four target buildings in yellow and two redeveloped buildings with 6 floors**



**Image 85 - Four empty spaces in green and six redeveloped buildings with 6 floors**

## 4.7 Two Percent Initial Empty Space with Height Gain from 3 to 9 Floors with Capacity Gain and Seeking to Amass Empty Space

In the fifth scenario, coded **2% 0s 3/9 cg amass0**, the initial percentage of empty space is 2% and the building starts at 3 floors whilst the initial building target height is 9 floors, resulting in a significant capacity gain (cg) whilst also being able to amass empty space.

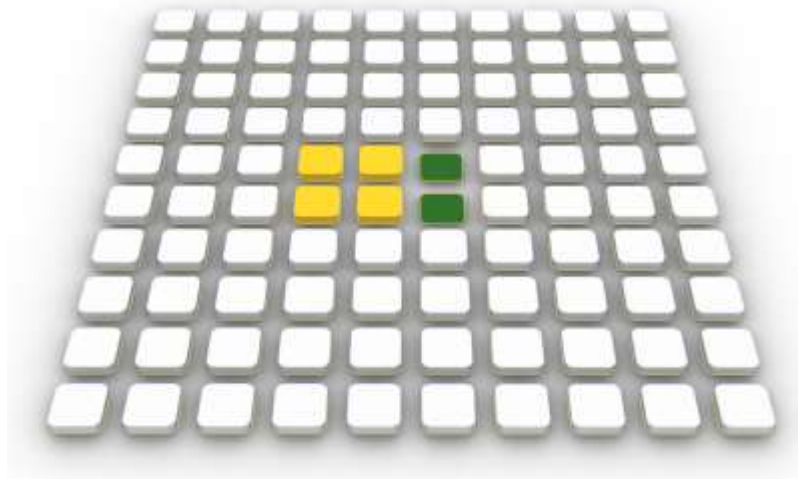
In this scenario, a high rate of growth of housing capacity is sought as well as an augmentation of the rate of growth as well, which means that each cycle should represent gains in housing capacity as well as an augmentation in the amount of available empty space. Let us now take a look at the Table that shows us the rates of gains relative to augmenting floor height from 3 to 9 floors.

Simulation of rate of capacity gains with new buildings at 9 floors							
% of Empty Blocks	1.00%	2.00%	5.00%	10.00%	15.00%	20.00%	25.00%
Number of empty blocks	1	2	5	10	15	20	25
Initial Loss of Capacity	240	480	1200	2400	3600	4800	6000
Number of cycles until full reconstruction	99	49	19	9	5.66	4	3
Adjusted Population	23760	23520	22800	21600	20400	19200	18000
Adjusted Population after Full Reconstruction (with empty blocks remaining)	71280	70560	68400	64800	61152	57600	54000
Net Gain	47520	47040	45600	43200	40752	38400	36000
Net Gain per cycle	480	960	2400	4800	7200	9600	12000
Net Gain per cycle %	2.02%	4.08%	10.53%	22.22%	35.29%	50.00%	66.67%

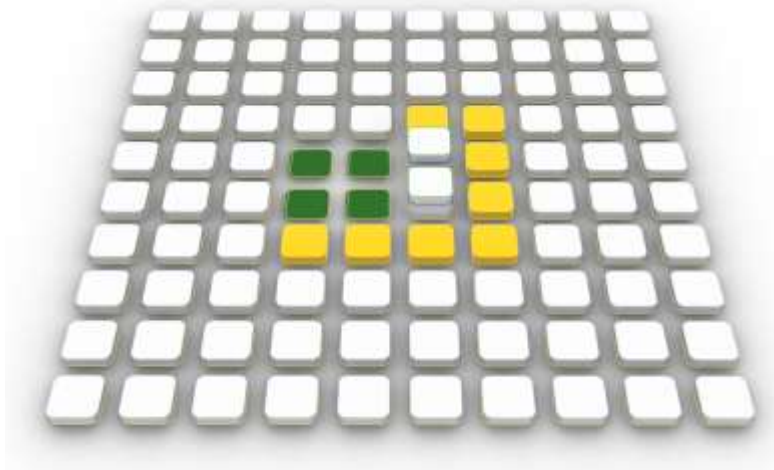
**Image 86 - Simulation of rate of capacity gains with new buildings at 9 floors**

The Table already accounts for the initial cycle whereby the initial empty space stands at 2%. Therefore, the first cycle relocates 4 buildings targeted for relocation into 2 empty allotments, and augments building height from 3 to 9 floors. However, since we are relocating 4 buildings instead of 2, the capacity gain from one cycle isn't 960 as indicated in the table, but rather 480- the reason for this is because in relocating 4 buildings into 2 allotments, we already have to augment the height to 6 floors already, and as such, only the supplementary 3 floors count as housing capacity gain. This leaves the capacity at 24,480. If we wish to continue to augment the amount of empty space, one can target 8 buildings for redevelopment and relocate them into 4 empty allotments, gaining 480 capacity again and also amassing 4 new empty allotments. We started with 23,520 housing capacity and 2 empty allotments, and ended with 24,960 housing capacity and 8 empty allotments.

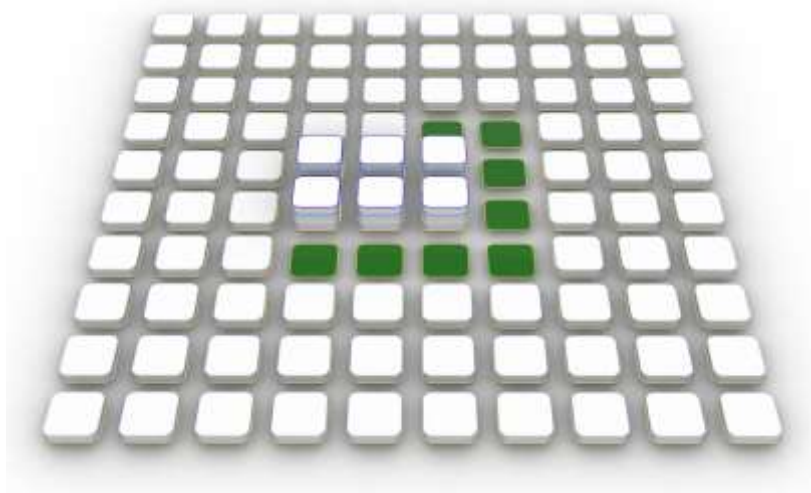
This scenario may be used to reach the conclusion that if an augmentation in the rates for the necessary growth for housing capacity is anticipated in an area within which the existing amount of empty space is insufficient to accommodate expected growth, then, paradoxically, initial Sliding Puzzle Model cycles may bring little to no gains in housing capacity because the imperative is to augment the amount of available empty space as early as possible so as to then unlock future redevelopment cycles which do augment housing capacity sufficiently.



**Image 87 - Two empty spaces in green and four target buildings in yellow**



**Image 88 - Four empty spaces in green and eight target buildings in yellow and two redeveloped buildings with 9 floors**



**Image 89 - Eight empty spaces in green and six redeveloped buildings with 9 floors**

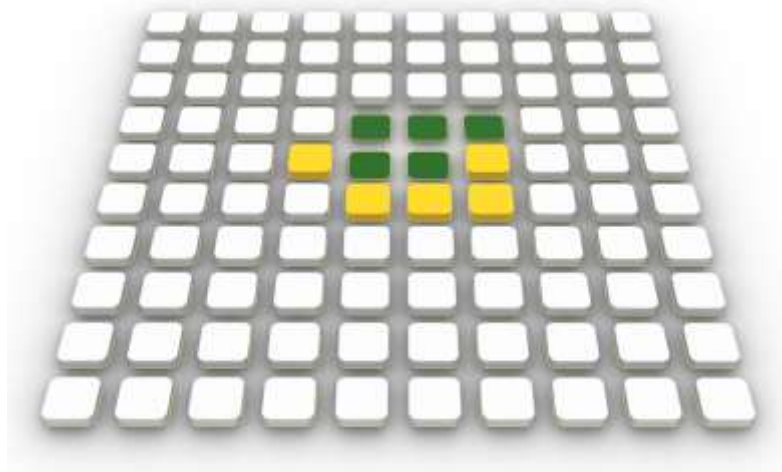
## **4.8 Five Percent Initial Empty Space with 8 Cycles with Height Gain from 3 to 6 Floors with Capacity Gain and Seeking to Amass Empty Space Seeking to Redevelop the Whole Block (Takeover)**

In the sixth scenario, coded **5% 0s 3/6 cg amass0 Takeover**, the initial percentage of empty space is 5% and the building starts at 3 floors, the target building height of 6 floors, over the course of 8 Sliding Puzzle Cycles within the same scenario (8Cx1sc) then manages to both amass empty space whilst taking over 40 blocks (Takeover) whilst still amassing 5 blocks of empty space (amass0).

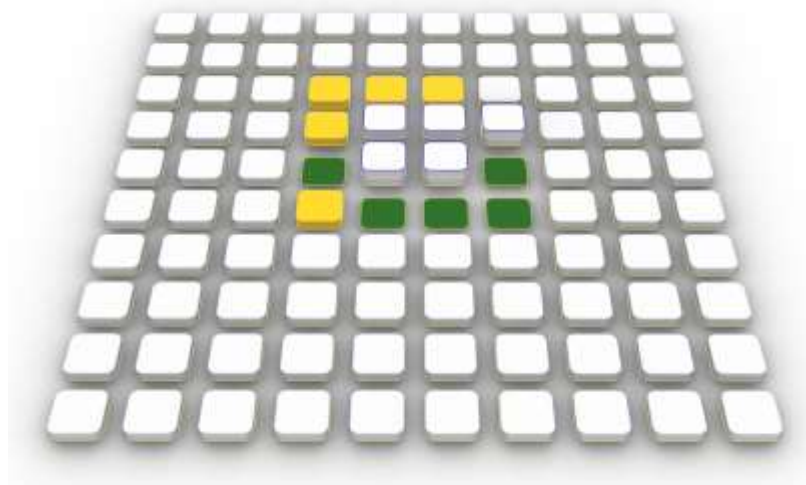
The main purpose of this particular exercise is that it serves as an example of how the Sliding Puzzle Model could be applied in such a manner whereby it becomes intrusive, exaggerated, and is perhaps even hijacked for purposes other than to build more and better housing where it is most needed, to open the way for important highways roads and access points or to make space for large development projects, being used instead for profit or the pure drive to transform the urban fabric for the sake of transformation alone. The term “takeover” should be, in this context and relating to this particular exercise be interpreted as a negative term- that is, at least, the logic behind its use in the title of this exercise.

Despite the generally cautionary intent of this particular exercise, on account of the rate of empty space remaining stable throughout all the cycles, this scenario would also be suitable for a situation in which a high, and yet steady rate of housing capacity augmentation is desired.

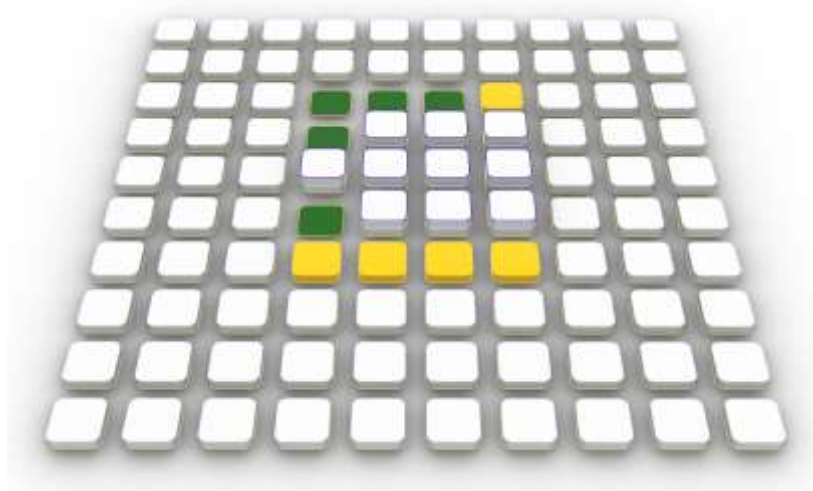
This exercise is however not only useful so as to represent the potential overuse of the Sliding Puzzle Model- it can also be very much applied to a scenario whereby one perhaps wishes to, incrementally and yet steadily, redevelop the whole or virtually the whole or an urban area. This might be the case for example in scenarios such as the potential redevelopment or large informal housing complexes, a scenario in which if a well enough funded and highly motivated force might want to intervene in a territory with the ultimate intention of replacing virtually all of the buildings that currently make up the built environment. As we will see later in this study, this might very well be the case of the Dharavi informal housing complex, the subject of one of this Thesis’ case studies, for which the competent urban planning authority has an as of yet unfulfilled complete redevelopment plan since 2004.



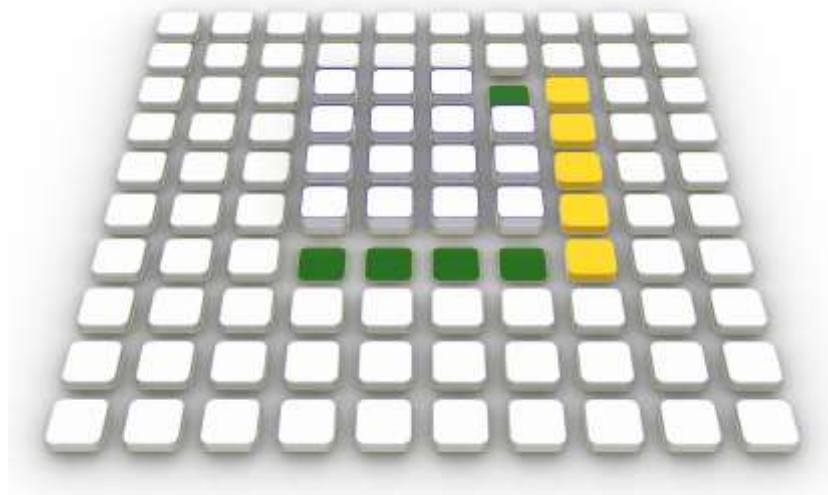
**Image 90 – Five empty spaces in green with five target buildings in yellow**



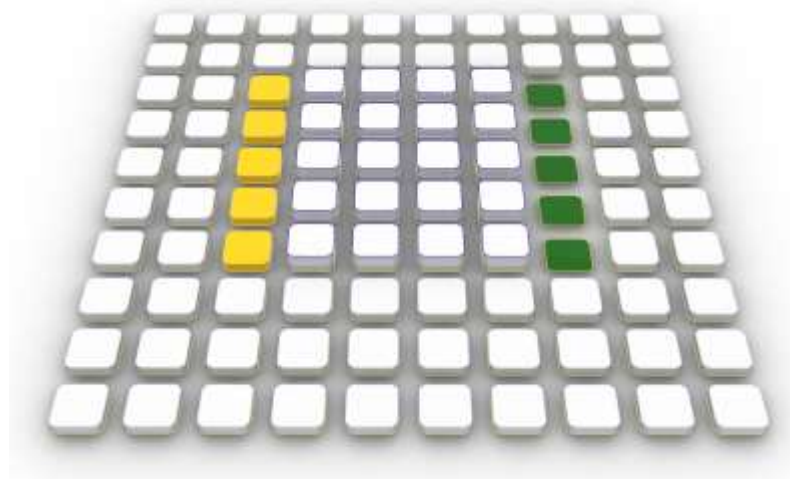
**Image 91 - Five empty spaces in green with five target buildings in yellow and five redeveloped buildings with 6 floors**



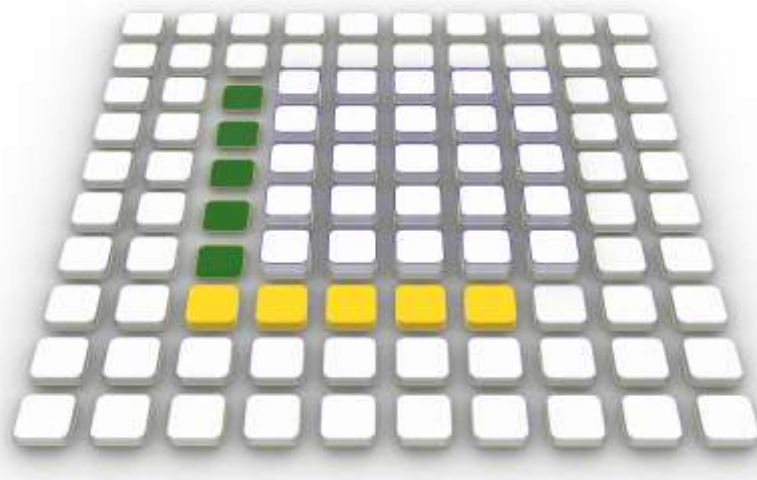
**Image 92 - Five empty spaces in green with five target buildings in yellow and ten redeveloped buildings with 6 floors**



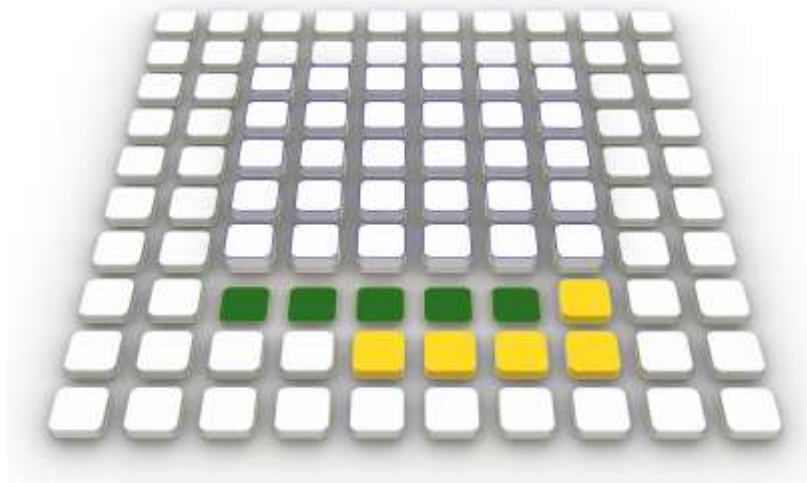
**Image 93 - Five empty spaces in green with five target buildings in yellow and fifteen redeveloped buildings with 6 floors**



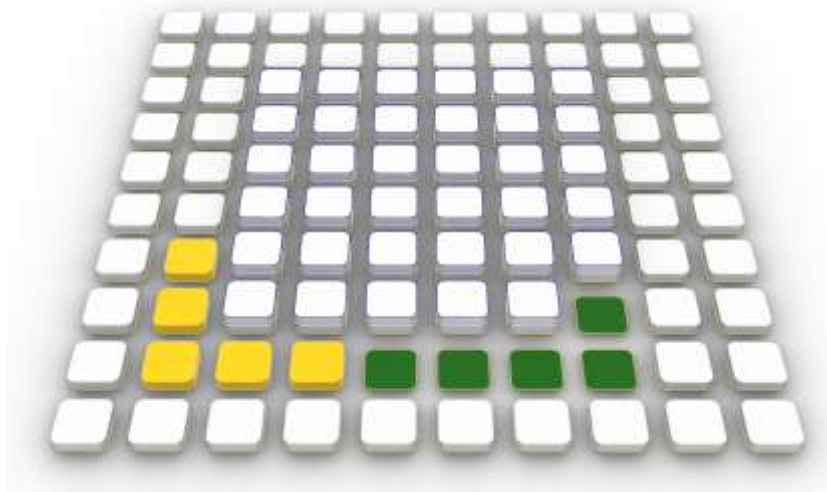
**Image 94 - Five empty spaces in green with five target buildings in yellow and twenty redeveloped buildings with 6 floors**



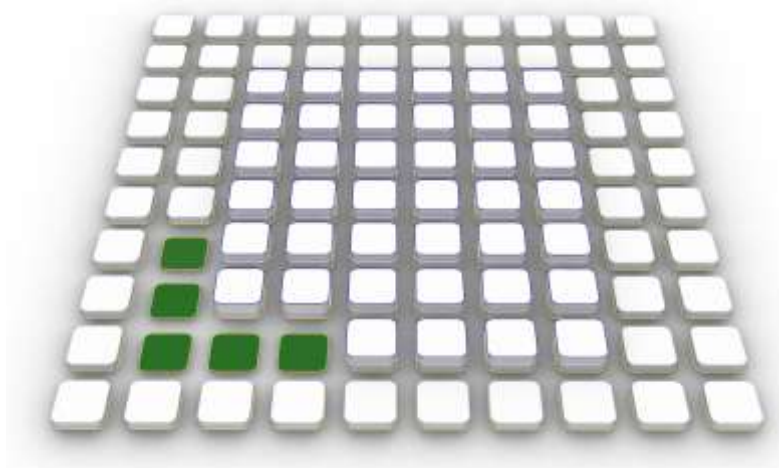
**Image 95 - Five empty spaces in green with five target buildings in yellow and twenty five redeveloped buildings with 6 floors**



**Image 96 - Five empty spaces in green with five target buildings in yellow and thirty redeveloped buildings with 6 floors**



**Image 97 - Five empty spaces in green with five target buildings in yellow and thirty five redeveloped buildings with 6 floors**



**Image 98 - Five empty spaces in green with five target buildings in yellow and forty redeveloped buildings with 6 floors**

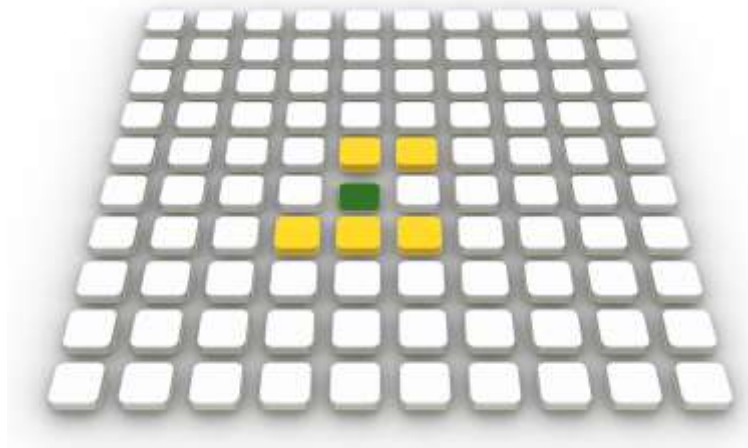
#### **4.9 One Percent Initial Empty Space with Height Gain from 3 to 15 Floors with No Capacity Gain Followed by Height Gain from 3 to 9 Floors with No Capacity Gain Followed by Height Gain from 3 to 12 Floors Seeking to Amass Empty Space (Highway)**

In the seventh scenario, coded **1% 0s 3/15 ncg 3/9 ncg 3/12 ncg amass0 Highway**, the initial percentage of empty space is 1% and the building starts at 3 floors, the initial target building height is of 9 floors in the first cycle, with no capacity gain (ncg), whilst the second cycle has the target building height of 12, also with no capacity gain (ncg), but being able to amass empty space (amass0).

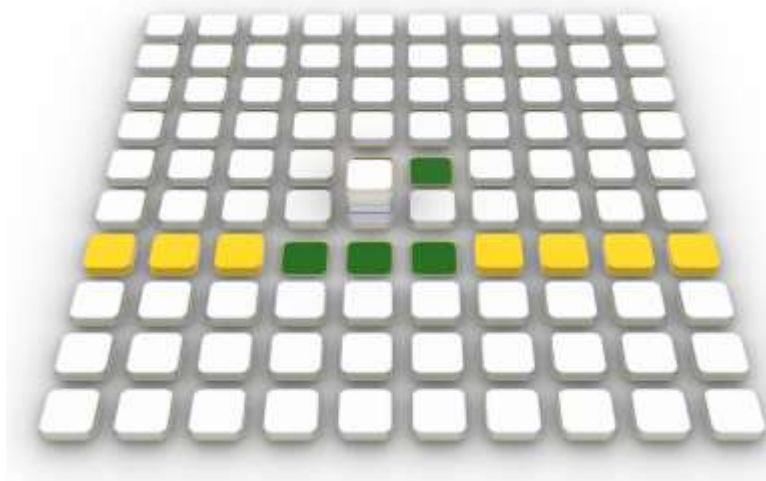
This exercise and its inherent purpose and logic will be used in a case study pertaining to the informal housing complex of Dharavi in Mumbai, with the purpose behind the application of this exercise being the potential for the construction of new access points which themselves, much like empty space, can be a valuable asset to facilitate redevelopment drives, particularly in contexts that are such whereby the urban fabrics is otherwise impervious to redevelopment. This can be said to be very much the case in urban informal complexes the urban form and characteristics of which paradoxically mean that they are at the same time the places where it is the hardest to build public infrastructure, while being also where they are generally needed the most.

This exercise demonstrates that when the imperative is not capacity gain, nor to augment nor to reduce density, nor it is to augment or reduce building height, but rather to open up space for example for a new road or other access point, one may indeed end up having to augment building height if one is indeed to open up space whilst allowing for current functions and residents to be relocated within relative proximity, which is the whole point of the Sliding Puzzle Model insofar as its effect on the urban socio-economic fabric. The reason for this being that it is very likely, indeed it is probably the case, that it is not only that the empty space that one already has at one's disposal needs to be rearranged using the logic of the Sliding Puzzle Model- most importantly in this scenario, the amount of empty space that one begins with is not enough in terms of size when compared to how much empty space we need, and for that reason, building height will be augmented in order to relocate buildings that previously occupied several different places into the same block or building. In this particular exercise, that is what is done, and 5 buildings are relocated to a single new building of 15 floors, which can then relocate all five three-floor buildings. The new 5 allotments of empty space will now be used to relocate 7 allotments that are targeted for redevelopment during the second cycle. The 7 allotments are relocated in two new buildings, one with 9 floors, another with 12. This leaves us with a new linear access point with three new taller buildings now overlooking it.

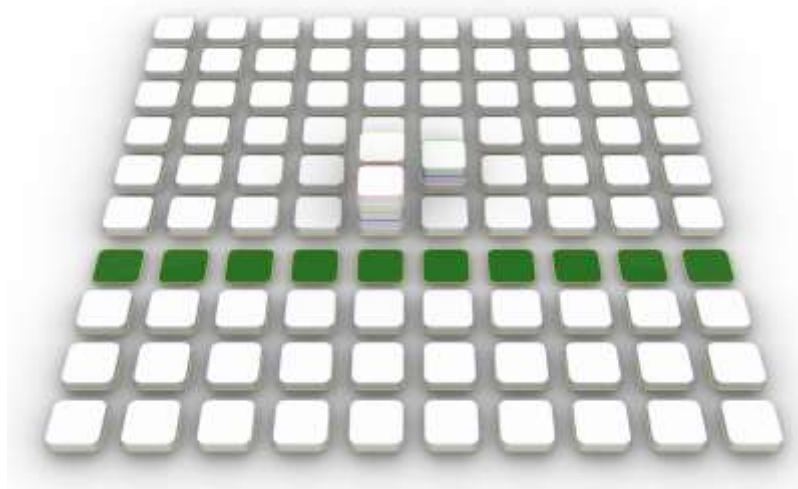
One has previously discussed how some exercises, and this one being one such example, demonstrates that the need to amass empty space will result in a somewhat drastic augmentation in the height of some buildings, with that augmentation being proportionate to the amount of empty space being gained.



**Image 99 – One empty space in green and five target buildings in yellow**



**Image 100 - Five empty spaces in green (one hidden behind redeveloped building) and seven target buildings in yellow and one redeveloped building with 12 floors**



**Image 101 - Ten empty spaces in green and seven target buildings in yellow and one redeveloped building with 12 floors, one with 15 floors and another with 9 floors**

## **5 CASE STUDIES – UNTYING A KNOT IN LISBON’S MOURARIA AND OPENING PATHWAYS IN MUMBAI’S DHARAVI USING THE SLIDING PUZZLE MODEL**

## **5.1 First Case Study – Solving an Urban Conundrum and Political Dispute Whilst Driving Redevelopment in Lisbon’s Mouraria Using the Sliding Puzzle Model**

### **5.1.1 Lisbon’s Housing Issues, an Introduction**

This study will begin by taking a look at some of the main metrics regarding the gentrification of central Lisbon as a whole and one of its historical neighbourhoods in particular, Mouraria, and how it fits into the broader context of the financial crisis and the subsequent Troika Adjustment Programme of May of 2011. The timeframe that concerns us is the period leading up to the expropriation of Antonio Barroso’s garage located in Rua Benfornoso 137-151, which took place in 2017, although some details of the continuation of the rise of Lisbon’s rent prices and the overall rise in discontentment because of the perceived housing crisis will also be discussed.

Much of the analysis that will follow seeks to narrate, illustrate, analyse and ascertain the extremely specific urban, national and political context that underpinned a period of fast paced transformation that overtook primarily the Lisbon Municipality area, and which then spread somewhat to the many parts of the Lisbon Metropolitan area, which started roughly around 2011 with the aftermath of the economic crisis of 2008 and which accelerated and intensified around 2016 until the publication of this study which is around the end of the year 2023, beginning of 2024, a period which can only be described as Lisbon’s rise international profile as well as the steep rise of its housing prices and rent costs. At first one will focus on the beginning of the steep rises in rent and housing prices which we can pinpoint at around 2016-2017. We will then proceed with a literature review and how it applies to the case of Lisbon, namely, how the supposed “authentic” aspect of Lisbon’s historical neighbourhoods have made it a perfect target for redevelopment and gentrification.

We will then take a quick look at the main agents behind this drive to gentrify Lisbon’s historical neighbourhoods and how it fits into a project of national importance along with an illustration with a timeline of some of the main events.

An analysis of the specific case study of Mouraria will ensue, taking a closer look at how the Municipality targeted the neighbourhood for redevelopment with the AiMouraria project and how it seeks to improve security and increase policing, taking much of the content and translating it from my own previous publication (Silva Jordão, 2017).

Thereafter we will continue to take a more detailed look at the situation in 2023 following the publication of the Lisbon Municipal Housing Charter for 2023-2032 (Câmara Municipal de Lisboa, 2023a). Finally, we will use this case study to apply the Sliding Puzzle Model to a specific situation, namely, by showing how one Sliding Puzzle Model Cycle will look like when applied to real-life situation in the Mouraria neighbourhood of Lisbon. The historical and urban context takes much content from yet another publication of mine (Silva Jordão, 2018d), while much of the analysis is taken from an article that I submitted to a conference, and was not accepted, content which has since been much improved and added to.



should increasingly be an intervener in the decision-making process and functioning of any system of redistribution and public investment.

We find that "Historically, service provisioning has been seen as a responsibility of the state, yet governments have not been able to provision, operate and maintain public services in line with rapid urbanization and population growth... Recent policies have giving greater importance to reforms such as the use of competition and a more commercialized management of urban services, as well as public sector management approaches... However, these types of institutional strategies have not been as efficient as one would expect. contemporary has been the promotion of balance and monitoring mechanisms with the collaboration of civil society, and especially the involvement of service users in the planning, management, regulation and financing of services at the community and local level" (Cavill and Sohail, 2004, pp. 156 ).

### **5.1.3 Lefebvre, the Right to the City and Gentrification**

The city is one of the central arenas of the increasing commodification of everyday life, as Lefebvre noted in his account of the city's evolution (2008)- he further develops this idea through the distinction between use-value and exchange-value. The distinction between use-value and exchange-value is particularly useful for analyzing the dispute over the appropriation of public spaces by private agents, disputes over the privatization of municipal or state services, and the agency of different urban actors regarding the use of urban land.

As Lefebvre mentions, stressing the centrality of conflict in the generation of social identities and organizational affiliations (2008: 13):

"In contrast, the violent gaps between wealth and poverty, conflicts between the powerful and the oppressed, do not prevent the attachment to the city, nor the confrontation between the 'popoco minute', the 'popolo grasso', the aristocracy or the oligarchy, have the city as its place, as its arena."

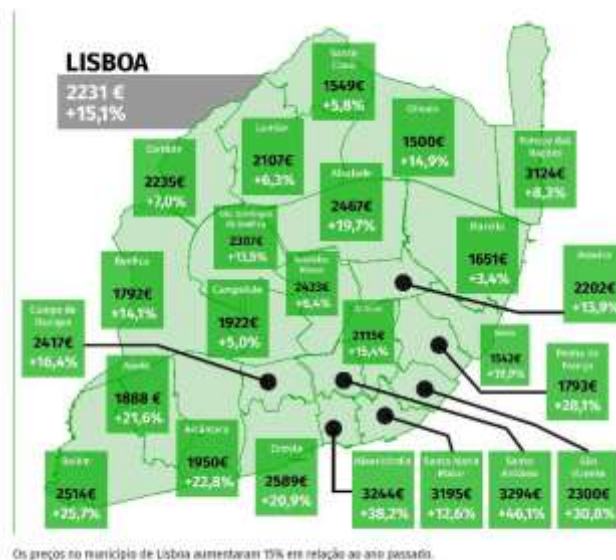
The advance of the commodification of urban life and the financialization of urban land follows a pattern the development of which predates the processes of industrialization and the maturation of the models of capitalist accumulation:

"The city itself is a work (of art), and this characteristic contrasts with the irreversible orientation towards money, toward commerce, toward trade, towards products. Indeed, the work (of art) is use-value and the product is the trade-value. The principal use of the city, that is, of the streets and squares, of buildings and monuments, is the festival (which consumes unproductively, with no other advantage than pleasure and prestige, enormous riches in objects of money)" (Lefebvre, 2008, 12).

### **5.1.4 The Gentrification of Lisbon and of the Historical Centre Specifically**

In the centre of Lisbon, as well as increasingly in Greater Lisbon, rents are becoming increasingly inaccessible for Lisbon's residents and especially for the working class. The sale of buildings which often leads to the termination of rental contracts has led to the *Banco Nacional de Arrendamentos* (the National Bank of Rentals) declaring that more than five families are being evicted per day in Portugal, while some claim that the real number is much higher (Rádio Renascença, 2017); Lisbon is very much at the heart of this process. In the first nine months of 2017 alone, 1,480 families were evicted nationwide (Observador, 2017). The buildings are often

sold to be transformed into hotels, hostels, gated communities or luxury apartments. News stories about the rising costs of rent abound, with some reports claiming that some areas have seen increases in rental costs in between 30% and 40% (Expresso, 2016), simultaneously fuel public outcry as well as adding to the already well established perception among real-estate investors, domestic and foreign, that the Lisbon property market presents an investment opportunity that should be taken advantage of sooner rather than later. As we can see in Image 1, the average rent has risen by 15%, according to the INE, Portugal's National Statistics Agency. The parish at the heart of Mouraria, Santo António, was the parish that saw the biggest increase, rising by 46.1%, ahead of a nearby parish, second-placed Mesericórdia (38.2% increase) and far ahead of third placed São Vicente (30.8%), a parish that is also relatively close to Mouraria. The Santo António parish also ranks first in the average annual rental costs at 3,294€. The only other three parishes with values above the 3,000 mark include nearby Mesericórdia and Santa Maria Maior, the other one being the Parque das Nações, which was the target of the biggest redevelopment project in Lisbon before the close of the 20<sup>th</sup> century (for Expo '98) and possibly in recent Lisbon history.



**Image 103 - Rental price costs changes, per parish, in one year, from 2016 to 2017**

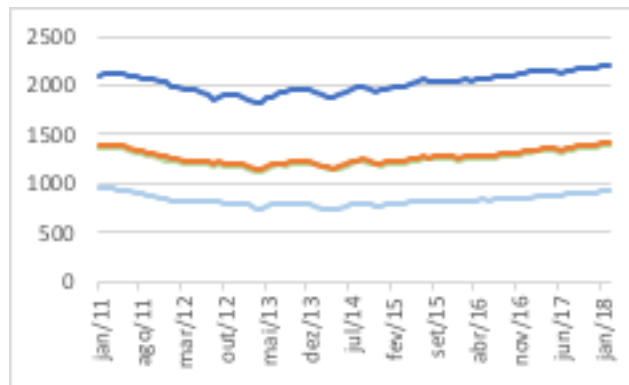
Lisbon is undergoing a full-spectrum urban transformation, and the Municipality has been far from a neutral bystander. Its policies have been a successful application of a nationwide project that has its roots in the financial crisis of 2008, and which officially started in May of 2011 with the Troika's Structural Adjustment Programme (Troika, 2011). Not all areas of the city have been affected in the same way, with a considerable amount of strain being taken by a relatively small area of the Lisbon Council (see Image 2).

Historically there is a recurring tendency for the working class and the poor to be driven away to the outskirts of the city. But gentrification has become so aggressive that it has come to drive away the local, national middle classes as well, for now sparing those who own their own homes or whose earnings have not been affected by the financial crisis to the point of not being able to afford the increasing cost of rents. The opening up of Lisbon's real estate market to international agents means that the national middle classes are now having to compete with the middle classes of wealthier

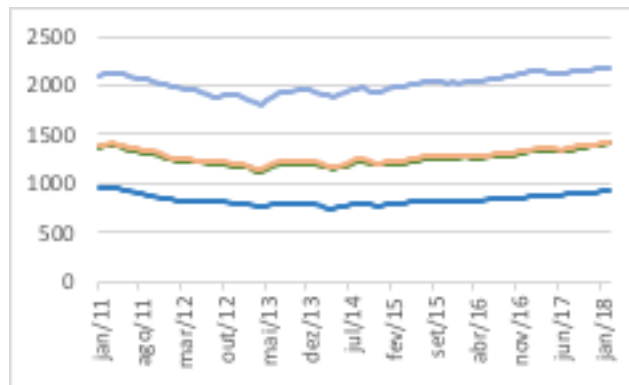
European nations such as Spain, France, Germany and the United Kingdom who then affect prices as both tourists, or new tenants and home owners.

The more precarious nature of work contracts and the effect of the digital age on labour dynamics has also made it possible for artists, project managers, software engineers and high-earning professionals in general to work remotely. Lisbon’s comparatively lower rents, buzzing culture, Mediterranean cuisine as well as its sunshine and beaches makes it an increasingly irresistible proposition for central Europeans with a taste for a more “genuine” cosmopolitan life.

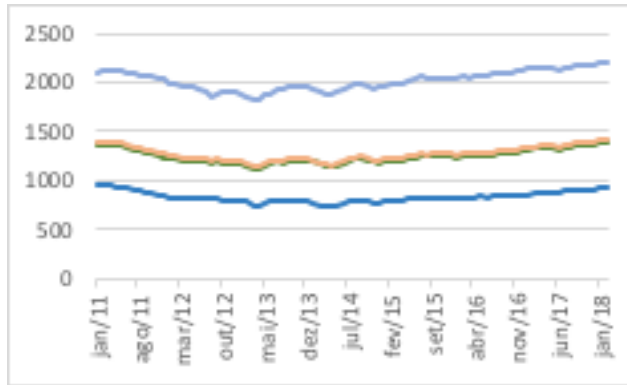
If we take a look at the evolution in house prices in Lisbon from 2011 to 2018, we see a notable rise across all *Instituto Nacional de Estatística indicators (INE, Statistics Portugal, 2018)*:



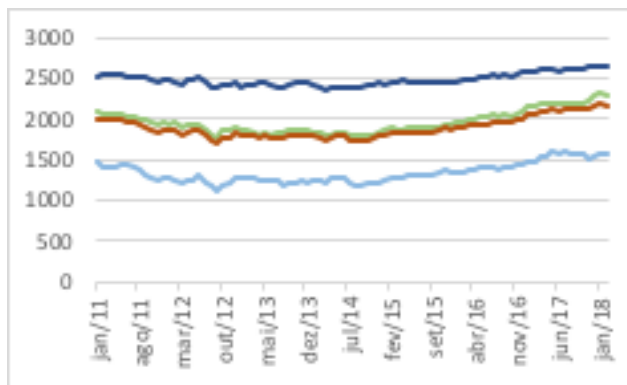
**Figure 15 - Unit Values (EUR / m2) of Housing Banking Valuation by Nature and Type of Housing - Portugal and NUTS II - February 2018**



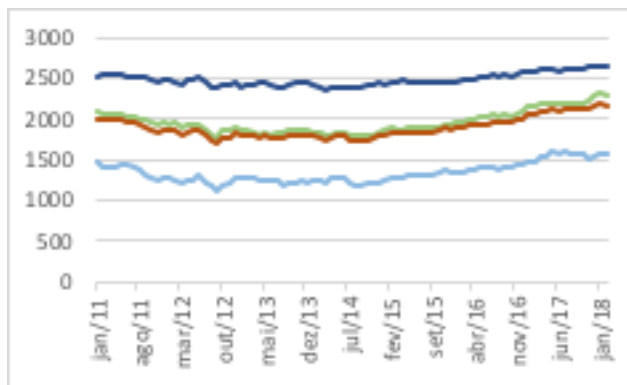
**Figure 16 - Unit Values (EUR / m2) of Bank Housing Evaluation by Nature of Housing - Portugal, NUTS II and NUTS III - Housing - February 2018**



**Figure 17 - Unit Values (EUR / m2) of Housing Banking Valuation by Nature of Housing - Portugal, NUTS II and NUTS III - Apartments - February 2018**



**Figure 18 - Unit Values (euros / m2) of Bank Housing Evaluation by Nature of Housing - Portugal, NUTS II and NUTS III - Housing - February 2018**



**Figure 19 - Unit Values (EUR / m2) of Housing Banking Valuation by Housing Type - predominantly urban areas - Housing - February 2018**

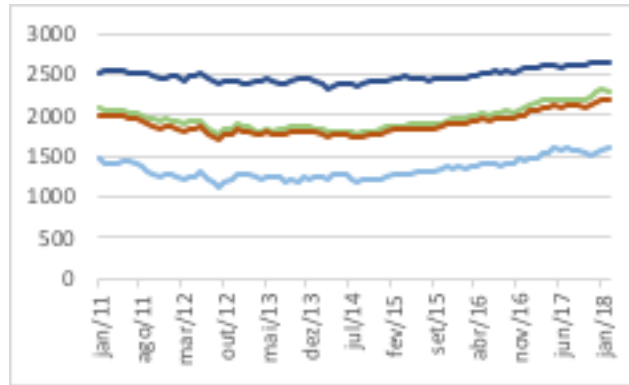


Figure 20 - Unit Values (EUR / m2) of Bank Housing Evaluation by Housing Type - predominantly urban areas - Apartments - February 2018

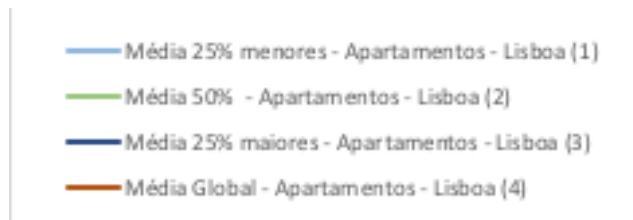


Figure 21 - Key for all the previous Charts:

Construction and maintenance costs have also risen steadily (INE, 2018b):

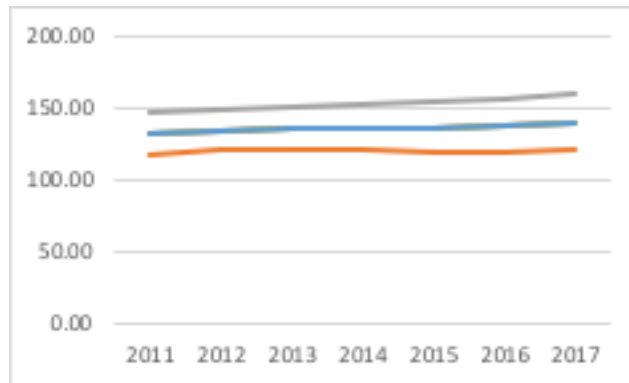
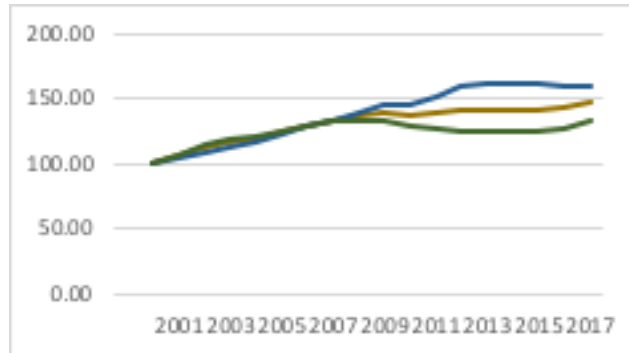


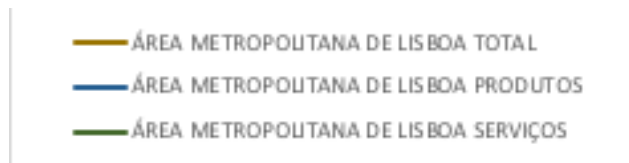
Figure 22 - ICCHN - New Housing Construction Cost Index



Figure 23 - Key for the Figure above



**Figure 24 - IPMRRH - Regular Housing Maintenance and Repair Price Index**



**Figure 25 - Key for the Figure above**

While national indicators regarding overcrowding and severe housing deprivation seem to be evolving positively, the median housing cost burden and the housing cost overburden rate peaked in 2014 and 2015. The last available data goes as far as 2016 (though the study was published in 2018, see INE, 2018c) though one can assume that they are likely to rise again with the housing price hikes that we have seen since 2015 and which are steadily rising, as seen previously.

### Housing deprivation indicators

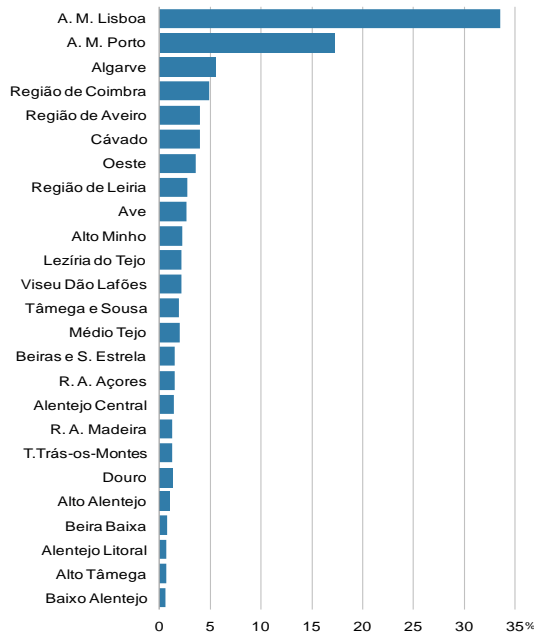
	Taxa de sobrelotação da habitação	Taxa de privação severa das condições da habitação	Carga mediana das despesas em habitação	Taxa de sobrecarga das despesas em habitação
	%			
2005	16,5	7,7	8,4	4,3
2006	15,8	7,5	10,3	4,5
2007	16,1	7,6	12,8	7,4
2008	15,7	6,9	11,7	7,6
2009	14,1	4,7	11,3	6,1
2010	14,6	5,6	10,4	4,2
2011	11,0	4,0	11,7	7,2
2012	10,1	4,3	13,0	8,3
2013	11,4	5,6	12,9	8,3
2014	10,3	5,5	13,4	9,2
2015	10,3	4,7	13,4	9,1
<b>2016</b>	<b>10,3</b>	<b>4,9</b>	<b>12,4</b>	<b>7,5</b>
	Overcrowding rate	Severe housing deprivation rate	Median of the housing cost burden	Housing cost overburden rate

Fonte/Source

INE, I.P., Inquérito às Condições de Vida e Rendimento (ICOR; EU-SILC).  
 Statistics Portugal, Survey on Income and Living Conditions (ICOR;  
 EU-SILC).

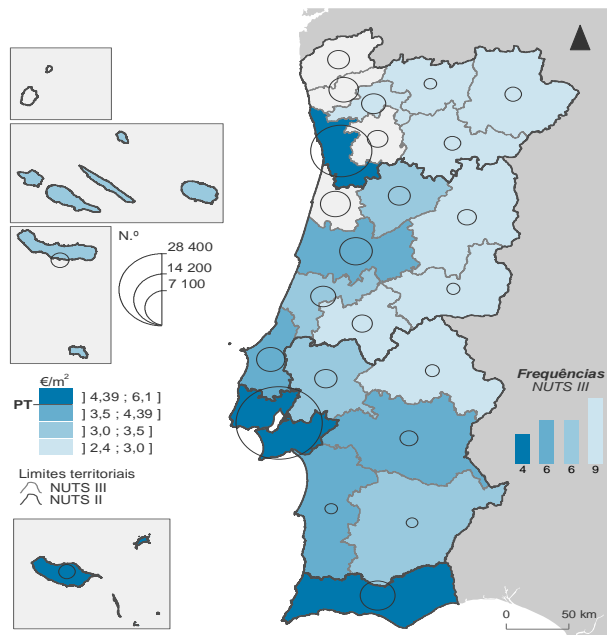
**Table 12 - Housing Deprivation Indicators, 2005-2016**

The rental market indicators that are made available by Portugal Statistics (INE, 2018d) also demonstrate the extent to which Lisbon and Mouraria in particular within it, leads by a large margin on key areas, namely, proportion of new leases, median rental costs, fluctuations in renting costs within the same regions (metropolitan), number of new leases by parish (within Lisbon Council), median rent costs per metre square in new leases, amount of new leases, proportion of traditional family rented accommodation of in the total of classic family accommodation, Proportion of new leases and Median value of rents per metre squared of new leases of family housing by Council:



**Figure 26 - Proportion of new leases of family accommodation in the total of new leases in the country, NUTS III, 2017**

This indicates that the pressure within the housing rental market is much higher within the metropolitan area of Lisbon than any metropolitan area in Portugal.



**Image 104 - Median value of rents per m<sup>2</sup> and number of new leases (family housing), Portugal, NUTS III, 2017**

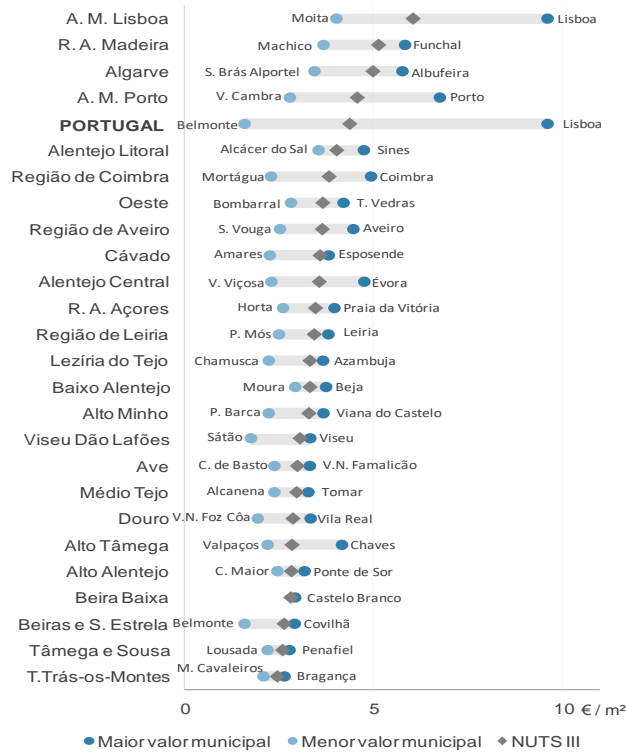


Figure 27 - Median value of rents per m<sup>2</sup> of new leases of family accommodation, Portugal, NUTS III and municipality, 2017

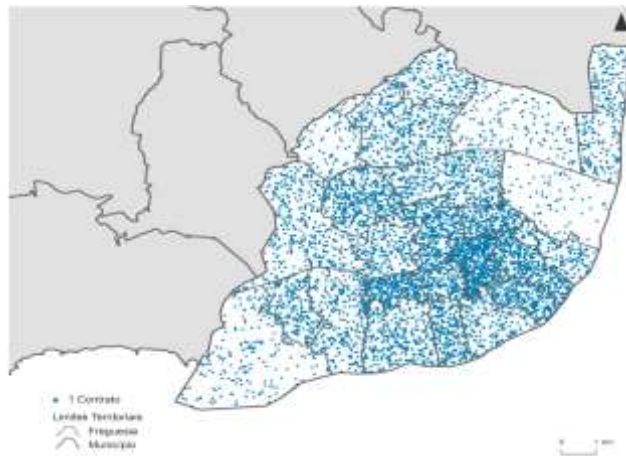


Image 105 - Number of new leases (family housing), Mouraria can be clearly seen in the largest concentration of blue dots

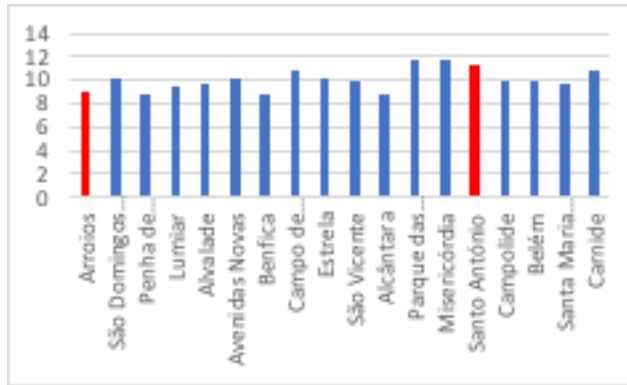


Figure 28 - Median value of rents per m² of new family housing leases (€) (Selected 18 of 24 parishes most affected. Parishes which include Mouraria are in red)

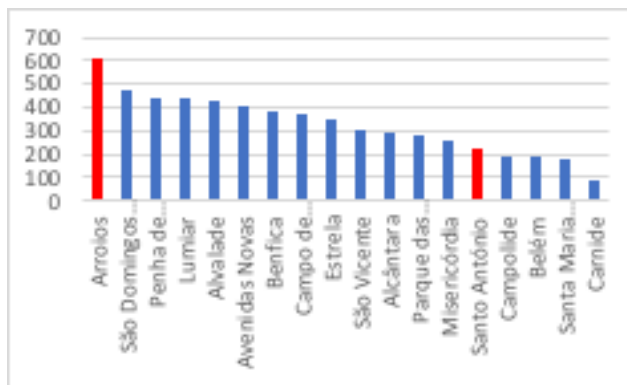


Figure 29 - New leases of family housing (No., Selected 18 of 24 parishes most affected. Parishes which include Mouraria are in red.)

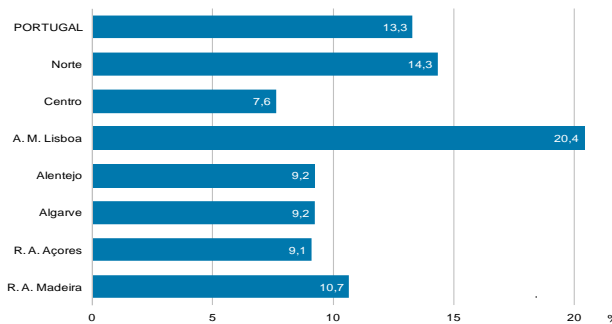


Figure 30 - Proportion of traditional family rented accommodation of habitual residence in the total of classic family accommodation, Portugal and NUTS II, 2011

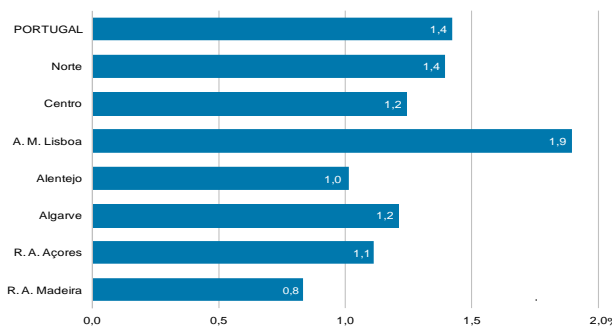


Figure 31 - Proportion of new leases of family accommodation in the total of classic family accommodation, Portugal and NUTS II



### 5.1.5 The Arch of Governance

Another important lesson to take away from the gentrification in Mouraria is how global dynamics, namely the financial crisis which led to the public debt crisis, the structural adjustment programme of May of 2011, and Portugal's subsequent need for foreign capital and investments, leading to the opening of the housing market to foreign capital and the increased importance of tourism as an industry, can have a drastic effect in local communities, in this case in the form of gentrification and displacement. In this context the displacement of residents is seen by both national and local government as an acceptable form of collateral damage of a process of gentrification and touristification that ultimately offsets the economic and financial difficulties of the country and as a whole.

The Mouraria case study demonstrates the relationship between government policy to historic buildings, conservation and development, within a larger, national and even continental context. The case of AiMouraria is perhaps one of the cases in which gentrification and its connection to global financial dynamics is most apparent. As such, and for the first time in decades, the urban rehabilitation of Lisbon's city centre became a policy of prime importance, as opposed to the previously favoured strategies of building housing in Lisbon's periphery.

It is widely accepted that kickstarting the gentrification of the Intendente region and afterwards, of the Mouraria neighbourhood was António Costa's most notable legacy as Mayor of Lisbon. It is also noteworthy that all three of the political parties that usually form Portuguese governments were directly involved in this process, strategically aligned in a rare case of political consensus across the political spectrum, all converging in different ways and for different reasons, but ultimately working towards the same result. These three parties are usually referred to as a unit with the term “The Arch of Governance”.

António Costa, Mayor of Lisbon (position which he occupied from 2007 to 2015), of the Portuguese Socialist Party, went on to become the country's Prime Minister, which is the most important governmental position one can hold in Portugal, whereas Assunção Cristas, the central figure in the reform of the renting law of August of 2012 which had as one of its main effects to make it easier for landlords to evict their tenants (PGDL, 2012), went on to become the leader of her party, CDS-PP. At the time of the introduction of the new renting law, she was the Minister of Agriculture, Sea, Environment and Territorial Planning (2011-2015).

The Portuguese Social Democratic Party, meanwhile, was responsible for opening up the country's real estate market to foreign investment, and was directly responsible for introducing the highly controversial Golden Visa programme which grants residential rights to any foreign person who transfers sums 1,000,000€ upwards, generates ten new jobs or acquires real estate for sums of 500,000€ upwards (SEF, 2018), a policy which is most often used for investments into real estate and a large part of which is invested in Lisbon. According to Immigration and Borders Service (SEF, 2018b) a total of 3,705,160,484€ has been invested so far into Portugal via de Golden Visa Programme, with a large part of that, 3,357,473,310€ (90.6%) going into real estate investment as opposed to the remaining values relating to financial investments into the country.

It was also under the PSD and CDS-PP coalition government (2011-2015) that the Strategic Programme for Entrepreneurship and Innovation (Diário da República, 2011) was introduced.

One must also note the political convergence of the “Arch of Governance” regarding the need to improve the security and eventually, increase and/or facilitate police presence within the Mouraria area. We will explore this in greater detail in the section of this chapter that deals with the “New Mosque”.

Paradoxically, within this overarching plan undertaken by the Arch of Governance, it was its left wing, as represented by the Socialist Party (Partido Socialista, *PS*), at that point in control of the Municipality of Lisbon, but not the central government, to oversee strategic investment into key urban areas as we will also see in greater detail.

### 5.1.6 Timeline

What follows is a very basic timeline, stripped down to its bare minimum so as to fulfil its purpose, which is to give us a general picture of the historical context within which the redevelopment plan for the New Square and Mosque is taking place.

- March of 2011- Lisbon Mayor Moves his Office to Intendente
- May of 2011-Troika Agreement
- June of 2011 –Beginning of the PSD-CDS-PP coalition government.
- September 2011 – The *Plano de Ação da Mouraria* (plan of action for Mouraria) and the *AiMouraria* programme begin
- November of 2011 - Government Launches the “Strategic Programme for Entrepreneurship and Innovation”
- 2012 – Protest against the Troika Programme erupt and reach their peak in September
- August of 2012 – Neo-Liberalization of the Laws for Urban Rentals
- October of 2012 -Golden Visa Programme introduced
- 2013 – Resistance movements protesting the Troika begin to slow down
- 2014 – “Social peace” starts to be regained as political protests begin to wither
- 2014 – Most designated projects within the Plano de Ação da Mouraria are completed
- 2015- International media starts hyping-up Lisbon as a tourist destination
- 2015 – Rise in rental contracts not being renewed across Lisbon
- November of 2015 - The “Geringonça” Government is elected.
- 2016 – Resistance movements start forming around the issues of housing and urban development
- 2017 – Lisbon starts to appear more consistently and prominently as a tourist destination
- 2018 – Hundreds Protest High-Rents and Financial Speculation
- 2018-2023 – Average rents continue to increase in central and then peripheral Lisbon
- 2023 – Mass protests return to Lisbon’s streets, this time contesting steep rises in rental costs

### 5.1.7 The Transformation of Intendente and Mouraria- a Central Project for the Municipality of Lisbon

The Martim Moniz square and the surrounding neighbourhoods of Intendente, Anjos and Mouraria have undergone intense transformations over the last few years. The Intendente’s negative image, in particular its enduring problems of crime, drug trafficking and drug addiction that afflicted the area since residents of the former Casal Ventoso ghetto were relocated there after its demolition, simultaneously represented a stain on Lisbon’s image as well as a major urban problem. In 2011, Lisbon Mayor and Portugal’s current Prime Minister, António Costa, decided to move his office to Largo do Intendente (Jornal de Notícias, 2011) where he remained until 2014 (Público, 2014). One of the main objectives was to "give people the confidence to invest" in a part of the city considered to have a "bad reputation" (Público, 2011), making it clear that Intendente's rehabilitation project intended to attract financial investment in the area.



**Image 106 - The Intendente Square after redevelopment (Lisbon Municipality, 2017a)**

One of the Lisbon Council's main rehabilitation projects is called *AiMouraria*, named after a song made famous by Portugal's most iconic fado singer, Amália Rodrigues. *AiMouraria*'s motto is '*redeveloping the past to build the future*', and it emphasizes the rehabilitation of public spaces as well as concentrating its redevelopment efforts around two of Mouraria's main historical spaces, the Lagares Block and the Casa da Severa. It was the beginning of the change of Intendente's image. *AiMouraria* promises to "requalify the Past to Build the Future".

#### **5.1.8 The Mouraria Innovation Centre and the Lagares Block**

The Lagares Block was the target of one of *AiMouraria*'s most important interventions. It was chosen as the location for the Mouraria Innovation Centre, the construction of which was financed by the Municipality. The Municipality invested 1,618,343 Euros in the "Change of functions and rehabilitation of the Lagares Block to create the Mouraria Innovation Centre", a substantial part (21.4%) of *AiMouraria*'s total budget of 7,567,964 Euros (*AiMouraria*,2017d).



**Image 107 - The Mouraria Innovation Centre Project (Lisbon Municipality, 2017e)**



**Image 108 - The Mouraria Innovation Centre's facade and ongoing construction in the background**



**Image 109 - The Mouraria Innovation Centre with abandoned and degraded buildings in the background (Diário Imobiliário, 2016)**

More specifically the intervention in the Lagares Block emphasizes the importance of the redevelopment efforts as means to protect the historical value of the site while making way for a project of economic value, namely, a hub for innovation and creativity (AiMouraria, 2017e). We can clearly see that the Mouraria Innovation Centre is not only built upon a site of historical heritage, but the lexicon that permeates its name as well as its mission statement has its foundations in a much more recent establishment- the Memorandum of Understanding of May of 2011 between the Portuguese government and the so-called *Troika* (Troika, 2011), made up of the International Monetary Fund, the World Bank and the European Central Bank, and more precisely the political language that came to dominate the government led by the Portuguese Social Democratic Party, namely its emphasis on promoting entrepreneurship. That is, the main concern of the project is to use a site of historical heritage to improve the urban landscape to attract both investment of capital as well as

to provide a place for economic activity and innovation built upon Portugal recent and urgent need for economic growth and economic restructuring. With the spectre of a national financial catastrophe, the displacement of local communities because of gentrification not only became an acceptable form of collateral damage- it became a necessary bi-product of Portugal precarious position in the context of the public debt crisis which suddenly became a problem of the highest priority not only on a national, and even continental dimension.

### 5.1.9 The City as the Locus of Struggle

The political contestation to the Troika's programme reached its peak in 2012 and 2013, started winding down severely by 2014 and was significantly "tamed" by the election of the board left-wing coalition government dubbed "Geringonça" (van Vossole, 2017), which roughly translates to "Contraption", a term initially meant to be derogatory but which ended up catching on among supporters and detractors alike.

However the negative side-effects of gentrification have been one of the sole nexuses of continued contestation and popular upheaval, and for this reason the recent development of Lisbon can be deemed as evidence to some authors' claims that urban issues are and will further become the main frontier of subversive politics in the present and future (Harvey, 2012).

When we also consider the substantial investment in equipment, buildings and cultural events in the Intendente and Mouraria area during the last years, we can conclude that the public money that has been used by the Municipality in the rehabilitation project of Mouraria has had adverse effects for large sections of the population, especially the most disadvantaged and the working class, as well as the most precarious, marginalized or debilitated residents.

The touristification and gentrification of the city of Lisbon has not only entered into the collective consciousness of the Lisbon residents in particular, it is now a matter of national concern and attention. Conferences such as the Lisbon Architecture Triennale of June 2016, in which the urgent need to "stop the bleeding (of residents)" was mentioned, an event during which residents expressed their concerns, experiences and frustrations, while terms such as "expropriation" and "occupation" were used by attendees (Observador, 2016). Petitions with hundreds of signatures call for the "Stopping Local Accommodation", i.e., the halting of the building of new hotels, hostels and the like. Several collectives dealing with housing problems have arisen or are resurfacing, such as the Lisbon Solidarity Network, Morar Em Lisboa (Living in Lisbon Group), Stop Despejos (which can be translated to *Stop the Evictions*) or Habita, among others.

More recently, in March of 2018, hundreds took to the streets of Lisbon to protest speculative investment and inaccessibly high rents (Sol, 2018) in a protest called "Rock in Riot", an ironic reference to one of Lisbon's many music festivals, *Rock in Rio*.

In conclusion, the touristification, gentrification and subsequent housing crisis has become over the last years a target of growing academic and civic interest, it is the subject of media reports and attention, as well as becoming one of the most likely subjects to foster social movements made up of inhabitants and activists, some of which were formerly dedicated to other causes. The touristification and gentrification of the center of Lisbon has made considerations about some of the harmful dynamics of

capitalism and the effects of the housing crisis transcend the abstract sphere and become real, tangible, in many cases becoming even a preponderant factor of daily life for Lisbon's inhabitants. Housing is today a source of widespread revolt, and urbanism is unquestionably an area of study and practice with a growing political importance and an enormous potential for civic mobilization.

The AiMouraria project takes its name from a song that became famous for being played by Portugal's most iconic fado singer, Amália Rodrigues. The motto of the AiMouraria project is to "requalify the past to build the future". But the project is at its core is highly paradoxical - it actively seeks to gentrify Mouraria and therefore inevitably displacing considerable numbers of its poorer inhabitants by marketing it to the upper classes using three facets of a historical legacy that are the direct result of having been inhabited mainly by the layers the poorest of the inhabitants of Lisbon. First, Mouraria's historical past as a ghetto for Jews and Muslims is reinterpreted as a positive aspect, making it the "most multicultural neighborhood of Lisbon." Secondly, its association with Fado, historically a musical genre made and heard by the poor, which is transformed into an quasi-exotic cultural asset. Finally, its curvy, narrow and steep streets become colourful and emblematic architectural features, imbued with historical value and therefore of high urban value, the definitive business card for a cosmopolitan class that is looking for a more "genuine" urban experience. The paradox of AiMouraria is that the symbolic, cultural and urban characteristics that the poor have historically imprinted in Mouraria are now central factors behind the very same processes of gentrification that gradually pushes them out.

With regards to the new Mouraria square in particular, it is paradigmatic case that shows us the problems that arise from, on the one hand, the fact that participatory planning mechanisms are not yet sufficiently well developed and put into practice, and on the other, demonstrates some of the areas in which, at least for the time being, participatory planning simply cannot be implemented without compromising essential urban development projects.

We can also propose that the recent rebirth of resistance movements in Lisbon around the issues of urban development in general and housing issues in particular indicate that the drive for gentrification originated from the State's need to deal with a profound crisis of national scale, the financial crisis, and that in doing so it will have generated externalities and collateral damages, namely increased rates of evictions and displacement, to a degree that generated a lesser, and yet nonetheless substantial, wave of protests and acts of popular resistance.

We can safely conclude that the Portuguese political establishment, via the joint and coordinated efforts of the PS, PSD and CDS-PP political parties, referred to in national political jargon as the "Arch of Governance", tried to generate a national consensus around the need for reform the national economy along the lines set forth by the Troika's Adjustment Programme. In doing so, it placed the historical city centre of Lisbon first as the stage for mass protests and then for the stage of gentrification and displacement. It effectively responded to one crisis, the financial crisis, in such a way that generated a second, smaller crisis, the *gentrification crisis*. By trading one crisis for a smaller one, it reinforces notions that city development is the new frontier for the accumulation of capital and the pains of growth necessary for substantial economic reform or development within the current, capitalist mode of production (Harvey 1973, 2006 and 2008).

### 5.1.10 Security, Police Presence and Accessibility, and the “New Mosque”

The building of a supposed "New Mosque" in Mouraria, financed by the Municipality, is a paradigmatic case study of the municipality's role in the gentrification of Mouraria. However as we will see, far from being a project meant to benefit Lisbon's Islamic community, it is a project that can only be understood by taking into considerations the importance that concepts such as surveillance, policing and gentrification still hold in urban development as understood by local government, and above all, how the strategic importance of access and transportation in the city dictates the direction of development projects. In doing so, one then is led to come to the conclusion that the so-called "New Mosque" is a small, yet important part of an ambitious plan for the transformation of the entire Mouraria neighbourhood. It will cost about 3 million Euros, which represents about 0.4% of the Municipality's annual budget.

Let's look at the project's first goal. The first official Municipal document for the project, which at first is referred to as the “Mouraria Square”, dates from 2012, named 'Proposal No. 32/2012 - Deliberation of favourable opinion for the Preliminary Study for the Mouraria Square, located between Rua da Palma nº248-264 and Rua do Benfornoso nº 137-151 (Lisbon Municipality, 2012c), and mentions that "the need to create greater accessibility to Rua do Benfornoso has been identified." It mentions in section 5 that the Municipality identified "the need for creation of greater accessibility, not only physical but also visual, to Rua do Benfornoso and for a more effective intervention in the territory, framed in the objectives of the Mouraria Action Programme. This idea has gained consistency that was the possibility of creating a pedestrian crossing roughly in the middle of the Benfornoso Street... By demolishing the buildings referred (herein), a square is created, which allows the pedestrian crossing between the Rua da Palma and Rua of Benfornoso... The Municipality of Lisbon has identified the need to create a direct access point in the middle of Benfornoso Street, which from the South is accessible by a crossing of the Martim Moniz Square, and the North end of the Intendente Square". Only later in this same point 5 do we first encounter a reference to the Mosque, which is not the main objective of this intervention, but rather a secondary project that fits the need to create a new passageway, which also includes a new square.

Another important document of the project is "Proposal No. 628/2015" (Lisbon Municipality, 2015a), the first official proposal of the Lisbon Municipality with all the documentation necessary for the project to commence, which reinforces the need for better access and visibility to Rua Benfornoso. The fact that this project is part of an overall effort of a much greater ambition and scale is made explicit in this document. Only at a latter section of the document, from point (l) to point (p) does the intention of building a new mosque, and also of a multi-purpose hall become clear. Point (r) states that given the public interest of the Mosque project, the expropriation is deemed urgent.

The initial study (Lobo, 2012, 8) reinforces these points and points to the new public space and the new access point as the primary objective of the intervention. Not only is it clear that the mosque is a secondary project, but above all we realize that the opening of Rua do Benfornoso is important given the centrality of Rua da Palma and its continuation, Avenida Almirante Reis, in the city of Lisbon.



**Image 110 - The New Mosque Project (Público: 2016b)**

One of the Municipality's councillors, Manuel Salgado, in charge of city planning, summarized the project during the Municipality's meeting in which proposal 628/2015 regarding the new plaza was presented and discussed: "The project (seeks to) make the connection, so they are two bodies, then with an overhanging body, and that connects from Benfornoso Street to Rua da Palma through a square. It is an important project because of the function it will have, but it is also important because it creates a new access to the Mouraria neighbourhood, making it more permeable (to pedestrian access...) and thus (able) to give more security to the whole neighbourhood" (Lisbon Municipality, 2015b).

To understand the strategic importance of this new passageway, let us first see on a map the proximity between the new passageway and the local Police headquarters:



**Image 111 - The two points that new Square and passageway will connect as well as the location of the local Police headquarters**

Here are the two buildings in perspective (the purple square is the police station, while the buildings that will be demolished are in red):



**Image 112 - The perspective from the South looking Northwards showing where the new passage would be on the right, and the police station on the left**



**Image 113 - The proximity between the local Police headquarters and the future site of the Mouraria Square**

The "New Mosque" will also be a passageway that will give direct access to the police officers located in the Police headquarters in Rua da Palma to Rua do Benfornoso, a street with a history of crime and drug trafficking. The direct passage is also an important step so that the process of gentrification, which has so far swept the entire Martim Moniz Square, going up Rua da Palma, passing through Largo do Intendente and also conquering almost the entire Avenida Almirante Reis, the continuation of Rua da Palma, now beginning to spread to the adjacent streets, thus continuing the process and endangering the resistant nuclei of low income housing, local community life and local commerce. So far, drug trafficking and prostitution have taken refuge from the increased policing and influx of tourists and foreigners with greater purchasing power in the streets behind Rua da Palma and its continuation, Avenida Almirante Reis.

Many words of protest against the expropriation, the plans to build a new mosque and the general manner in which the process of expropriation and planning for redevelopment were can be seen in the walls of the expropriated buildings on the Rua do Benfornoso side. They read, among other messages, “Dr Fernando Medina (then President of the Lisbon Municipality) Islam does not allow for the building of a mosque if in so doing a person’s house is destroyed, we have nothing against the Bangladeshi Islamic community” and “Dr Fernando Media, without truthful criteria, there can be no justice”:



Image 114 - Some of the messages contesting the expropriation

In this context, we recall this mural, which has meanwhile been erased, on the wall of a building which used to house an Anarchist group, the Barbuda, also in Mouraria.



Image 115 - The Barbuda mural, Mouraria, which has since been erased.

We can read on this mural a summary of some of the problems relating to land use planning and urban planning in terms of political control and urban governance: "Town planning became one of the central problems for regimes emerging from the 1848 revolts in various European countries. The new, wide streets must make the unhealthy neighborhoods and alleys used by revolutionary movements disappear, while facilitating hygiene and maintenance of public order, and because the bullets do not know how to turn on the 1st street on the right. The ancient paths are widened, the facades are rebuilt, the irregular meshes are replaced by a regular design. The most important old buildings are spared, becoming monuments from the rest of the urban environment, as if they were in museum. Neighborhoods with a life of their own are transformed to be included in a network for the circulation of goods, a transit system that can serve capital's desire to move and show itself."

#### 5.1.11 Political Contestation and Recent Changes to the Project

Having contacted the expropriated person personally on several occasions, one can hereby state that the expropriated party has felt victimized by the whole process, and has felt so throughout the duration of a process that has dragged on for several years (Barroso, 2017; Barroso 2023). The change in the presidency of the Lisbon Municipality on the 27<sup>th</sup> of September of 2021 has provoked a change in the initial project and intentions of the redevelopment drive, which will further prolong this contentious issue.

In February of 2023 it was announced by the Lisbon Municipality that the original project was now on hold (Diário de Notícias, 2023) which in turn provoked publicism criticism from the main opposition force within the Council, the Socialist Party, regarding the apparent impasse that seemed to prolong itself (Observador, 2023).

Meanwhile some members of the Islamic community in Lisbon are allegedly calling for the Council to “honour its promise” and proceed with the construction of a new mosque (Rádio Renascença, 2023).

As of the writing of this study, and after having contacted the expropriated party once again, the expropriated party claims that there is a new informal possibility on the table in the form of a proposal on the part of the Lisbon Municipality, whereas of the two buildings previously marked for expropriation, only the smallest one will be expropriated. The owner of the buildings also states that the process of expropriation has resulted in him accruing debts on account of not being able to use the buildings and retrieve an income therefrom, which in turn validated and reinforces the idea presented throughout this study relating to how disruptive and potentially ruinous orthodox expropriation processes can be (Barroso, 2023), which then further substantiates one of this study’s underlying claims, which states the necessity for the development of alternative urban planning mechanisms that allow for more beneficial and flexible means with which to unlock contentious and contested urban planning projects. On account of these potential changes still being an ongoing process and also on account of their lack of validation via an official, publicly available proposal from the Municipality, for the effects of this particular study, one will be mostly referring to the original development project.

It is important to emphasize that what one will try, in the next section, to demonstrate is that applying the Sliding Puzzle Model in this situation can be an alternative that will potentially unlock the development drive, whilst making the main stakeholders be able to reach a resolution that is beneficial in both financial, political and urbanistic dimensions.

#### **5.1.12 Relocating António Barroso’s Garage Within Relative Proximity and Building the New Square and Mosque Using the Sliding Puzzle Model**

The primary consideration one would like to start the practical section of this case study is that the logic of the original academic publication outlining the logic and functioning of the Sliding Puzzle Model argues for the existence of a quota of empty space that relates to the projected necessity for development and redevelopment within a particular area. What follows is an application of the abstract, theoretical logic of the Sliding Puzzle Model, in a specific scenario. However beforehand it must be said that the Case Study which consists of the application of the Sliding Puzzle Model will consist of a scenario in which the initial conditions upon which one is intervening are not alike the ones that one has developed in the chapter with the Virtual Environments for the simple reason that in the scenario we do not have an initial empty space that is already designated to be used along the rules and logic of the Sliding Puzzle Model as developed in this Thesis and significant publications.

That leads us to a few considerations, the first of which is that in some cases, the following Case Study will identify an empty space that can be used for the purposes of initiating a Sliding Puzzle Model Cycle. But perhaps the most important initial conclusion that one is hoping becomes obvious as soon as we actually delve in detail into the real-life scenario of the “New Mosque” in Lisbon’s Mouraria neighbourhood, is that the Sliding Puzzle Model and its logic begins precisely, as mentioned, not simply by demonstrating the ability that a continuously existing empty space has insofar as unlocking potentially perpetual cycles of development, but also that the very inherent logic of keeping a quota of empty space to begin with, especially in neighbourhoods

that expectedly need development or redevelopment is in itself perhaps the biggest contribution the Sliding Puzzle Model has to offer. In doing so, it proposes that because of the ever-changing nature of the urban fabric, that we should not only expect but predict and account for the necessity of development initiatives that would be well served by the existence of a quota of empty space, and the case study regarding the dispute over the “New Mosque” demonstrates this from the beginning, i.e., how a bank of empty space (that continues to exist, unlike orthodox urban land bank which are just empty spaces that eventually get built on without ensuring the continuation of empty space elsewhere as a direct consequence of the usage of the initial empty space) would prevent a lot of disputes and expedite important development drives.

What follows is the development of an alternative development plan that would allow António Barroso to relocate his garage within relative proximity as well as for the project for the New Mosque, Passageway and Square as initially designed could still be built in the same place.

The 2017 study by Santos et al (2017, pp. 25) lists some of the key buildings in the Avenida Almirante Reis that are either abandoned or several degraded whilst also providing a useful study on the area. The first part of the study that one would hereby like to quote mentions the ubiquity of abandoned or derelict buildings in Lisbon, ascertaining that one in every ten buildings in Lisbon are abandoned, as it mentions:

"According to this list, Lisbon had approximately 2,812 buildings in the "partially vacant" category (derelict and with uninhabited units) and approximately 1,877 in the "totally vacant" category (abandoned and without a recovery license). These 4689 vacant buildings are equivalent to 8 per cent of the total of 60,000 buildings in the capital. In other words, almost one in ten properties is considered vacant."

The same study also points out that Avenida Almirante Reis and Rua da Palma are undergoing fast-paced transformation while being one of the least studied. The study also affirms that an old rent price freeze law had a considerable effect in the increase of abandoned buildings, in Lisbon and beyond (ibid, 26):

“In the city as a whole, this distribution pattern of vacant buildings is similar to other areas close to the centre, i.e. the largest number of vacant buildings is in the older buildings, which are the result of the old rent freeze law that occurred in both Lisbon and Porto, and which heavily penalised the rehabilitation and maintenance of the building stock. The number of pending inheritance cases also contributes to the lack of investment in the conservation and maintenance of buildings, which results in their deterioration.”

The following Tables are from the study (ibid, 27):

**Tabela 1 - Caracterização dos edifícios devolutos: proprietários**

Proprietário					
Edifícios	Estado e afins	Privados	Inst. s/fins luc.	Sem Info.	Total
Totalmente devolutos	16	61	2	18	97
Parcialmente devolutos	11	26	0	2	39
Total	27	87	2	20	136

**Tabela 2 - Estado de conservação dos edifícios devolutos**

Estado de conservação 2014/15							
Edifícios	Mau	Bom	Reabilitado	Novo	Em obra	Demolido	Dúvida
Totalmente devolutos	58	20	8	2	2	4	3
Parcialmente devolutos	36	0	0	0	1	2	0
Total	94	20	8	2	3	6	3

**Tabela 3 - Época de construção dos edifícios devolutos**

Edifícios	Época de construção		
	≤1945	1946-1960	>1960
Totalmente devolutos	88	5	4
Parcialmente devolutos	39	0	0
Total	127	5	4

**Tabela 4 - Uso comercial original e atual dos edifícios devolutos.**

Edifícios	Uso comercial no piso térreo		Variação	
	Original	Atual	Edifícios	%
Totalmente devolutos	42	13	-29	69
Parcialmente devolutos	27	9	-18	67
Total	69	22	-47	68

**Table 13 - Abandoned buildings in the Avenida Almirante Reis and Rua da Palma area in 2017. "Edifícios" means buildings, "Totalmente devolutos" means totally abandoned while "Parcialmente devolutos" means partially abandoned.**

We can conclude that in 2017 Lisbon was a city where identifying abandoned buildings should not prove difficult. At the time of writing, six years on, there are still many abandoned buildings that could be used for this alternative development plan.

Furthermore, these abandoned buildings could be dealt with in two ways, by either being rehabilitated, or by being demolished. In the event where they are rehabilitated, within the logic of the Sliding Puzzle Model, they can either be the target for redevelopment or be used as the place to transfer the function served by a current target for redevelopment. In the case of the expropriated garage, if an abandoned building that transformed into a functional garage, this would significantly reduce the costs of fulfilling the objective of relocation within relative proximity. It would also reduce the time spent, as rehabilitating a building takes less time than demolishing and building a brand new project.

We will proceed to outline two scenarios, scenario number one, whereby an empty space is found that is fit for being used to build a new building that will house the garage, and scenario number two, whereby an abandoned building is found that can be rehabilitated and used to transfer the functions of the garage to.

One will proceed to identify a building that could be used for the purposes of devising an alternative plan for the redevelopment of the new Praça da Mouraria, i.e.

the controversial “New Mosque”. In order for the Sliding Puzzle Model to be applied to this situation, seen as we already have a target for redevelopment (marked in Yellow in the Virtual Environment exercises we have seen), which is the expropriated garage itself, we now need an empty space that will serve as our initial empty space. However, if we start with a single empty space, after one Sliding Puzzle Cycle and having used it to relocate the expropriated garage, the result will be the New Mosque built in the target area for redevelopment and the relocated garage now being in the chosen initial empty space. However the logic of the Sliding Puzzle, indeed its central contribution, would not be fulfilled if we were simply electing an empty space to relocate the garage to, rather, it is the use of an empty space whilst finishing the Sliding Puzzle Model cycle with another empty space, which is what permits continuous redevelopment. So for the purposes of this scenario, two empty spaces will be identified.

Let us now look at the Lisbon Municipality’s numbers relating to abandoned buildings as of October of 2023 (Câmara Municipal de Lisboa, 2023a, pp. 12):

Edifícios totalmente devolutos	<b>999</b>
Edifícios parcialmente devolutos	<b>1 601</b>
Nº de frações devolutas	<b>5 816</b>
Edifícios parcial ou totalmente devolutos (%)	<b>5,3</b>
Frações devolutas (%)	<b>1,8</b>

<b>Estado de conservação</b> (avaliação UCT/CML)	Edifício total/ devoluto	Edifício parcial/ devoluto	Edifício devoluto
Desconhecido	2	5	7
Em Obra/Em construção	6	14	20
Péssimo	327	109	436
Mau	467	485	952
Médio	165	631	796
Bom	30	338	368
Excelente	2	19	21
<b>Total Geral</b>	<b>999</b>	<b>1601</b>	<b>2600</b>

<b>Estado de conservação mau e péssimo</b>	Edifício total/ devoluto	Edifício parcial/ devoluto	Edifício devoluto
Número de edifícios	794	594	1388
% do total de devolutos	79,6%	37,1%	53,4%

**Table 14 - Abandoned Buildings in Lisbon as of November of 2023. Totally abandoned buildings: 999, partially abandoned, 1601, percentage of partially or completely abandoned buildings: 5.3.**

The map showing where these abandoned buildings are is as follows, with the general area of interest highlighted within a green circle (ibid, pp. 13-15):

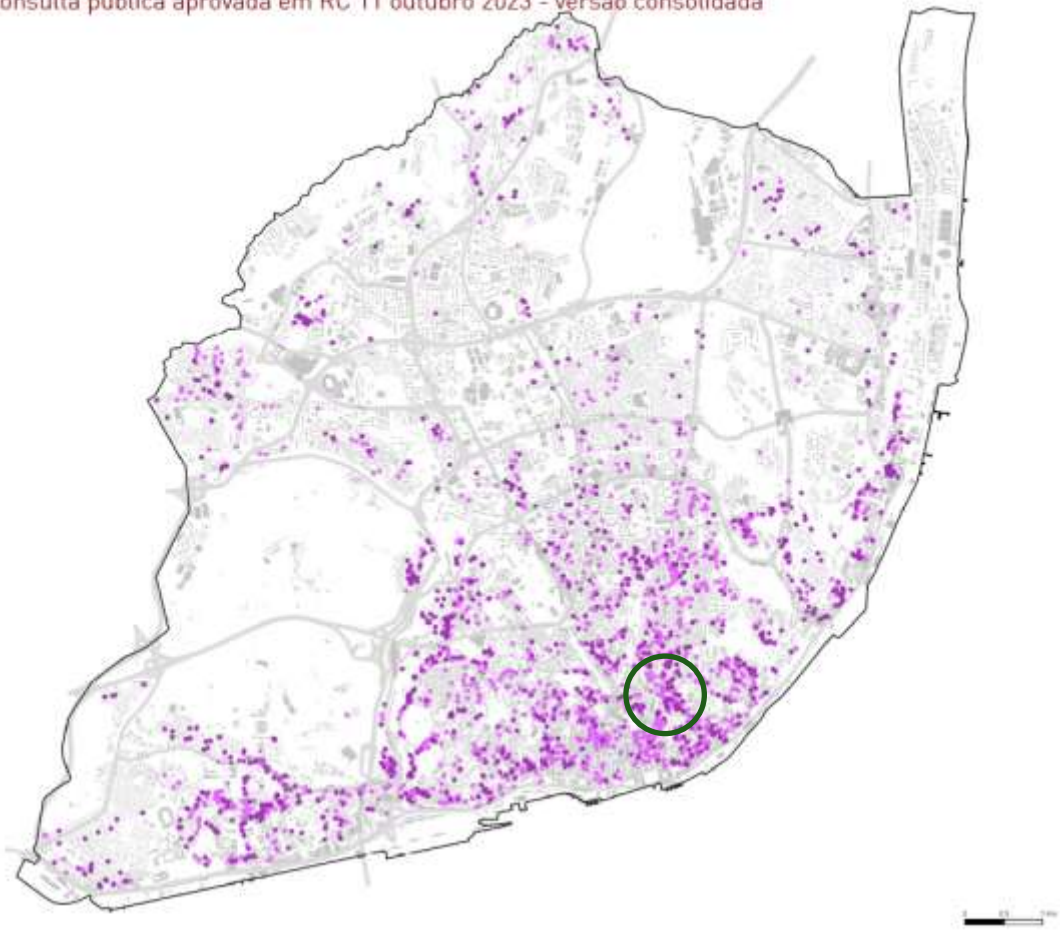


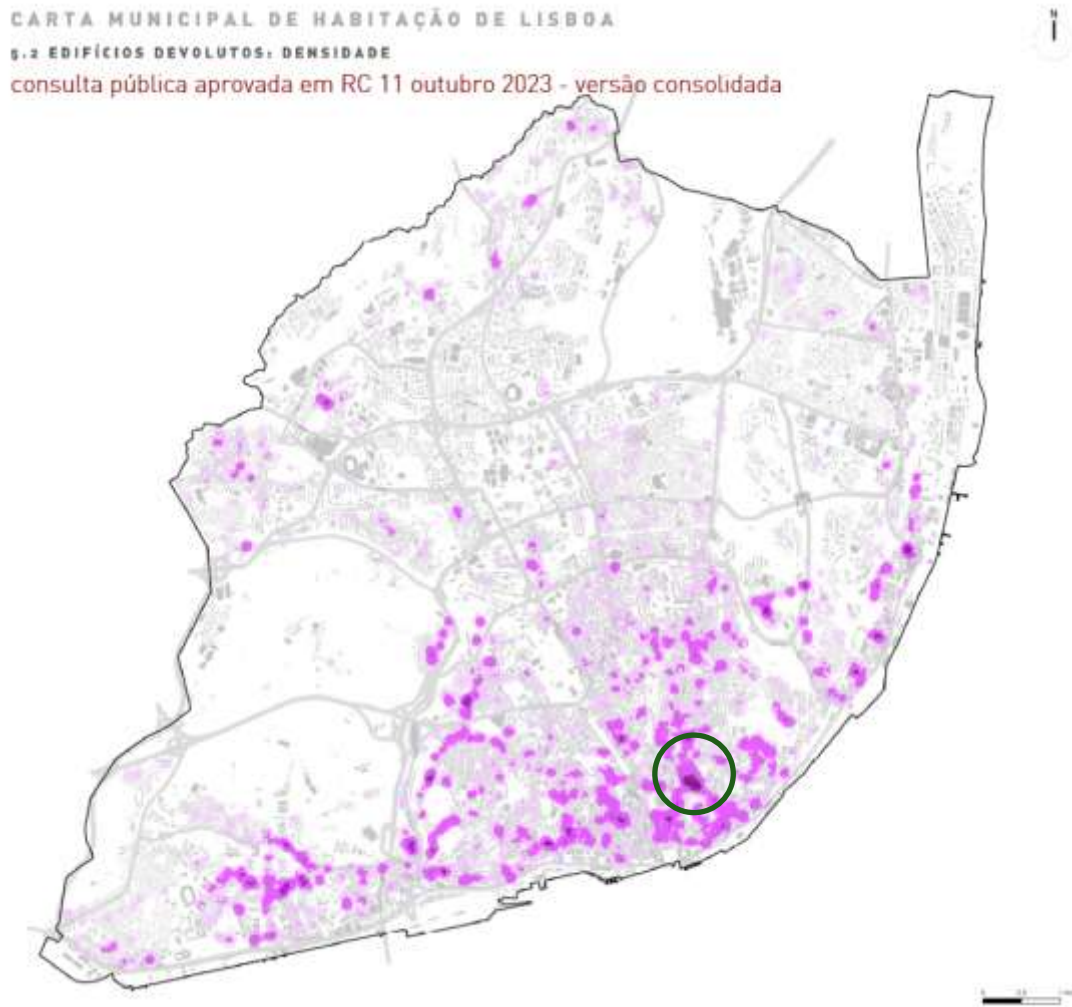
Image 116 - Abandoned buildings in Lisbon, completely abandoned in purple, partially abandoned in light purple (Câmara Municipal de Lisboa, 2023b, pp. 13)



Image 117 - Close-up of area of interest, abandoned and partially abandoned buildings (ibid)

As one can see, the general area around the planned location of the new square and mosque has a relatively high quantity of abandoned buildings. And as we will see

in the following similar maps, this area not only has a high *quantity* of abandoned buildings, it has a high *density* and *concentration* of abandoned buildings.

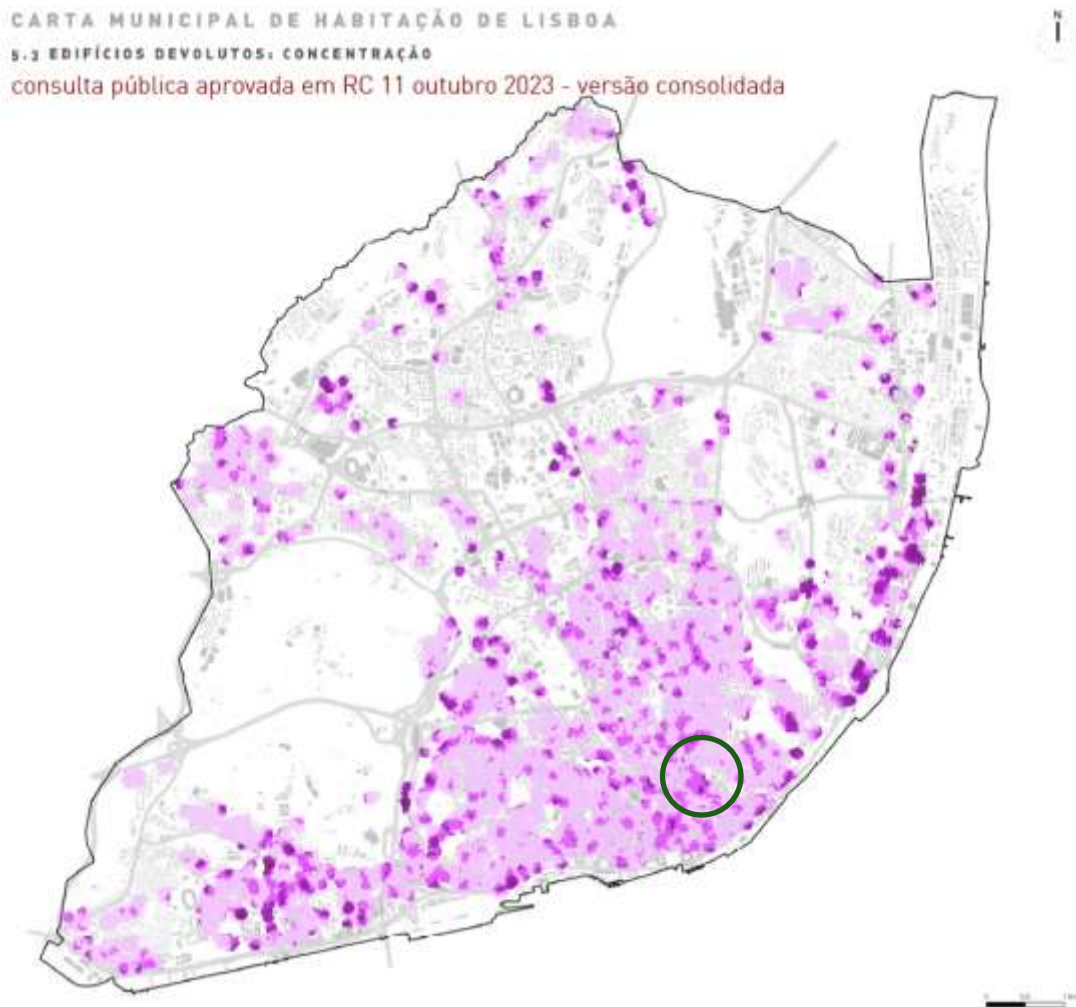


**Image 118 - Density of abandoned or partially abandoned buildings in Lisbon, with higher density in darker purple. The area with the largest and most density of abandoned buildings is within the area of interest (Câmara Municipal de Lisboa, 2023b, pp. 14)**



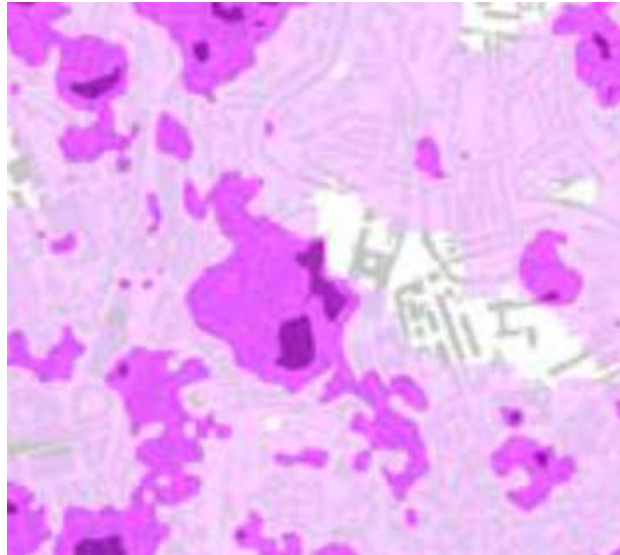
**Image 119 - Close-up of area of interest, density of abandoned or partially abandoned buildings (ibid)**

The density of abandoned buildings and its clusters are, as we can see, consistently in the same locations across these different maps.



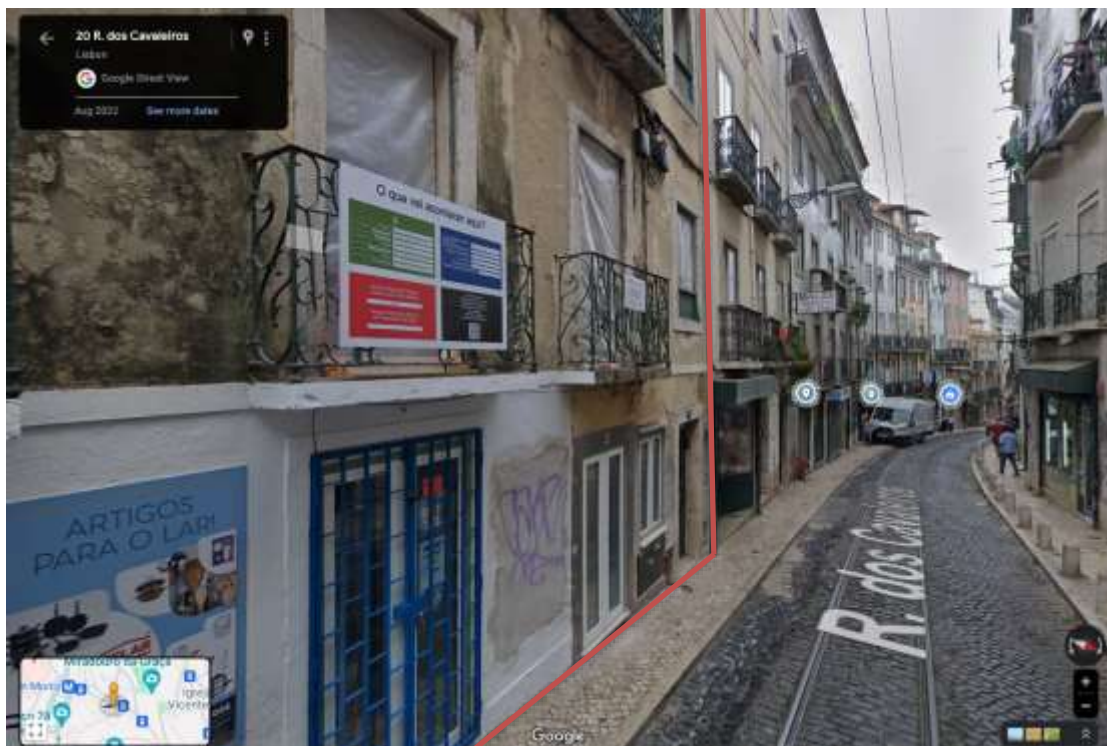
**Image 120 - Concentration of abandoned or partially abandoned buildings in Lisbon, with higher concentration in darker purple (Câmara Municipal de Lisboa, 2023b, pp. 15)**

The map above shows that there is a considerable concentration of abandoned buildings within relative proximity of the location of interest. In the map below, which zooms in on our target area, we can see several clusters with a high or very high concentration of abandoned buildings. The high quantity of abandoned buildings alongside the need for more and more accessible housing was very much at the centre of the initiative to augment taxes on abandoned buildings via the “Decreto-Lei n.º 67/2019, de 21 de maio” (Diário da República, 2019), which seeks to “Increase the municipal property tax on vacant buildings in areas of urban pressure”, while our area of interest is within one such area, while the general law that defines what an abandoned building is from 2006 (Diário da República, 2006).



**Image 121 - Close-up of area of interest, concentration of abandoned or partially abandoned buildings (ibid)**

Let us now draw some very specific conclusions about the clusters of abandoned buildings we see across these maps. The one usually appearing in the centre is in and around the “Largo da Severa” square. This area is actually made up of some pedestrian-only streets that cars can’t drive through, and the main street that is drivable that runs through this particularly large and dense, central cluster of abandoned buildings is Rua dos Cavaleiros, whilst Rua dos Terreirinhos also has many abandoned buildings. Let us see an example of what an abandoned building in Rua dos Cavaleiros may look like, taking into account the general topology of the streets, its width or general lack thereof, as well as the relative steepness of the street. One would argue that this is not the best location for relocation purely based on its urban morphological and topographical inadequacy.



Based purely on location, one specific set of buildings that could have been used for the purpose of relocating Antonio Barroso’s garage are located very close to the location of Antonio Barroso’s current property, in Largo do Intendente, less than 200 meters north, right at the end of the Benfornoso street and at the beginning of the Largo do Intendente.

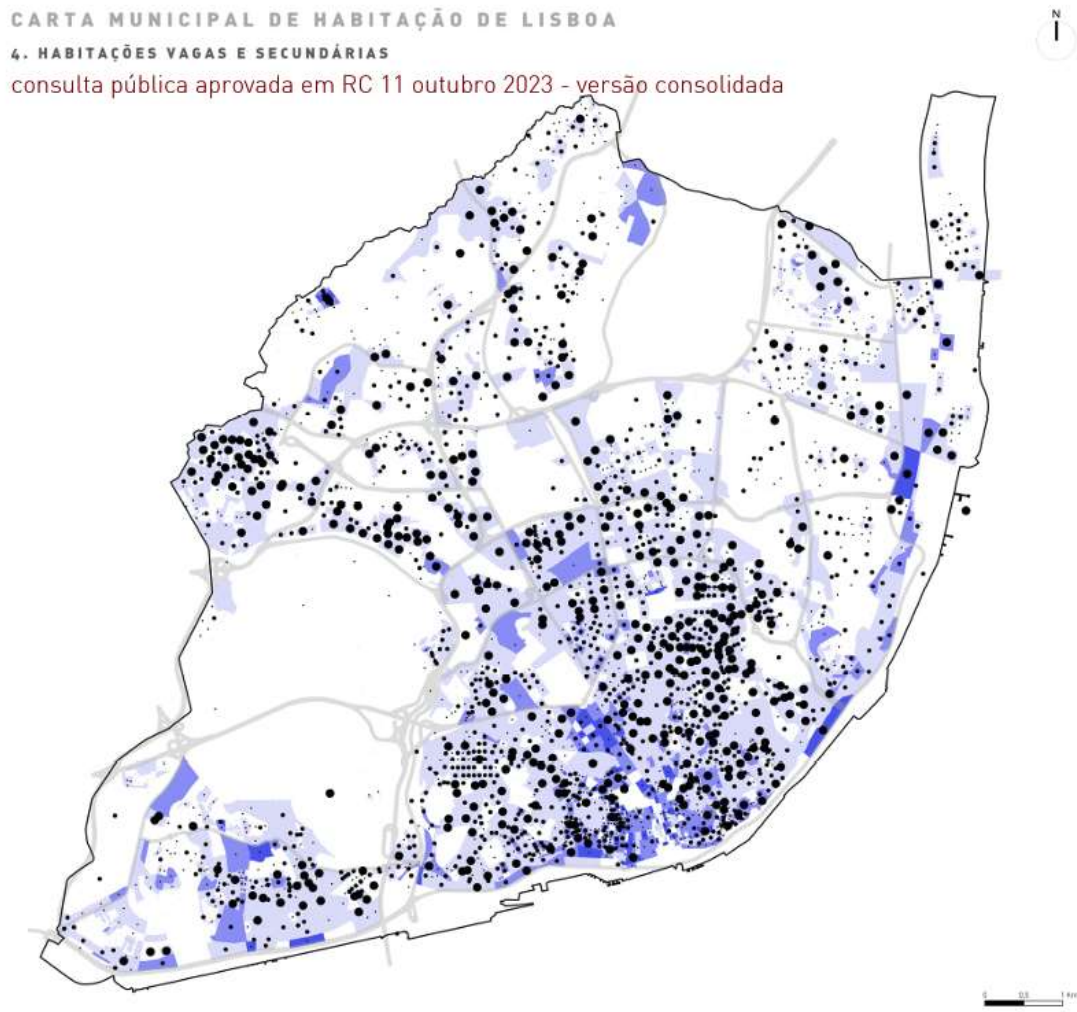


This area is relative to this location pointed out in green below, and as we can see it is in one of the clusters of abandoned buildings:



**Image 122 - Close-up of area of interest, concentration of abandoned or partially abandoned buildings (ibid), this time with the series of abandoned buildings in Largo do Benfornoso, with a circle in green indicating their location (Câmara Municipal de Lisboa, 2023b, pp. 15)**

Though perhaps not as directly useful and relevant for this particular Case Study and exercise, one may also include hereby a map of empty and secondary housing- it seems very much evenly distributed throughout the Municipality:



**Image 123 – A map with empty and secondary housing (ibid, pp. 11)**

There are also some publicly-owned buildings which are mapped as having potential for being reconverted into housing- though not all buildings listed under this category will be fit, on account of their typology, for the case study and purpose of relocating António Barroso garage, it is still worthy of mention as the majority of the logic and calculations pertaining to the Sliding Puzzle Model as we have exposed it thus far pertains to housing. Furthermore, it is possible that among these buildings hereby listed one can find one or several that are fit for this purpose. Let us then see how the overall distribution looks within the Lisbon Municipality (ibid, pp. 24):

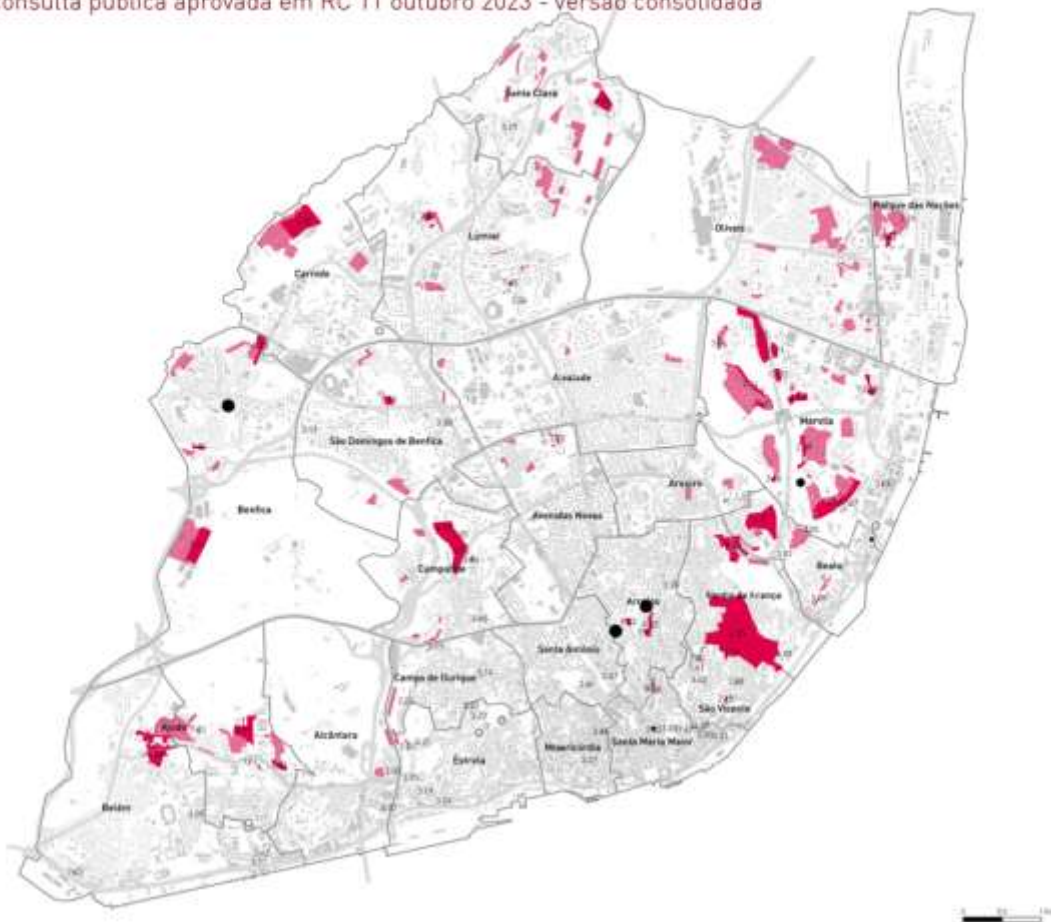


Image 124 - Publicly-owned buildings with the potential to be converted into housing (ibid)

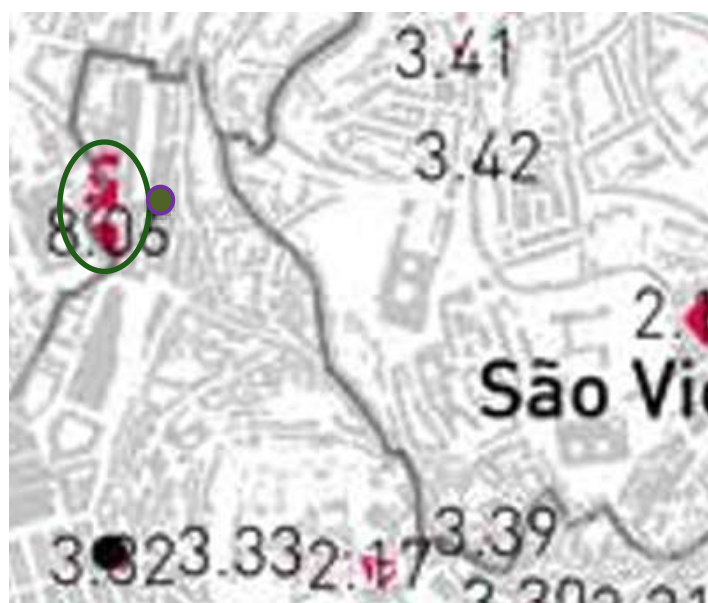


Image 125 - There is a set of buildings which immediately call out our attention, to the west and southwest of our area of interest, at the beginning of the Rua da Palma and seemingly within the Santa Maria Maior parish, marked in the map with a green circle, which may be useful if these are to be used in any property swap arrangement with António Barroso. His garage is marked

with a green dot- as we can see, this set of publicly-owned buildings is right across the Avenue Avenida Almirante Reis Avenue (ibid)

The set of publicly-owned buildings across the street from Rua da Palma 248 is of obvious interest within the context of our specific objective, which is to find buildings or empty spaces that could be used for the purpose of relocating António Barroso’s garage. One can’t help but to notice the small white building across the street, at 191 Rua da Palma, though it does not seem to be publicly-owned itself.

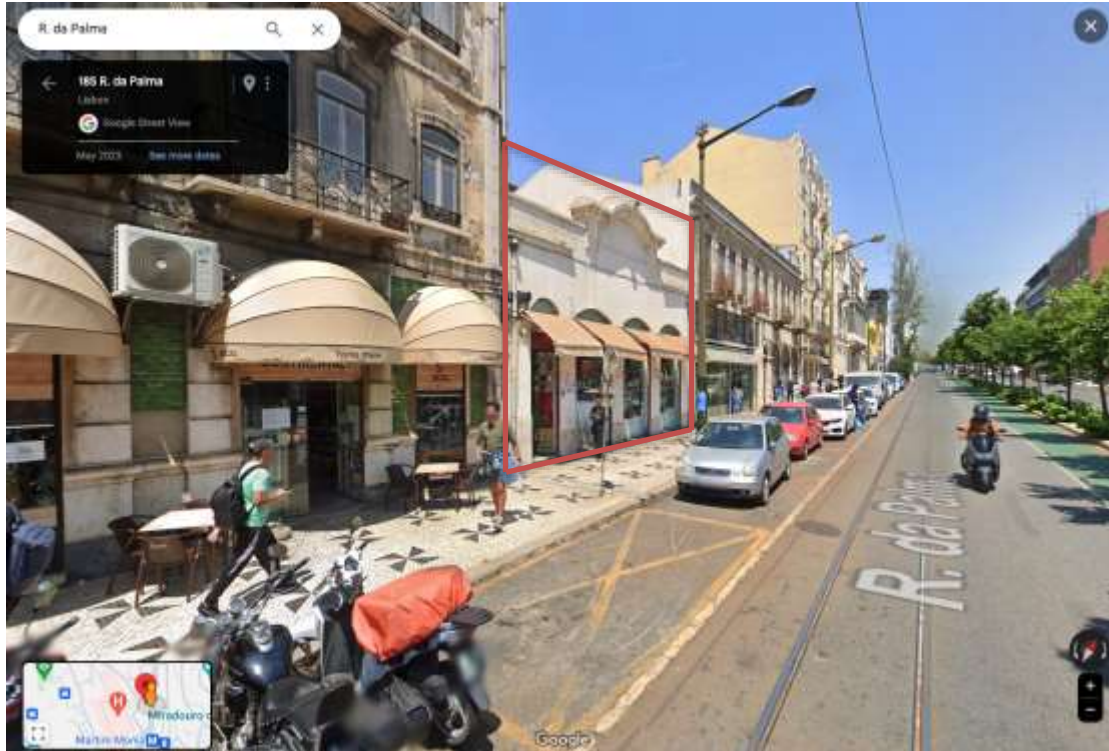
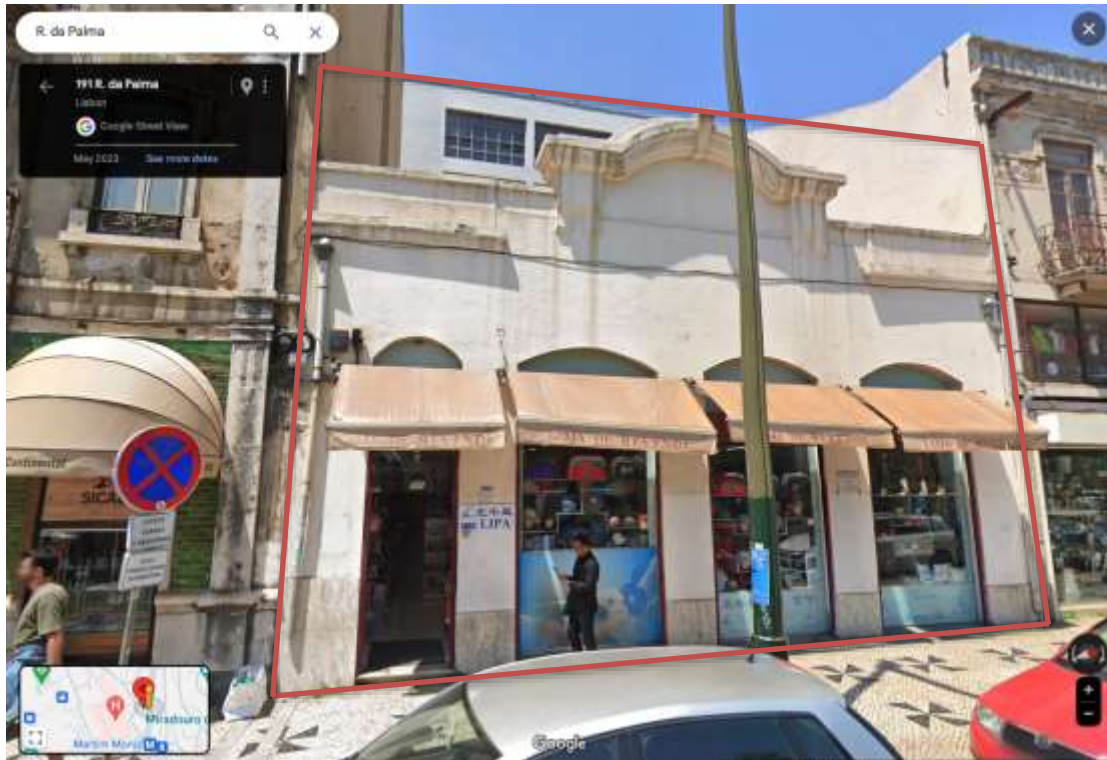


Image 126 – The building located at 191 Rua da Palma stands out for only having one floor

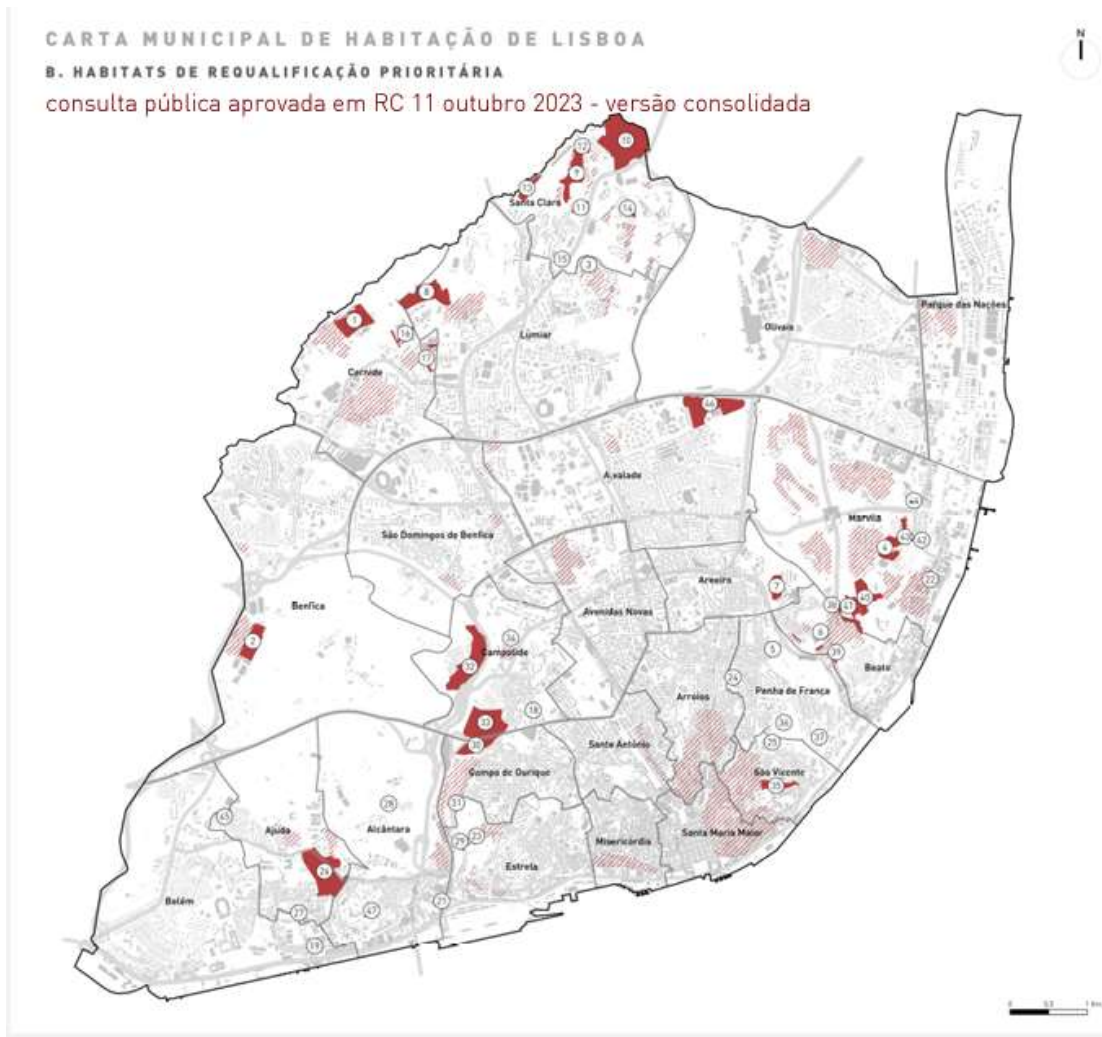


**Image 127 – Regardless of its ownership, typology and hence regardless of its adequacy for being an ideal target for redevelopment and relocation of António Barroso’s garage, one can’t help but to notice this very low height building located in a strategic place within our area of interest**

Regardless of who owns it, the building at Rua da Palma 191 is a perfect example of a building that could be redeveloped using the logic of the Sliding Puzzle Model, its very low height of a single floor within an obviously coveted urban area makes it a prime target for redevelopment, represented in yellow in the virtual environments produced within this Thesis, and which we will also use later in this particular case study and exercise.

This study will not go as far so as to identify one particular building or empty space and propose it outright as the ideal location for the relocation of António Barroso’s garage within relative proximity, however, taking an actual look at some potential buildings of interest within our area of interest was judged to be relevant insofar as it allows us some degree of vision as to the kinds of buildings that one is likely to find within our area of interest, whilst offering some valuable perspective into how the actual application of the alternative hereby proposed might actually come to look like. For the most part, however, this study satisfies itself by driving the point that the high amount, density and concentration of buildings that could be used for the intended effect alongside other considerations relating to housing rental prices, housing pressure as well as other factors make the solution hereby proposed not only viable, but rational and expedient.

The area of interest is also considered as one of the “neighbourhoods and zones prioritized for intervention”, but not within those considered as being among those which are marked for prioritized requalification (ibid, pp. 26):



**Image 128 – Zones marked as “neighbourhoods and zones prioritized for intervention” are in light red stripes while zones identified as needing prioritized requalification are in red- our area of interest is marked within a neighbourhood and zone prioritized for intervention (ibid)**

Let us now explore the theme of publicly-owned buildings within the Lisbon Municipality further. As we will now see, the Lisbon Municipality owns an extensive and impressive amount of properties in the area of its jurisdiction.

CARTA MUNICIPAL DE HABITAÇÃO DE LISBOA

2.1 PATRIMÔNIO EDIFICADO PÚBLICO

consulta pública aprovada em RC 11 outubro 2023 - versão consolidada

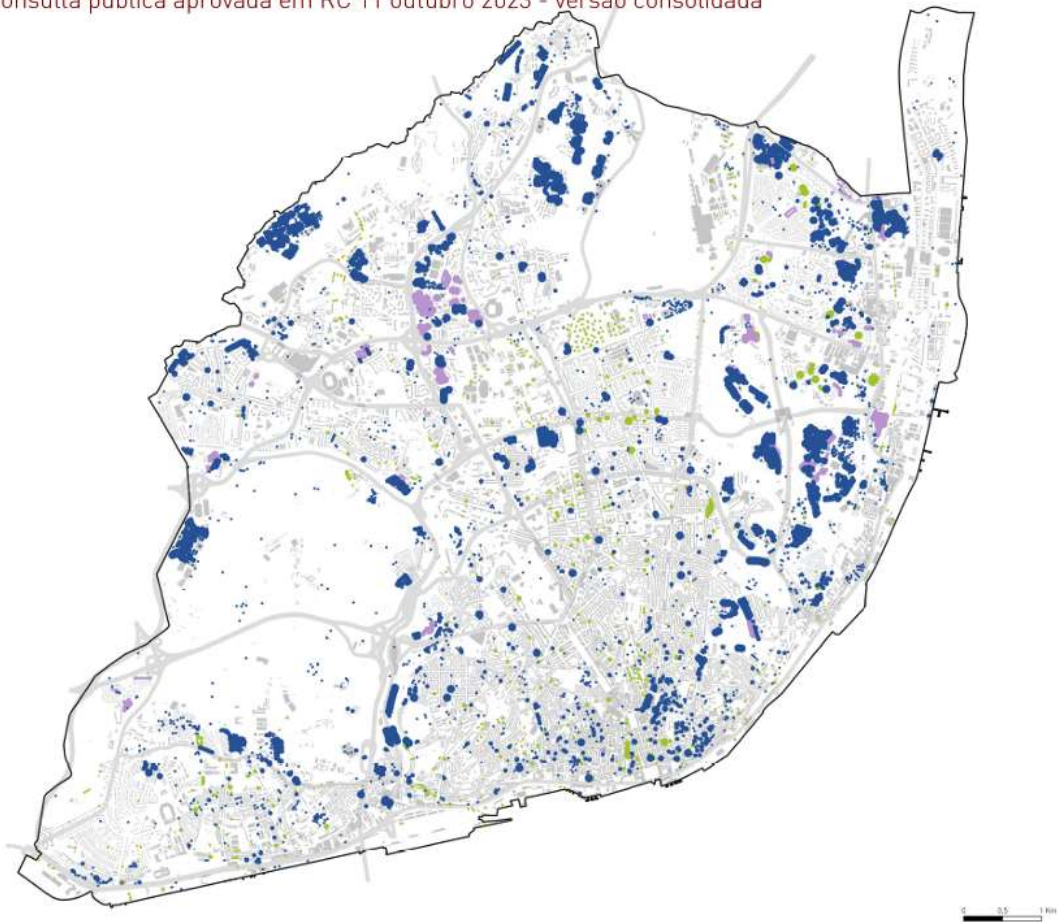


Image 129 - Publicly-owned buildings (ibid, pp. 6)

## LEGENDA

### Patrimônio Edificado Público

- Edifício municipal
- Patrimônio municipal cedido em direito de superfície
- Edifício do estado

### N.º de Frações

- 1 a 5
- 6 a 15
- 16 a 25
- superior a 25

### Edificado público (habitação e outros usos):

#### Patrimônio Municipal

N.º de edifícios 5 627

N.º de edifícios clássicos 4 466

#### Patrimônio Municipal cedido em Direito de Superfície

N.º de edifícios 551

N.º de edifícios clássicos 551

#### Patrimônio do Estado

N.º de edifícios clássicos 782

**Image 130 - Publicly-owned buildings, key. Patrimônio Municipal- Municipally-owned: N.º de edifícios- number of buildings, N.º de edifícios clássicos- number of classic buildings. Patrimônio Municipal cedido em direito de superfície- Municipally-owned buildings with use granted to third parties. Patrimônio de Estado- State-owned (ibid)**

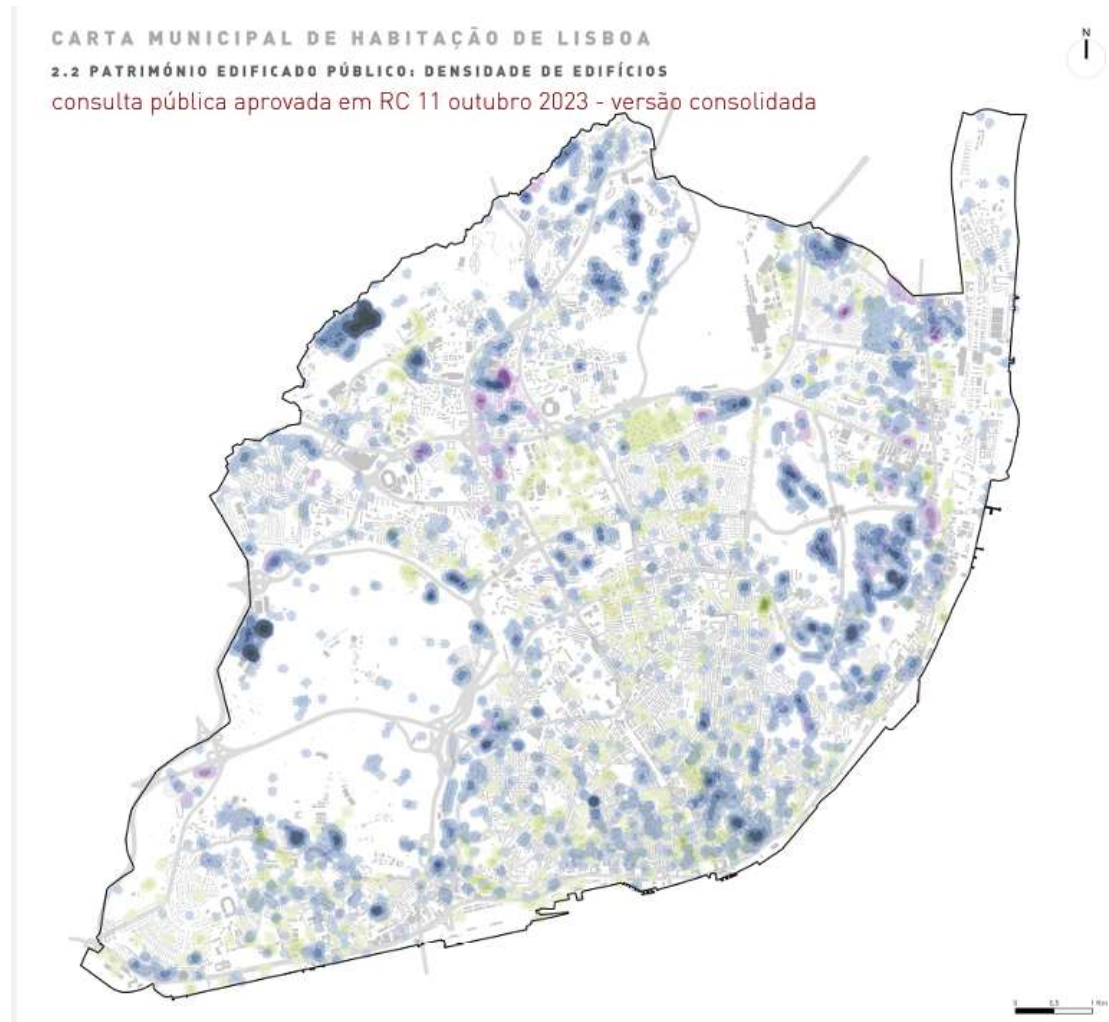


**Image 131 - Close-up of publicly-owned buildings. Our area of interest has a very high quantity, density and concentration of publicly-owned buildings as can be confirmed in the following maps (ibid)**

Let us now look at the same map, but with the location of António Barroso’s garage marked with a green dot with purple outlining.



**Image 132 - Close-up of publicly-owned buildings in our area of interest, now with the location of António Barroso’s garage marked with a green dot with purple outlining**



**Image 133 - Publicly-owned buildings, density of buildings (ibid, pp. 7)**



**Image 134 - Publicly-owned buildings, density of buildings, key. Edifício Municipal- Municipally-owned building. Edifício Municipal cedido em direito de superfície- Municipally-owned building with use granted to third parties. Edifício Estado- State-owned building (ibid)**

CARTA MUNICIPAL DE HABITAÇÃO DE LISBOA

2.3 PATRIMÔNIO EDIFICADO PÚBLICO: CONCENTRAÇÃO DE EDIFÍCIOS

consulta pública aprovada em RC 11 outubro 2023 - versão consolidada

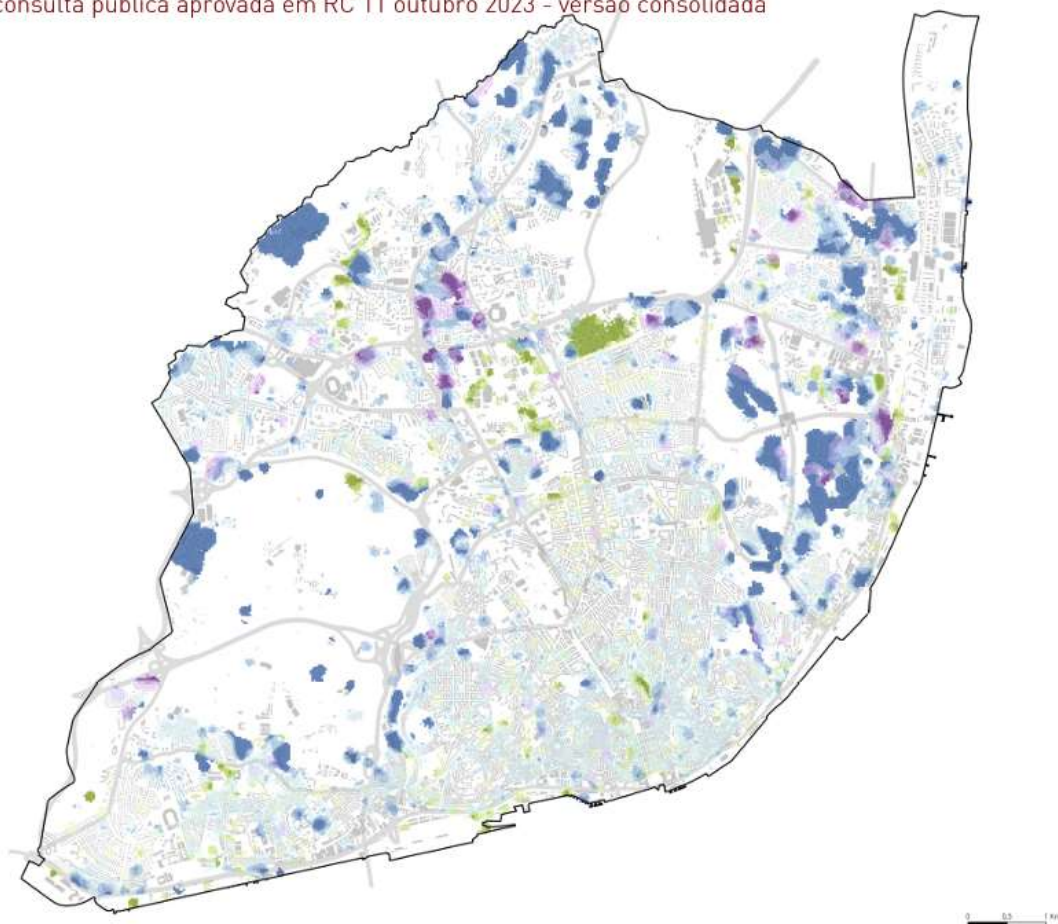


Image 135 – Publicly-owned buildings, concentration of buildings (ibid, pp. 8)

## LEGENDA

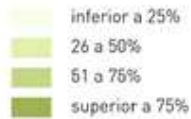
### Edifício Municipal [%]



### Edifício Municipal Cedido em Direito de Superfície [%]

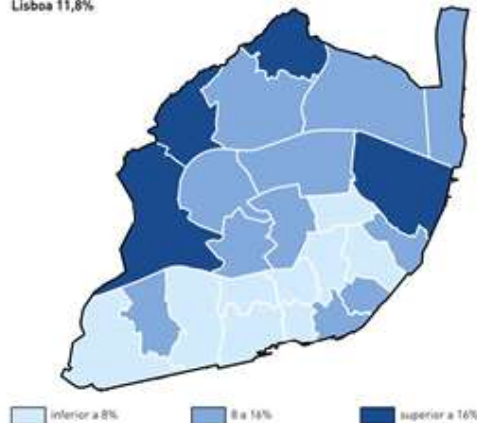


### Edifício Estado [%]



### PERCENTAGEM DE PATRIMÓNIO EDIFICADO PÚBLICO (EDIFÍCIOS CLÁSSICOS)

Lisboa 11,8%



Fonte:  
Cadastro geométrico e ficheiro georreferenciado de caracterização do edificado, DMOP/CMML,  
2022

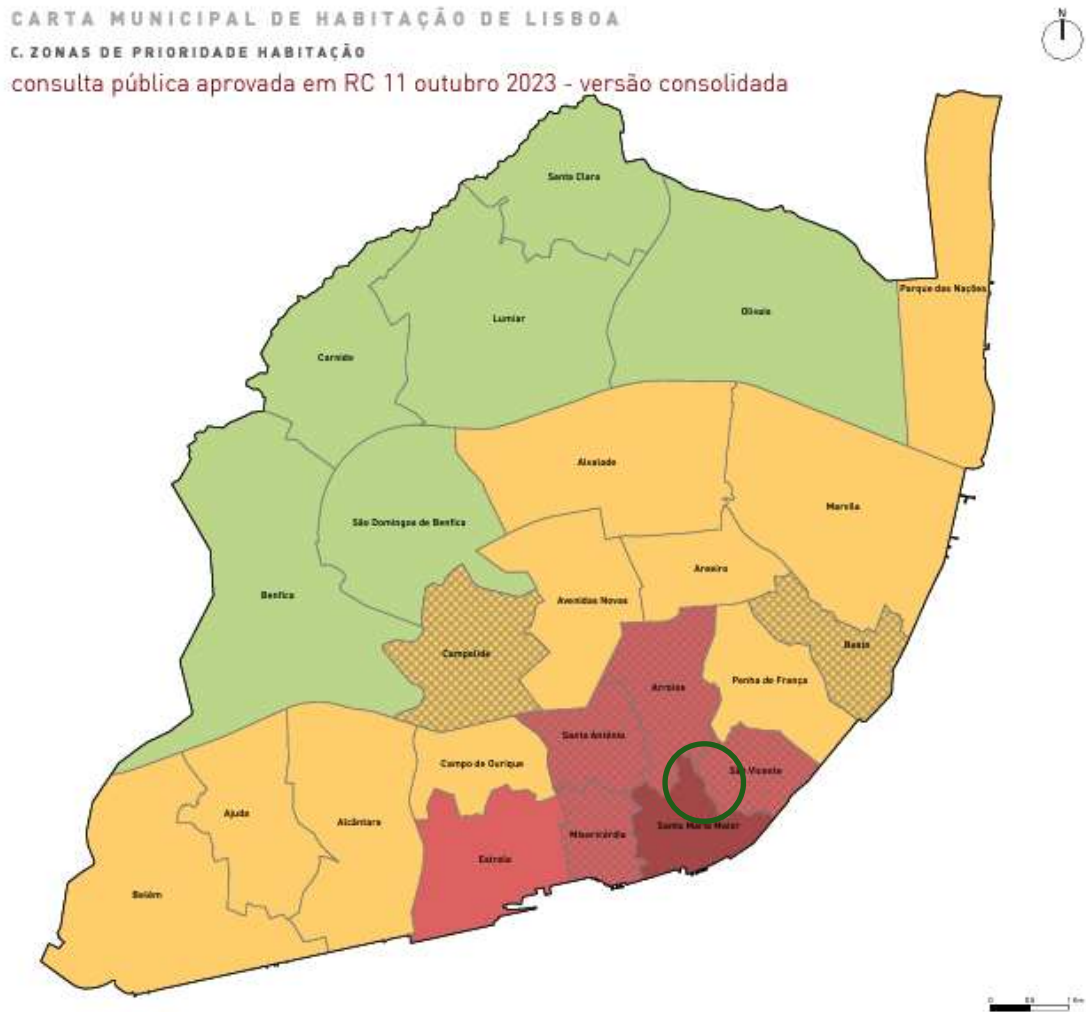
1:45 000

**Image 136 - Publicly-owned buildings, concentration of buildings, key. Edifício Municipal- Municipally-owned building. Edifício Municipal cedido em direito de superfície- Municipally-owned building with use granted to third parties. Edifício Estado- State-owned building (ibid)**

We can therefore also conclude that there is a high quantity, concentration and density of publicly-owned buildings within our area of interest, and indeed many seem to be in locations that would make them potential targets for redevelopment and in this case, to be used to relocate António Barroso's garage. A publicly-owned building, specially if it belong to the Lisbon Municipality, would be ideal for the relocation of Antonio Barroso's garage, and even more so if its typology makes it so that little

redevelopment of the building itself would be required in order for it to successfully fulfil its new intended function.

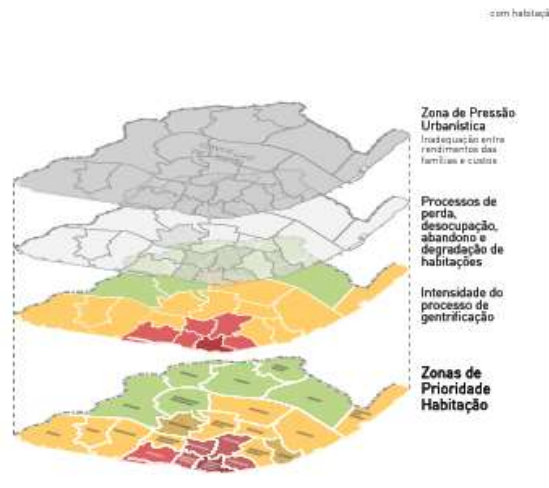
One should also note that the Lisbon Municipality considers the area of interest as being well within three parishes that it lists as being among the six parishes that are “housing priority zones” (“zonas de prioridade de habitação”), Santa Maria Maior, Arroios and São Vicente, with Santo António, Misericórdia and Estrela being the other three.



**Image 137 - Zones considered to be of priority when it comes to housing needs and issues (for key, please see next Image, Câmara Municipal de Lisboa, 2023b, pp. 27)**

## LEGENDA

### Zonas de prioridade habitação



**Image 138 - Housing Priority Zones (ibid)**

The annex of the Lisbon Municipality’s Housing Charter from 2023-2032 (Câmara Municipal de Lisboa, 2023c, pp. 1) explains the logic and criteria behind the Housing Priority Zones thusly:

“The delimitation of the PHZs is based on careful indicators that reveal the intensity of several key factors, such as gentrification, loss of housing, abandonment or degradation of buildings and urban pressure, defined as the level of access to the rental market for housing appropriate to the income of Lisbon’s families. These criteria help us to identify the areas most in need of immediate attention and intervention.

The ZPH map of Lisbon recognises the contrasting realities regarding the state, use, price and dynamics of the housing stock, thus allowing intervention in the housing market to be adjusted to the characteristics of each area, enhancing its use for: locating investment priorities or incentives for the promotion of public and private affordable housing, regulation of Local Accommodation activity, intensity of support or incentives for the rehabilitation of housing buildings and intensity of support for affordable rentals.”

It continues to list the phenomena and variables that it considers (ibid, pp. 2):

“In order to territorialise these phenomena, the following conceptual plans of the Municipal Housing Charter have been defined:

- I. Areas subject to gentrification
- II. Territories subject to population loss and loss of available and adequate housing

- III. Territorialisation of the level of access to the housing market
- IV. Territorialisation of the quality of urban life in Habitats”

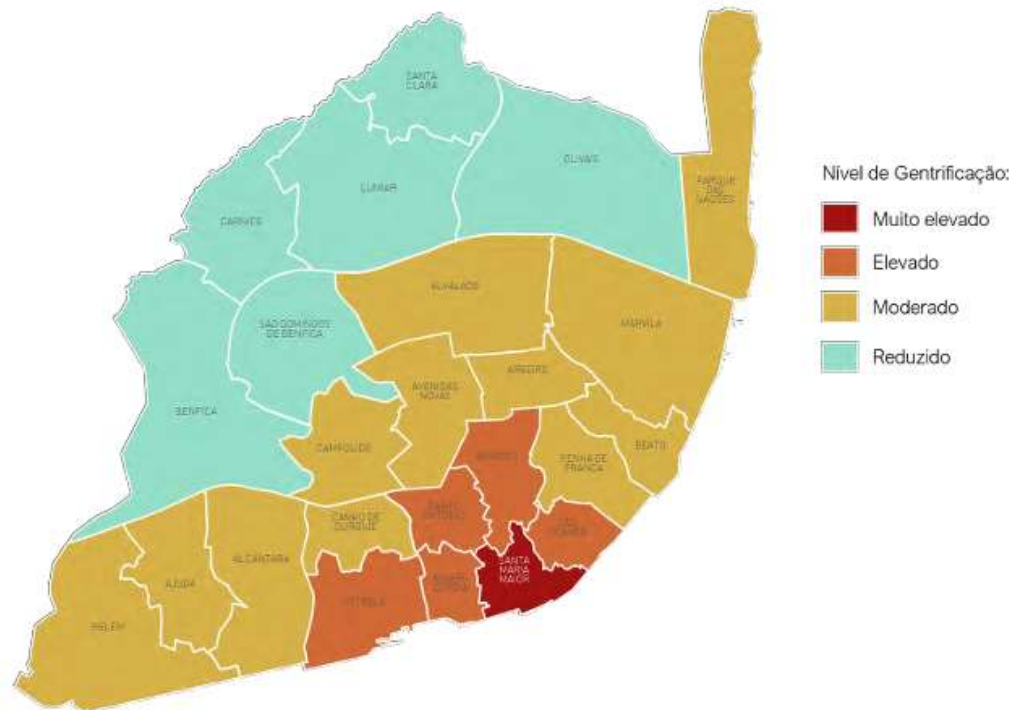
The same report (ibid) further goes on to state some of the diagnoses and analyses alongside some of the priorities that result therefrom in the following manner, which as one will notice, aligns itself with some of the axioms that underline the development of the Sliding Puzzle Model itself:

“This process can take various forms according to the geographies in which it occurs. In the city of Lisbon, it is argued that two forms of gentrification prevail, one that stems from the phenomenon of touristification and the transformation of the built environment according to the needs of tourist demand, which replaces permanent residence (Mendes, 2018; Cocola-Gant & Gago, 2021) and a form of gentrification that results from international migration and the temporary or permanent settlement of people with higher incomes (Mendes, 2019).

The process of gentrification follows a process of abandonment and physical and social degradation of urban centres, in which there is a high potential for generating capital gains through an increase in real estate value that justifies the application of investment capital in the revitalisation of the territory, based on the income of a potential demand that is significantly different from current demand.

The processes described cover areas that were initially depressed and with greater economic accessibility to permanent housing, forcing tenants with contractual flexibility to face high economic pressure to maintain their housing and a high risk of being expelled to other geographies with a detrimental effect on their quality of life.”

The study goes on to note that “The mapping of the categories referring to the levels of gentrification shows a radiocentric arrangement”, a disposition which of course has been widely referred to in one’s own publication “Do People Dream of Radio Centric Cities (as urbanists often do)? Opportunities and Dangers of Contemporary Urban Utopias and Dystopias” (Silva Jordão 2018b), and this radiocentric pattern can indeed be confirmed in the map that follows, which has Santa Maria Maior as the parish with the highest level of gentrification (Câmara Municipal de Lisboa, 2023c, pp. 8):



**Image 139 - Parishes within the Lisbon Municipal area by levels of rates of gentrification (Muito Elevado- Very High, Elevado- High, Moderado-Moderate, Reduzido, Reduced, Câmara Municipal de Lisboa, 2023c, pp. 8)**

So we have ascertained that our area of interest is specifically within Santa Maria Maria Maior, generally well within an area with a high quantity, density and concentration of abandoned buildings, is divided between three parishes within the Housing Priority Zone, and is also among the areas with greatest rate and risk of gentrification. However, it is also among the areas which has lost the most capacity for housing, namely (ibid, pp. 9):

“The spatialisation of phenomena of emptying or abandonment of the city's housing stock are, in a similar way to gentrification, understood by associating statistics on the dynamics of the number of dwellings and the use of the housing stock that require a composite indicator for comparative assessment of each of Lisbon's parishes. To assess this process, the following set of indicators was defined:

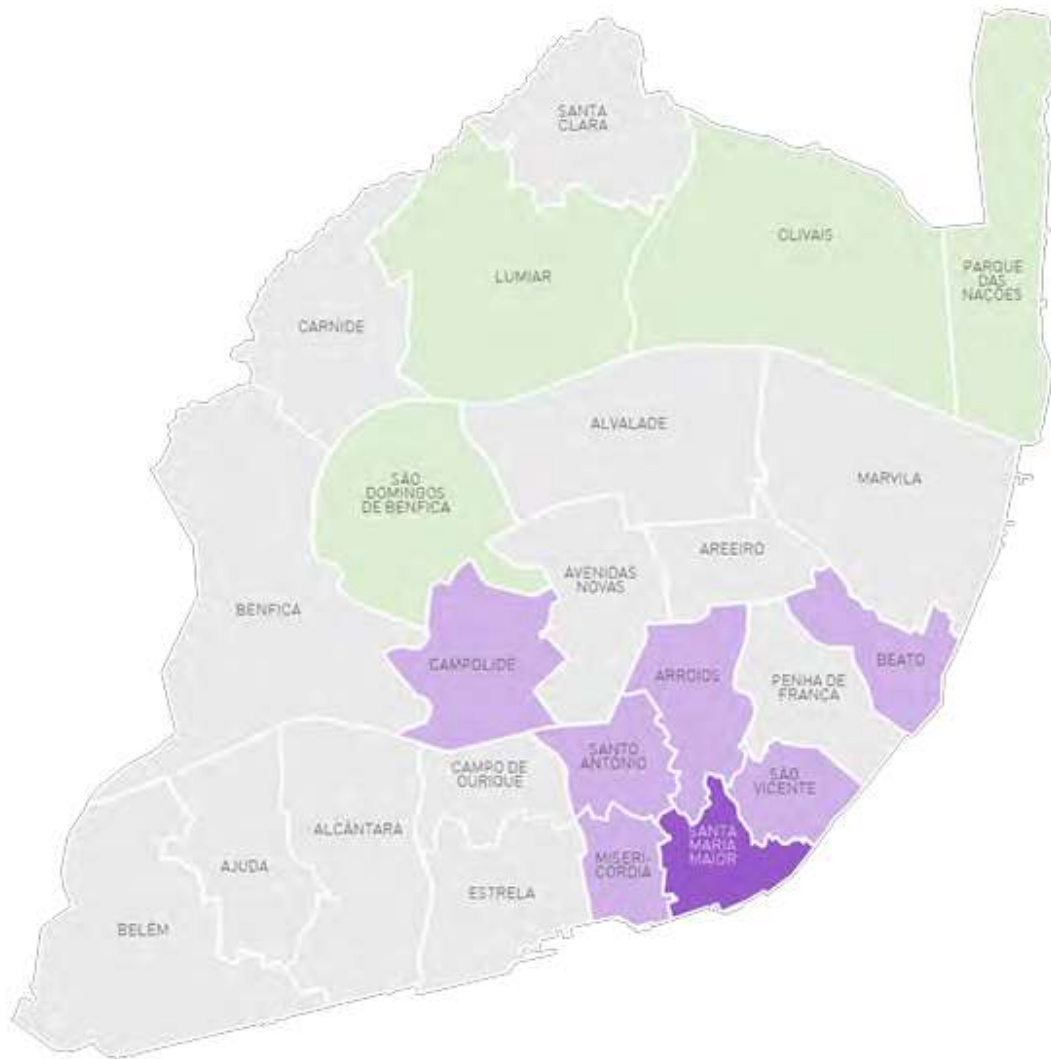
- Loss of dwellings
- Vacant or unoccupied dwellings
- Deteriorated dwellings”

The table that then analyses the parishes and gives them a rating of loss of housing capacity as follows:

	Valor do Indicador	Nível de perda, abandono ou degradação de habitação
AJUDA	0,57	Dinâmica reduzida
ALCÂNTARA	0,59	Dinâmica reduzida
BEATO	0,73	Perda fraca
BENFICA	0,50	Dinâmica reduzida
CAMPOLIDE	0,73	Perda fraca
CARNIDE	0,57	Dinâmica reduzida
LUMIAR	0,33	Crescimento fraco
MARVILA	0,54	Dinâmica reduzida
OLIVAIS	0,35	Crescimento fraco
SÃO DOMINGOS DE BENFICA	0,31	Crescimento fraco
ALVALADE	0,46	Dinâmica reduzida
AREEIRO	0,60	Dinâmica reduzida
ARROIOS	0,66	Perda fraca
AVENIDAS NOVAS	0,51	Dinâmica reduzida
BELÉM	0,47	Dinâmica reduzida
CAMPO DE OURIQUE	0,55	Dinâmica reduzida
ESTRELA	0,58	Dinâmica reduzida
MISERICÓRDIA	0,73	Perda fraca
PARQUE DAS NAÇÕES	0,36	Crescimento fraco
PENHA DE FRANÇA	0,43	Dinâmica reduzida
SANTA CLARA	0,54	Dinâmica reduzida
SANTA MARIA MAIOR	1,00	Perda forte
SANTO ANTÓNIO	0,69	Perda fraca
SÃO VICENTE	0,65	Perda fraca

**Table 15 - Parishes and their respective rating of loss of housing capacity, housing abandonment and degradation (Perda forte- heavy loss, perda fraca- light loss, Dinâmica reduzida- negligible change, Crescimento fraco- light gain. Câmara Municipal de Lisboa, 2023c, pp. 13)**

The three parishes that our area of interest is inside of are among the seven that showed a heavy or light loss, in this case the other four being Beato, Santo António, Mesericórdia and Campolide. It is noteworthy here that the parish of Santa Maria Maior showed heavy loss, and that it also tends to appear within the other categories not only among the parishes with most abandoned buildings, but very much the one that consistently appears among the parishes with the highest indexes that we have analysed- for the purposes of the particular case study, the fact that Santa Maria Maior appears in statistical analysis thus is ambiguous. On one side, its high index of abandoned buildings, gentrification and heavy loss of housing capacity relates not only, but also do a great extent to the area of the Baixa Pombalina, which, albeit extremely close to our area of interest, has urbanistic characteristics and dynamics which are very distinct to those of the Mouraria neighbourhood. The intended new Mosque and Square and current location of António Barroso's do fall within the Santa Maria Maior parish, however, which means that one can say confidently that our case study, the specific buildings, streets and immediate surrounding area are very much at the centre of the Santa Maria Maior parish's current predicaments, and Santa Maria Maior is in turn consistently at the very top of indicators which point towards housing issues, shortages and therefore potentially in need of either new solutions or simply more fast-paced urban intervention.



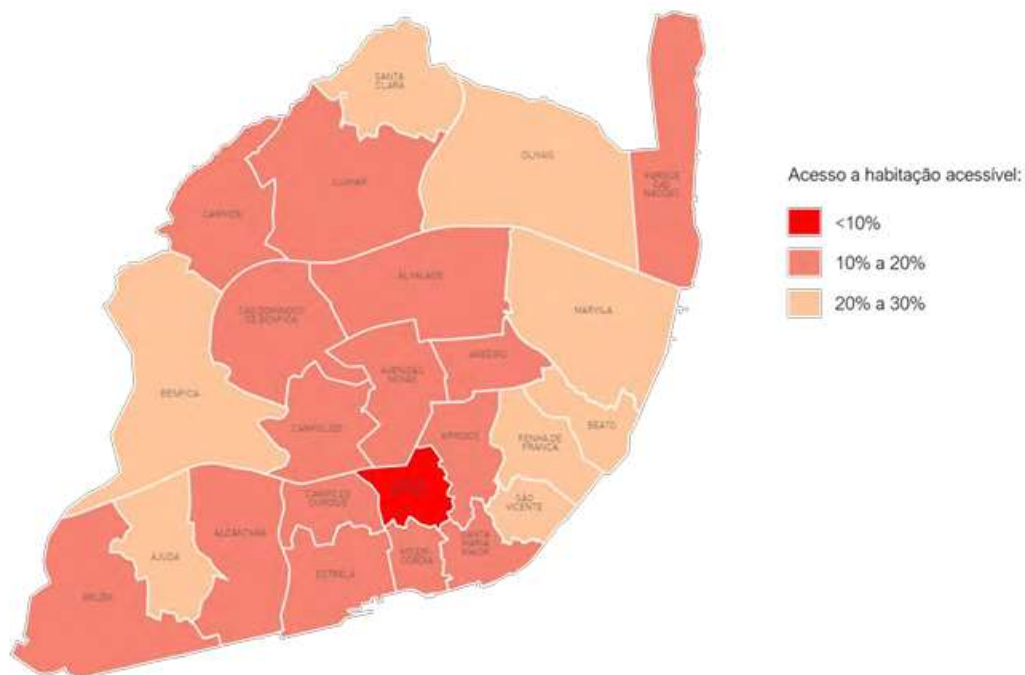
**Image 140 - Parishes and their respective rating of loss of housing capacity, housing abandonment and degradation (heavy loss in dark purple, light loss in light purple, negligible change in grey light gain in light green. Câmara Municipal de Lisboa, 2023c, pp. 14)**

Above one can see parishes and their relative loss of housing capacity, with Santa Maria Maior again standing out, this time in dark purple, indicating a heavy loss of housing capacity. So we can conclude that the area of interest has a high quantity, density and concentration of abandoned buildings, is divided between three parishes within the Housing Priority Zone, is among the areas with greatest rate and risk of gentrification and is among the areas which has lost the most capacity for housing.

One area in which the three parishes don't stand out particularly, and one of the sole indicators in which Santa Maria Maior does not top the table, is in that of lack of availability of accessible housing, which as we can see in the Table and Image below, actually has Santo António as the parish with the highest index, whereas Arroios (19%) and Santa Maria Maior (20%) are among fifteen parishes with a rating of between 10% and 20%, whereas São Vicente is 23%, hence between 20% and 30%. Santo António in comparison sits at 10%.

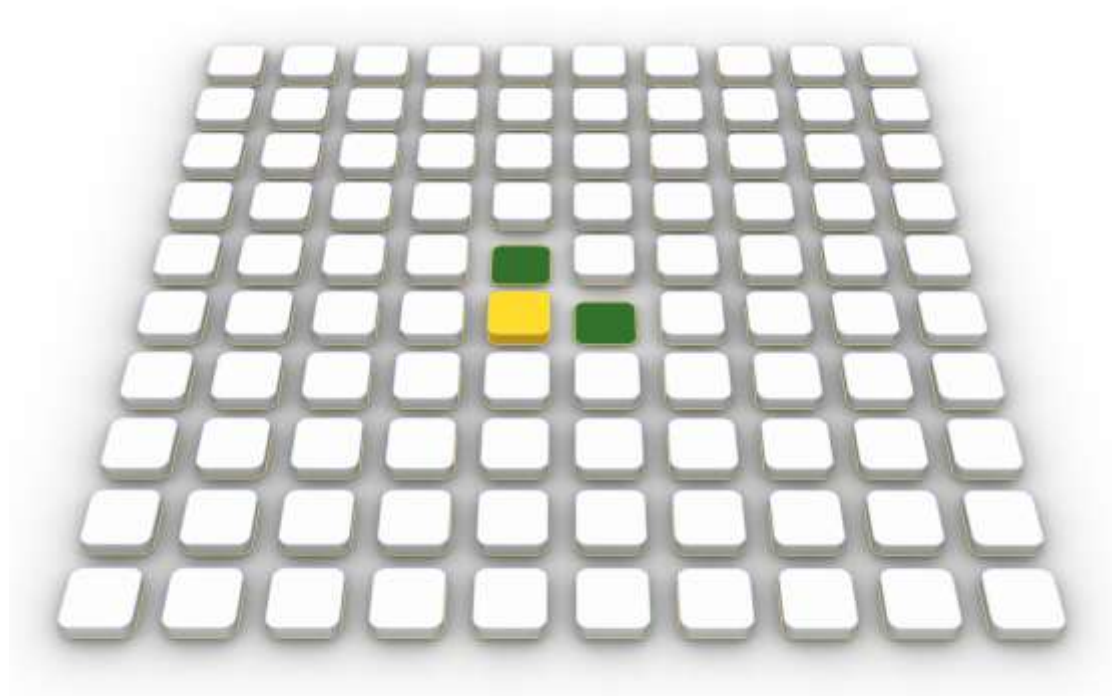
	Rendas de mercado 2022 P25	Estimativa da % de agregados fiscais com acesso a habitação
AJUDA	800	22%
ALCÂNTARA	950	18%
BEATO	680	28%
BENFICA	800	22%
CAMPOLIDE	938	18%
CARNIDE	900	19%
LUMIAR	950	18%
MARVILA	800	22%
OLIVAIS	845	20%
SÃO DOMINGOS DE BENFICA	900	19%
ALVALADE	950	18%
AREIRO	1000	16%
ARROIOS	900	19%
AVENIDAS NOVAS	1000	16%
BELÉM	975	17%
CAMPO DE OURIQUE	900	19%
ESTRELA	950	18%
MISERICÓRDIA	888	19%
PARQUE DAS NAÇÕES	1200	12%
PENHA DE FRANÇA	750	24%
SANTA CLARA	785	23%
SANTA MARIA MAIOR	850	20%
SANTO ANTÓNIO	1300	< 10%
SÃO VICENTE	772	23%

**Table 16 - Percentage of households that have access to affordable housing in the third column, with average rents in Euros in the second column (ibid, pp.17)**

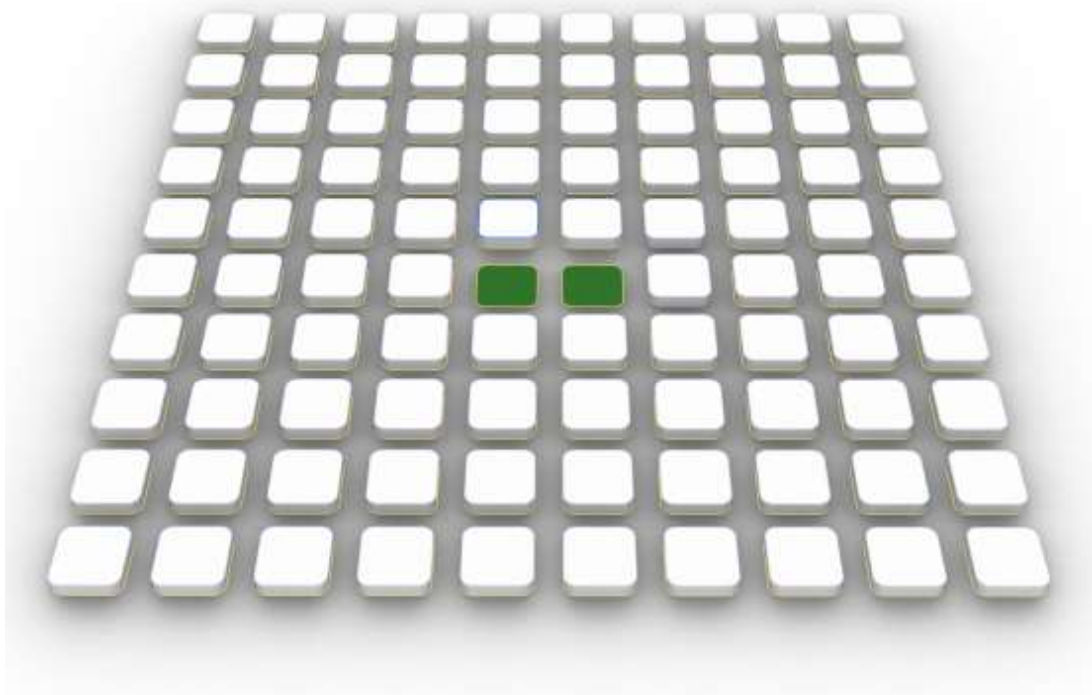


**Image 141 - Percentage of households that have access to affordable housing by parish (ibid).**

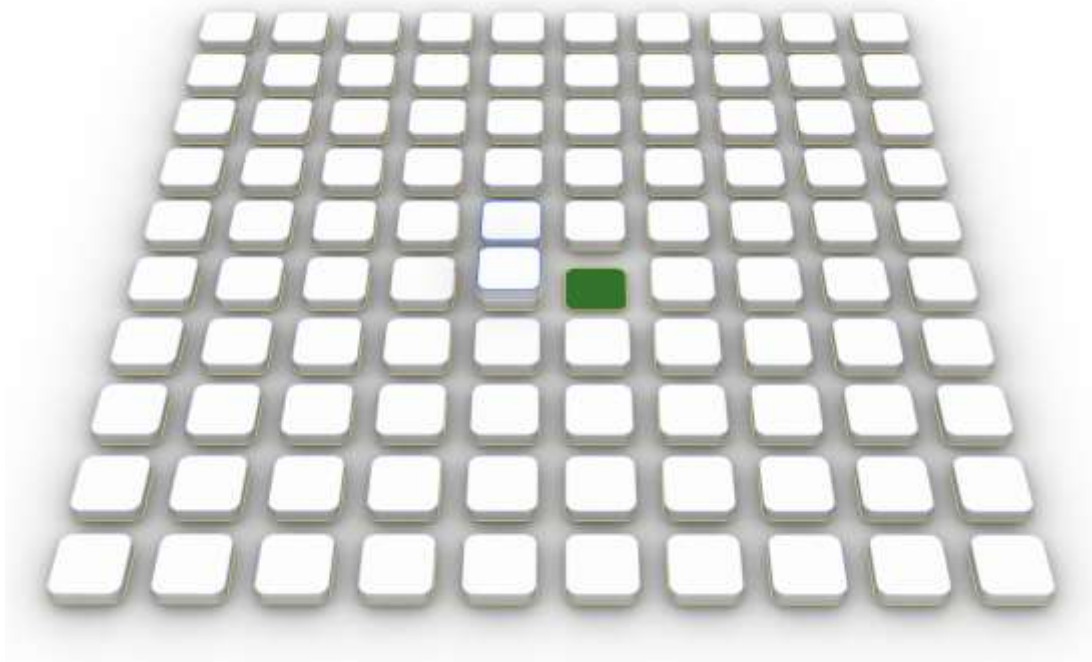
We can now consider two different scenarios, scenario 1, whereby an empty space is found that is fit for being used to build a new building that will house the garage, scenario 3, whereby only the smallest and single one of António Barroso's buildings is expropriated and cleared to build a new passage, and scenario 3, whereby an abandoned building is found that can be rehabilitated and used to transfer the functions of the garage to. Let us now see how the first scenario would be represented using a Sliding Puzzle Model Virtual Environment.



**Image 142 - Two empty spaces in green and the target for redevelopment in yellow, in this case, the expropriated garage**



**Image 143 - The garage has now been relocated to the empty space above it, and there is now an empty space to build the new Square and new Mosque**



**Image 144 - The garage has now been relocated to the new low density building to its north, while the space formerly occupied by the garage is now a higher density building than before, with an empty space in green remaining**

In this particular exercise, we have started with two empty spaces for reasons that will be made apparent throughout the rest of the following exercises and their

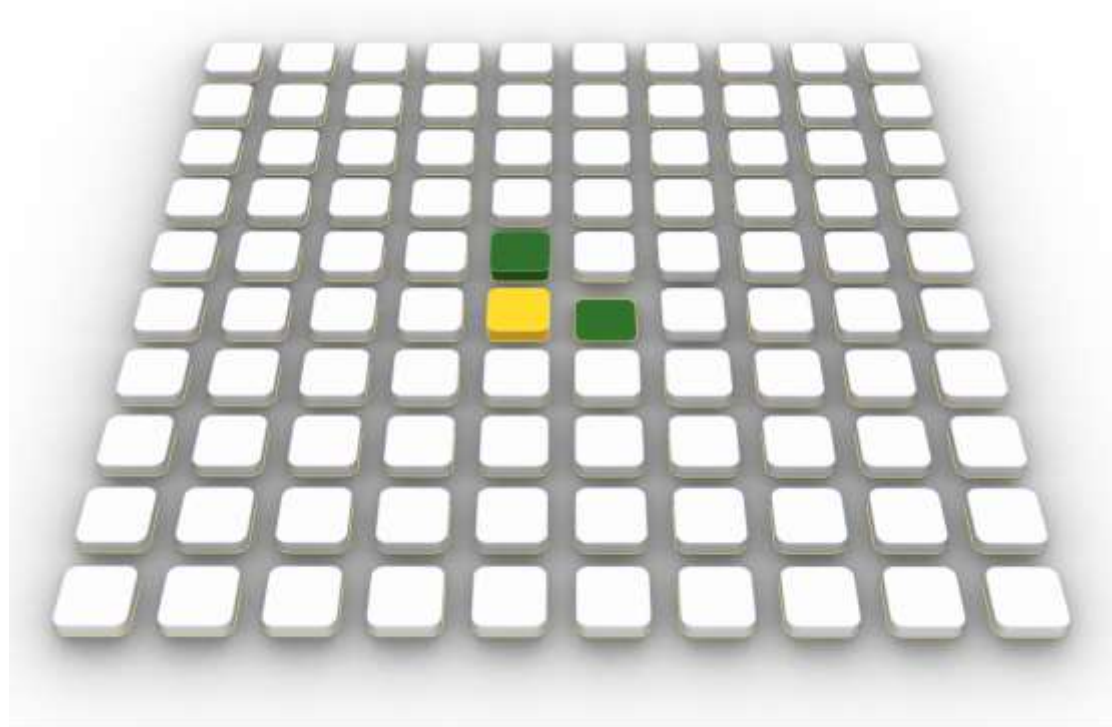
analyses. We begin therefore with two empty spaces, marked in green, and the target for redevelopment in yellow, in this case, the expropriated garage. In this particular representation of the exercise, there is a step, usually represented within this study in the singular representation of a single Sliding Cycle Puzzle Model, during which the new building which is under construction exists at the same time as the old building that is being targeted for redevelopment. This is necessary to ensure that only when the new building is ready can the relocation take place, minimizing the disruption to the current function and location of the building being targeted for redevelopment. In this case, the second Image already shows the new building in its final state, and the old building targeted for redevelopment already having been demolished. In this case, the new empty allotment on the left, marked in green, represents the location where the New Square and Mosque would be built, if the original project were to be ultimately constructed. Therefore, the garage has now been relocated to the empty space above it, and there is now an empty space to build the new Square and new Mosque.

In this particular exercise, on account of the general lack of pre-existing empty space, this first exercise is both the representation of an unlikely scenario, as well as it obliges us to a counter-intuitive measure, which is to begin with two empty spaces, and not one. Furthermore, for the duration of this previous exercise, one empty space remains untouched. This has been represented in this way because for the case relating to the New Square and Mosque, the location of the target for redevelopment cannot become the new empty space as it is the target for redevelopment precisely because its location has been deemed ideal for a new construction. However, one has deemed fit to still include an empty space in the final stage to argue that future needs for redevelopment will necessitate or be made easier if the pre-condition of pre-existing empty space is available- in this case, any attempts to relocate the garage to an empty space should take into consideration the possibility that such be done so that an empty space remains at the end of the process. One could imagine a possibility whereby the empty space that the garage is relocated to is actually larger than the actual amount of surface area that the new building would need to occupy, in which case part of the empty space can be kept as such so as to be used to leverage future development projects. Let us also take into account that some the Virtual Environment exercises demonstrated previously demonstrate how an initial empty space can be enlarged and multiplied using the Sliding Puzzle Model- the crucial point really is that in order to do so, some sort of initial empty space is necessary in order to kick-start the process.

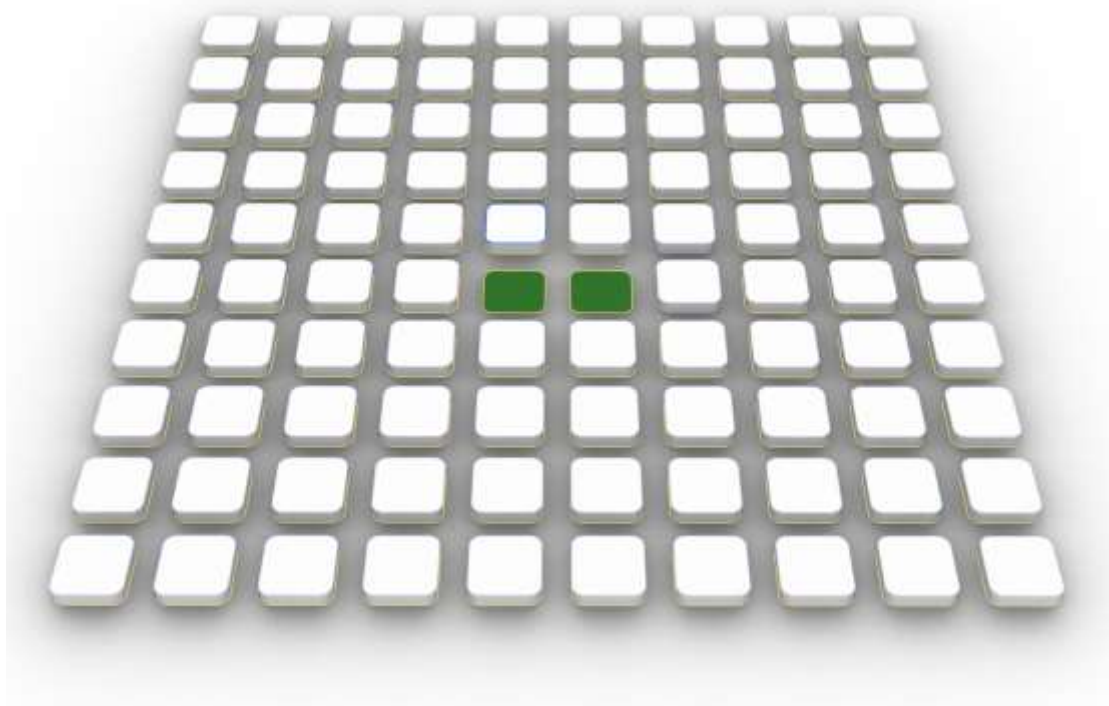
Let us now explore the second scenario, a scenario which is partly based on the first-hand account of the expropriated party (Barroso, 2023) followed by some speculation as to what it might mean regarding the Municipality's possible new plans for this redevelopment project. In this second scenario, whereby only the smallest of the two buildings that were initially expropriated, will be indeed expropriated. This could lead one to speculate whether the Municipality is considering scrapping the idea to build a new Mosque in the location, and will instead just make a passage that will become a new access point and connection between the midpoint section of Rua Benfornoso and Rua da Palma. If one were to consider this possibility, then indeed the problem of the need to build a new mosque in order to accommodate the locality's Muslim population would remain, however, the single, smaller expropriated building could just be emptied and be made into a passage. This would also mean the disruption to António Barroso's business in a way that is otherwise unmitigated. One could imagine a variety of different solutions to this conundrum using the Sliding Puzzle Model, however on account of their multiplicity, one will not hereby use actual Virtual

Environment exercises. One could however hypothesize that one could still then just use the Sliding Puzzle Model by considering the single expropriated building as the target for redevelopment and ultimately still have to find an empty allotment within relative proximity in order to relocate it, however, this last detail and variation on this particular scenario would only be acceptable or even beneficial for the expropriated party if his advanced age would be offset by the new location being very close, which is to say, that an accentuation on the importance of the overall objective of relocation within relative proximity would be a rational approach.

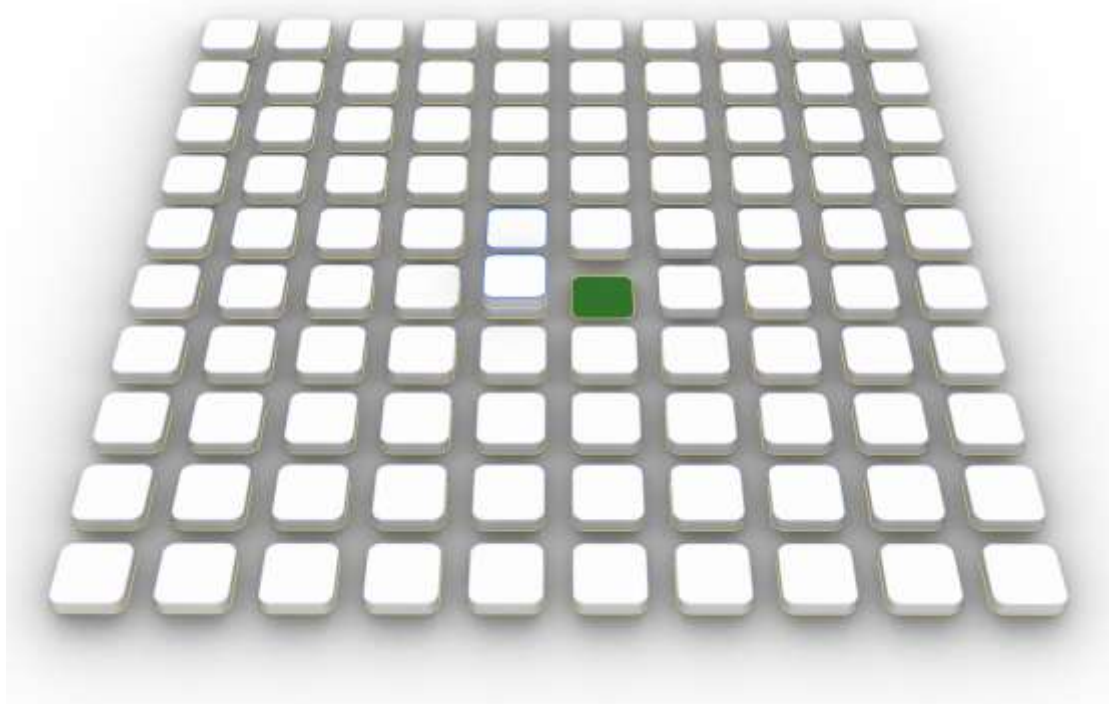
Let us now look at how scenario 3, whereby an abandoned building is found that can be rehabilitated and used to transfer the functions of the garage to, would look like when represented via a Virtual Environment. The garage has now been relocated to the new low density building to its north, while the space formerly occupied by the garage is now a higher density building than before, with an empty space in green remaining.



**Image 145 – One abandoned building and one empty space in green with the garage, target for redevelopment, in yellow**



**Image 146 - The garage has now been relocated to the abandoned building that has meanwhile been redeveloped, and there is now an empty space to build the new Square and new Mosque**



**Image 147 - The garage has now been relocated to the formerly abandoned low density building to its north, while the space formerly occupied by the garage is now a higher density building than before, with an empty space in green remaining**

This scenario seems to be not only the most desired, but also the most likely, on account of the extensive quantity, concentration and density of abandoned buildings

ando of publicly-owned buildings within our area of interest. And as one will briefly discuss over the next paragraphs, identifying and reserving an appropriate, publicly-owned building taking the third scenario as a model would also potentially result in higher financial viability. And if indeed a building can be identified that is simultaneously publicly-owned and abandoned, and still in fairly good state, and within relative proximity, then this would be all the more applicable.

The expropriating of the garage necessarily results in a cost relative to the compensation paid to the expropriated party, Antonio Barroso, however, the initial values proposed were rejected by the expropriated party, and even after a lengthy period of negotiation, whereby the values being proposed as compensation were raised from approximately 190,000€ to approximately 636,000€, however, this was still deemed unacceptable by the owner, who promptly contested the expropriation in court (Barroso, 2017, see also Publico, 2017a). The case of the expropriation of António Barroso's garage is an unfortunately appropriate example of how orthodox processes of expropriation can be lengthy, costly, contentious, and ultimately, be hugely delayed or even ultimately fail, whilst still ensuring that both parties, State and expropriated parties, incur in considerable financial losses. António Barroso's initial claim pointed to an estimate whereby the expropriation process and the ensuing inability to continue to use the building for their commercial purpose was costing him at least 1,800€ per month, whilst the development of the project alongside all the associated administrative endeavours will certainly have made the State incur in hefty expenses as well. The particularly contentious nature of this case has also meant that most involved parties have suffered some degree of loss in either financial or moral terms.

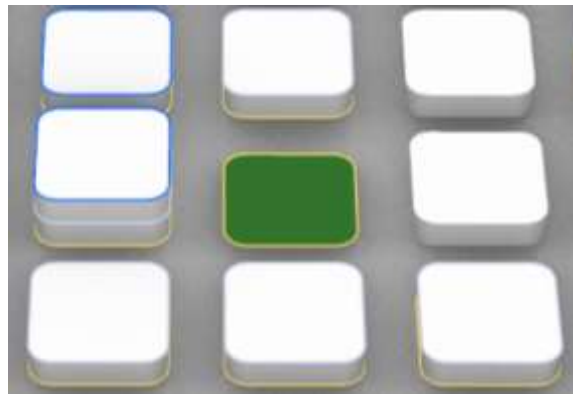
Using the Sliding Puzzle Model can mean that all of these financial costs can, instead of being paid out to a private that will then reinvest, or not, a part or the whole of that sum in the property market and do so using their own devices, can be redirected to repurpose the new building found to relocate the garage, whilst ensuring that, if a publicly-owned building is found, that no real estate purchase has to be made to accommodate for it. However we must consider that the Sliding Puzzle offers relocation as an alternative to a financial compensation to the expropriation, which means that the financial compensation can be waived or at least vastly reduced, but also contested in much the same manner that expropriation can be- one would expect however, that if the Municipality's political, administrative and logistic capacity is leveraged to full effect, that it would increase the chances of a compromise being reached.

It should be further commented that the reduction of costs that using the Sliding Puzzle Model to build the "New Mosque" would signify are all the greater in scenario 3 as a new building to house the garage does not have to be built from beginning to end, from project to finished building, but rather the costs go into redeveloping an existing building which would have been chosen using three main criteria- firstly it being "abandoned" or unused, secondly its relative proximity to the existing garage, and third, the extent to which the current design of the building in question can easily be adapted to the new function that it will be given.

One of the main conclusions from this Case Study is not so much that the Sliding Puzzle can be applied for controversial and contentious cases of development and redevelopment, perhaps most importantly it is that in this specific case, if the Lisbon Municipality had a bank of empty spaces ready to be used according to the specificities of the Sliding Puzzle Model, then this whole process could have been done in a more diplomatic manner from the beginning. And this is precisely because the Sliding Puzzle

Model and its inherent logic is one that takes into account the inevitability of redevelopment drives as well as the need for key infrastructural development, and prepares for it by proposing that cities keep a healthy Quota of Empty Space as proposed in the Sliding Puzzle's initial publication (Silva Jordão, 2018c). In fact the Original paper goes as far as to propose a mandatory quota of empty space, and indeed the Case Study as hereby presented makes a point of ending the redevelopment exercise in question with not only the redevelopment done but with an empty space still remaining so that another Sliding Puzzle cycle can begin again.

This takes us to analyze a detail in the virtual environment used above to represent how the Sliding Puzzle Model would be applied to this real-life case- an empty space that seemingly has no purpose that appears in all three stages in both scenarios, untouched, unused and therefore, seemingly *useless*. But is that not how we have always been taught to see empty urban space- as a useless vessel meant to be filled? And regardless of the importance of the state of the art, the calculations, the concepts, the case studies and the virtual environments, the most important contribution of this study is quite simple- to propose that central empty space is necessary, to the point that in any situation where there is none, we should make way for it somehow.



**Image 148 - The mantel piece of this Thesis- empty urban space, simultaneously a symbolic representation of potential and endless possibilities, and insofar as the Sliding Puzzle Model is concerned, the most important component insofar as both the inherent necessity as well as the conditions which make continuous urban development possible**

But there are some more specific conclusions that we can take from this case, and perhaps even risk some assertions. Even though the Sliding Puzzle Model can be used for a variety of different purposes, much of its logic and associated calculations are based on verticalization. This of course was based on a hypothesis that was proposed at the beginning of this Thesis, namely, that there are cases in central urban areas in which some buildings could do with verticalization, that is to say, that greater density and height is needed and would benefit not only that area's development but also simply provide more housing and general infrastructural capacity to places that are coveted by urban inhabitants. It is notable therefore that such a lengthy, contentious and complex process of expropriation and redevelopment was not initially used as an opportunity to verticalize the target area for redevelopment at least a little bit further. Let us remember the initial project and its relation of height to the adjacent buildings which would remain after its construction:



**Image 149 - The New Mosque Project (Público, 2016b)**

One of the conclusions reached is that this area is at the very centre and top of several phenomena and ranking such as rate of and risk of gentrification, being considered a housing priority zone, having suffered high rates of housing capacity loss, as well as suffering from an overall lack of accessible housing as can generally be seen throughout the Lisbon Municipality. Surely if a process this fastidious is to be undertaken, would it not make sense to take the opportunity to not only build a passageway, which as we have seen before, is either a clever addition to the project, or perhaps even its very fundamental initial, core objective, but also to add capacity simply by daring to build a little higher? The surrounding buildings have 3 and 4 floors, would it be overly ambitious to perhaps go all the way to 6? We have previously seen how height alone can be at the centre of a dispute over the redevelopment of a plot in the same area, in the case of the Portugália Tower (see Silva Jordão, 2019). If indeed one were to propose a project that seeks to gain height for the sake of gaining height and capacity, it might very well attempt to solve a dispute by ultimately provoking another. However one can envisage how, in such an evident example of a redevelopment drive being undertaken in such a contested, dynamic and wanted area and location, surely the proposition of gaining height and capacity simply for the sake of gaining height and capacity might not be as irrational as it might seem, and in fact, rather it would be not using this opportunity to do just that would be profoundly and evidently irrational.

Furthermore, as we have seen, many of the immediately surrounding areas are characterized by having narrow and sometimes steep access points, whereas in the case of the New Square and Mosque, there is plenty of space to allow not only so as to ease the process of construction itself but also to permit the relative verticalization of the built environment.

## **5.2 Second Case Study - Redeveloping Mumbai's Dharavi Informal Complex from the Inside Out by Opening up a new Main Road Using the Sliding Puzzle Model**

### **5.2.1 Some Initial Considerations**

This study was from its inception based mainly around the city of Lisbon, and I personally was living in Lisbon whilst developing this Thesis and the Sliding Puzzle Model as a concept and urban planning mechanism. The focus of the study for the most part of its theoretical framework and then in the first Case Study is therefore also, for the most part, the city of Lisbon. However, my academic path in urbanism started in the University College London's Development Planning Unit, now The Bartlett Development Planning Unit, which focused heavily on urban development in developing countries and cities of the global South, whilst I personally wrote a Dissertation on Urban Informal economies and urban contexts in South America. The title of the Dissertation is "Capitalist State Failure or Liberal Economic Success? Breaching the Dichotomy of Urban Informality in South America" (Silva Jordão, 2010), and received a grade of A and considered "outstanding", written under the supervision of Professor Jorge Fiori. This dissertation was never officially published nor made available for public consultation, and focuses itself on many of the same themes that run as theoretical or even practical axioms to this Thesis, and as such, some parts its theoretical framework and general insights have been adapted for use in the following sections.

Most importantly, for the reasons just listed, which point to a particular interest on my part, namely, in the attempt to develop policies and instruments which can be used to drive development and redevelopment in cities in developing countries or within particularly problematic scenarios such as those presented by informal housing, I insist on attempting to demonstrate how the Sliding Puzzle Model may also be used within a very different setting and urban context, namely, within the context of redeveloping one of the world's most challenging and exciting urban environments, the Dharavi complex in Mumbai. Parts of this Dissertation will be used hereby in order to build a Theoretical Framework on top of which one will then demonstrate how the Sliding Puzzle Model is an urban planning instrument that is adapted to intervening in an urban environment that fits within this wider context of urban informal housing.

### **5.2.2 Urban Informal Economy – Some Definitions**

There is "no single, clear-cut conceptual or statistical definition is universally used" to describe informal economic practices (UN Habitat, 2006, p.10). However one will throughout this paper adopt the following statement, that "the informal sector consists of income-generating households and/or unincorporated enterprises, including own-account enterprises and other unregistered enterprises with a unit size below a certain number of employees" (Habitat Debate, 2007, p.4). It must be noted also that "...defining the informal sector is extremely difficult and can only be done in terms of its contraposition with respect to the formal sector" (Gilbert, 2004, p.37). For this reason, the informal sector in this paper will be analyzed mainly through its relation with the formal sector. The formal sector will be defined as an activity performed under the jurisdiction of an established rule of law, which has the monopoly of the power to legislate and use of force to implement legislation, while the concept of rule of law will also be expanded further on.

‘Informality’ or ‘informal market’ will often be used to denote informal urban economic activity, and in particular this paper will seek to draw conclusions from economic activities which are used not for amassing capital, but for surviving and fulfilling social aspirations. The differentiation between those who seek to capitalize and those who seek simply to retrieve from the informal market that which they truly need, and yet cannot obtain from the formal market, will be undertaken using Amartya Sen’s definition of poverty.

Poverty will be hereby defined as “the level at which a person can not only meet nutritional requirements, etc., but also achieve adequate participation in communal activities and be free from public shame from failure to satisfy conventions” (Sen, 1984, pp. 342). Sen’s definition of poverty is most relevant as it is relative to the surroundings of the citizen in question, and considers communal activities as well as social conventions, which vary according to nation and society; Sen’s definition of poverty depicts a more realistic citizen, one whose ambition it is to survive as well as to live. Therefore the participation in the informal market that one is assessing is one which enables urban citizens not only to survive, but also to maintain a level of welfare that will ensure social inclusion.

According to David Harvey, social justice, and in particular, the means through which advances towards a more just society are made "must be extended to consider conflicts over the locus of power and decision making authority, the distribution of influence, the bestowal of social status, the institutions set up to regulate and control activity and so on... We are seeking, in short, a specification of a just distribution justly arrived at" (Harvey, 1973, pp. 97-8). Young (1990, pp. 38) adds to this by introducing and defining the concepts of domination and oppression thus: “Oppression usually includes or entails domination, that is, constraints upon oppressed people to follow rules set by others.” Hence throughout this dissertation, what one is seeking is to study the way in which the urban citizen attempts to escape poverty and social injustice, as well as the ability and further potential of the informal market to be the vehicle for increasing economic welfare and social justice.

### **5.2.3 Exclusive State Capitalism**

The current system of global capitalism operates on the basis of "consolidation and exclusion" (Duffield, 2001, pp. 4) and manifests itself not only between nations and states, but also manifests itself at the local level, mainly in urban centres that are actively integrated. and/or dependent on the global economy. The dominance of liberal state capitalism, in which political fulfilment is replaced by economic inclusion (Duffield, 2001) is most evident in the city, and it thrives not on expansion but on exclusion. Its dominance depends on its ability to seduce its own citizens into wanting to be a part of it, because not doing so implicitly carries a threat of economic, social and political exclusion. The manifestation of this threat takes the form of visibly excluded citizens, and in particular the existence of poverty, lack of adequate housing and other forms of economic deprivation. This threat is also an impediment to participation in the formal economy, as the manifestations of the threat of exclusion are visible to everyone, as they are not inhabitants of distant nations, but neighbouring citizens, visible on a daily basis. In this context, exclusion and poverty only serve as an immediate deterrent to non-compliance if they are present and visible at local and international levels, where the ruling class and the subservient class, to a large extent, share the same spaces.

This implicit threat of exclusion not only makes citizens more willing to adjust their lifestyles and aspirations towards the shape of the current system, it is a central part of the economic system itself and in particular of the social control system, as the threat exclusion, as well as the existence of excluded citizens. The manifestation of this mechanism also comes in the form of unemployment and the existence of unemployed people, the inclusion or exclusion factor being participation in economic activities that are paid and supervised by the State, that is, formal employment. The existence of a 'reserve army' represents the existence of human capital ready and willing to replace active labour, thus decreasing the very value of the labour itself.

However, when this global understanding of international capitalism is transferred to the urban scale, we are faced with a significant problem. While a nation that chooses to exclude itself from the global capitalist system and the political norms associated with it can, in theory, implement its own economic and political models, a citizen will be much less able to do so, particularly if they live in a centre. urban; the reason is that a single citizen, or a minority of citizens, will be less able to build their own social and economic models, if not because of lack of space, then because of lack of legislative mandate. Citizens are thus trapped in the city, where their individual purchasing power assumes an increasingly fundamental role in their daily lives. The commodification of the city advances this process and brings about a convergence between social exclusion in its entirety and economic exclusion, resulting from the growing importance of economic variants in urban life.

One such apparent form of exclusion is the informal market. However, what will be illustrated in this paper is that participation in the urban informal does not necessarily entail full exclusion: Firstly, the formal and the informal market in urban contexts exist, operate and manifest themselves in a conjoined manner. Secondly, the main intention behind the participation in the informal market is more easily understood as an attempt to reach social inclusion through the attempt to obtain, through informal means, that which one cannot obtain formally, and yet necessitates for survival and the acquisition or maintenance of social status. The dualist vision of a class of formal workers, whose means of production and market are encroached by a rebellious underworld of informal workers, is being increasingly put into question, as modern processes of globalization, informal and formal are much more evidently two components of one same functional body of production and organisation.

The city is a preferred and central stage in the growing commodification of everyday life, as noted by Lefebvre in his account of the history of the city's evolution (2008), namely in the distinction he makes between use value and exchange value. The distinction between use value and exchange value is particularly useful for analysing the contestation regarding the appropriation of public spaces by private agents, the conflicts concerning the privatization of municipal or state services, and the agency of different urban actors regarding the use of urban land.

#### **5.2.4 The Marginalization of Informality in the City**

“By the 1970s it was becoming clear that development in the accepted sense was a pipedream for Third World countries. Populations had exploded; cities were growing rapidly; mechanization was weak; and productivity in predominantly agricultural economies remained low; the gap between rich and poor was widening... Third World economies were supposed to deliver jobs, but, in the absence of machine-based industry, employment creation was left

largely to the only economic agent of any significance in most of these countries, state bureaucracy. The number of corporate firms offering new jobs was embarrassingly small. What, then, could all the other new inhabitants of the major cities be up to? They must be unemployed. Figures of 50% unemployment and more were conjured up by the economists. The spectre of the 1930s- broken men huddling the street corners... the rise of fascism and ultimately war- dominated the discourse of interested Western intellectuals.”

“Anyone who visited, not mention lived in, these sprawling cities would get a rather different picture. Their streets teeming with life, a constantly shifting crowd of hawkers, porters, taxi-drivers, beggars, pimps, pickpockets, hustlers- all of them doing their best to get by without the benefit of a real job of the sort found in national economic statistics” (Hart, 2000, pp. 148-149).

Keith Hart delivers above a description of how the informal market is both inevitable under certain economic conditions, as well as being the source of activity where otherwise (and statistically) there would be desolation and inertia: This account is extremely revealing, as it reveals the failure of the formal market in providing jobs when the government is the main source of employment and/or revenue, which in turn is a source for growing informality. Hart also points to the negative connotation with which informality is usually associated with:

*“The popularity of the label ‘informal’ may derive from its being negative. It says what people are not doing- not wearing conventional dress, not being regulated by the state- but it does not point to any active principles they may have for doing it. In this sense it is a passive and conservative concept that acknowledges a world outside the bureaucracy, but endows it with no positive identity. The informal sector allowed academics and bureaucrats to incorporate the teeming street life of exotic cities into their models without having to confront the specificity of what people were really up to”* (Hart, 2000, pp. 154, emphasis added).

The value and variety in so-called ‘informal activities’ is often underestimated, and amalgamated under one term and subsequently portrayed negatively, limiting our own understanding of what its real purpose and hence, legitimacy is. The negative connotation that the term itself has acquired is due to its association with activities that are both illegal in the eyes of the state, and negatively viewed by the general population, such as prostitution and drug trafficking. Hence not only is differentiation of informal activities necessary in order to understand them comprehensively; Even widely despised activities such as those mentioned above are often linked to subsistence economies, rather than simple greed or lawlessness:

“In reality, the irregular economy comprises activities that are extremely dissimilar from each other and which cannot be analyzed en bloc; often listed under this heading are activities that should instead be seen as belonging to the criminal or informal economies. What relationship is there, for example, between outwork and drug-dealing? Or between double jobholding and the investment of illicit capital (perhaps the proceedings of kidnapping or arms smuggling) in productive activities possibly controlled by mafia-type organizations?” (Dallago, 1990, pp. 5)

However even further disassociation is needed at this point, because many citizens who partake in activities which are not only informal, and which are illegal and

viewed negatively by the population at large, such as partaking in the drug smuggling business or prostitution, for example, do so to survive, as is related by Saskia Sassen (2006, pp. 179):

“In the 1990s and onwards, there has been a proliferation of new or renewed survival circuits built on the backs of women- as trafficked workers for low-wages, jobs and the sex industry and as migrant workers- sending remittances back home. A key aspect here is that through their work and remittance, women enhance the government revenue of deeply indebted countries and offer profit-making possibilities to quasi-entrepreneurs who have seen other opportunities vanish as a consequence of global firms and markets entering their countries or to long-time criminals who can now operate their illegal trades globally.”

In this case, participation in the informal market by partaking in the above mentioned activities, although reprehensible if one uses social conventions as reference, must be understood under a framework that considers its inseparable relation with necessity; Participation in the informal market thus can, in different activities and within different organisations, ranging from irregular to illegal, often be in itself an attempt at survival or an attempt to fulfil social conventions and thus, to avoid the suffering of public shame (Sen, 1984, pp. 342), despite doing so by themselves breaching adjacent social conventions by partaking in activities that entail irregularity and/or criminality.

Still however, these activities are often solely associated with the exploitation and moral decadence of those who profit most from it, rather than taking into account the extent to which these may be, albeit temporarily, the only means for the more deprived and vulnerable sections of urban citizens to sustain themselves, such as women from developing countries as exemplified above. Hence ‘informality’ is too often associated with crime, oppression and malevolence, when, and especially concerning urban poor citizens, it consists of means of gaining access to vital goods and services as a direct response to the inability of the ‘formal’ system to provide for them, as well as to retrieve from the informal market income with which to satisfy the conventions relevant to his/her urban surroundings and society.

Participation in informal economic activities in the city is the expression of human creativity, resilience, and the ultimate testament to mankind’s ability to survive against the odds. In the context of modern urban centres, where formality has become, in industrialized nations and societies, the norm, the participation in informal economic activities may be an absolute necessity for many of its members given that the possibility for exclusion as well as the existence of excluded citizens from the formal market is an essential characteristic of its very existence. However because in industrialized nations participation in the informal economy is less widespread, and the judicial and punitive system more efficient, doing so entails with it not only the threat of exclusion, but also of illegality: “Thus, Third World governments seem to be more tolerant of quiet encroachment than those in the industrialized countries such as the United States, where similar activities, albeit very limited, also take place. One reason is that the industrial states are far better equipped with ideological, technological, and institutional tools to maintain surveillance over their populations” (Bayat, 2005, pp. 95).

Reacting to economical exclusion through partaking in informal economic activity is hence not only necessary for those who are excluded to the point of inability

to obtain vital commodities and services, it itself “contains the seeds of a more humane alternative” (Hart: 2000, pp. 148) to an economic systems that is reliant on systematic exclusion.

### **5.2.5 The Formal Market as the Architect of Informality**

“The relationship between the irregular economy and shortage is therefore crucial... the existence and continual reproduction of the irregular economy plus the private sector can be explained to a large extent by shortage: ‘the demand that the “first” economy is unable to satisfy creates a market greedy for the goods and services of the “second” economy’, which makes use of the surplus of labour supply in the economy (measured in terms of work time) that is not utilized by the ‘first economy’” (Dallago, 1990, pp. 48).

Furthermore, “this irregular economy ‘... is the consequence of a severe shortage in the marketplace, it fills the gulf between large demand and limited state supply and is the direct-result of command-based methods of leadership, the imperfection of our economic mechanism, and low labour productivity’” (Dallago, 1990, pp. 51).

Although the above-mentioned conclusions are based on communist countries, the concept that state shortage creates a gap which will be filled by informal economic activities is applicable to industrialized nations, as well as developing ones in the context of the consolidated system of global capitalism, although the shortage produced by ‘command-based methods of leadership’ is applicable not to a tyranny based on political repression, but rather one which has consciously applies and utilizes a limited supply of finance in order to rule, and therefore where the shortage which leads to the existence and ‘continual reproduction’ of the informal market is a shortage of credit, education, employment, or lack of social mobility. In other words, the shortage that is present in industrialized and developing nations alike is not a shortage in the available workforce, nor in the available resources nor in the demand for goods and services, but rather a shortage in that which bridges these three pools of value: A sufficient source of finance and credit with which to efficiently make the connection between workforce, resources and demand into one that can be made within the formal market and which can then satisfy the urban population’s necessities and social aspirations. If however, the three pools of value are present, and credit is not, informality will, although not fully, account for the gap, and replace what would otherwise be inertia with informal activity.

The lack of credit is particularly relevant in the informal construction, maintenance and extension of housing: One of the most notable urban informal economic activities consists of the construction of housing through irregular means. This irregularity does not consist solely of ignoring planning regulations, challenging land property claims or occupying disused buildings, as the lack of credit is responsible for a large part of informal activity. Firstly, the lack of credit very greatly diminishes the possibilities for the urban poor to acquire housing without resorting to informal practices. Secondly, maintenance costs, and adjacent costs such as council or municipal tax, are often avoided or paid irregularly, which accounts for another important source of informal economic activities in the city.

As has been noted by Deneke and Silva (1982, pp. 244), it is not only in the initial stage of construction that shortage of credit is important of informal housing. Even when basic housing has been acquired, the process of expanding and maintaining

their property will often see inhabitants resort to informal means, which will be much more cost-effective. The reason for this is that “first, the special sources, informal market or used material, from which building materials were acquired; secondly, the type of specialized labour hired; thirdly, a reduction in the prices of the materials acquired and in the wages of the workers hired... and fourthly, the use of construction systems which did not, in most cases, conform to formal construction standards.”

The lack of credit is also a major factor in informal businesses, and particularly plays a part in the reluctance of many self-employed businesses to formalize: “...a microfirm owner unlicensed because of high registration costs may be de facto excluded from desired formal credit circuits while opting out of contributing to poorly designed state pension funds on behalf of his or her workers” (Perry et al, 2007, pp. 3).

However it has also been noted that “governments often encourage self-help and local initiatives so long as they do not turn oppositional. They do so in order to shift some of the burden of social-welfare provision and responsibility to individual citizens. The proliferation of NGOs in the global South represents a good indicator of this type of situation” (Bayat, 2004, pp. 90). Therefore one can say that governments do not always repress informality and its components; however, the relationship between the state and the urban informal economy is, like the relationship that urban citizens have with it, one whose course of action is largely determined by the calculated or perceived gain or loss that it entails. In other words, just as the urban citizen will participate in and with the informal economy to different degrees, and in different ways, according to what they seek (or need) to retrieve from it, so too will states react to informality depending on temporary needs and aspirations. Paradoxically, by possessing exclusive legislative and regulatory power and thereafter in using it to place certain activities outside of the realm of the ‘legal’ and hence create the informal market in the first place, states will themselves adopt a position in regards to economic informality depending on their evaluation on how best to use this space of illegality for personal or political gain.

Official legislation will also influence the informal employment market, and change the dynamics of the informal market as a whole, such as minimum wage regulations, which, will have an indirect effect on wages in the informal sector, and have been noted to be an influential reference for the overall job market, even in the absence of an efficient regulatory framework which consistently oversees its application (Rodgers, 2006, pp. 6-7). This adds another dimension to the relationship between formal and informal, for it consists of regulation which impacts informality, not through capacity of implementation, but in its quality of ‘official’ reference for conduct in employment put forth by a figure of authority.

### **5.2.6 The Interdependence of the Formal and Informal Market**

“Greater global economic integration appears to be accompanied by an increasing number of home-based enterprises in the areas of information technology, financial advice, telephone consumer service and business consultancy in both developed and developing countries. Therefore, integration of informal home-based workers into global production chains of goods and services is a clear indication of the continuum of economic relations linking the formal and informal economies” (UN Habitat, 2006, pp. 12).

The formal sector often and increasingly relies on formalization of the informal, as is the case in many auto constructed urban peripheries America driving metropolitan

growth (Roy, 2005, pp. 149), as will be discussed in the case study of São Paulo's periphery, while in other cases the informal economy is, particularly in the context of developing nations, not only substantial, but a vital part of the both the economy of subsistence but also as a source funding of government through (irregular, though present) taxation, as will be shown in the Lima case study.

The formal market is also increasingly reliant on products and services offered by the informal market, namely in "lowering the costs of high-priced goods and services for non-mass-consumer markets" (Sassen, 2006 pp. 162). There are also other aspects of the formal economy, many of them strictly logistical, which create gulfs of demand which the informal economy then inevitably responds and services to, as is exemplified by the demand of house-workers by high-earning professionals:

"The global migration of maids and nannies particularly brings out the demands placed on the top-level professional and managerial workforce in global cities: the visual modes of handling household tasks and lifestyle issues do not apply in this case. This is the type of household that could be described as the 'professional household without a wife', regardless of the fact that it may be composed of a man and a woman, or man and man, or woman and woman, if they are both in demanding jobs. As a consequence, this is creating the return of the so-called serving classes in all global cities around the world, made up largely of immigrant and migrant women" (Sassen, 2006, pp. 178-9)

The precise logistics that characterize much of the formal labour market, namely long working hours, low flexibility in deciding these hours, and often long commuting hours, mean that "growing shares of household tasks are relocated to the market. Here is a dynamic akin to a double movement: A shift in the labor market of functions that cease to be a part of household work, but also shift of what used to be labor-market functions in standardized work places to the household and, in the case of much informalization, to the immigrant community" (Sassen, 2006, pp. 181). In this case the formal market produces a localized form of shortage, which, like the shortage of state supply, sees a shortage created by the formal market, which in this example is a shortage of time, know-how or willingness to fulfill certain household tasks, coupled with the ability to compensate for this shortage through the use of paid employment, which is then attended to by the informal market, often by low-paid and marginalized immigrant and migrant women. The consequences of this particular manifestation of shortage are distinct, because whereas state shortage fails to bridge the three pools of value that are present, this 'localized' shortage in itself is the catalyst for the creation of a new pool of employment which would otherwise not exist.

The presence of demand by the formal market which urban informal workers provide for also affects the very way in which the formal market operates, sometimes in contradictory ways. For example, informal vendors may act as retailers for products which come from formal salesmen; even when the informal worker is performing tasks such as construction, clothes manufacturing and other activities, the raw materials are likely to come from the formal market (Chant, 2008, pp. 221).

### **5.2.7 Liberal State Capitalism and the Repositioning of the State**

Foucault states that from the end of the seventeenth century, and in reference to France in particular, the marginalization of criminal activities accompanied its shift from a widespread and varied criminality to one which consists mainly of theft of property:

“...offences against property seem to take over from crimes of violence; theft and swindling, from murder to assault; the diffuse, occasional, but frequent delinquency of the poorest classes was superseded by a limited, but ‘skilled’ delinquency; the criminals of the seventeenth century were ‘harassed-men, ill fed, quick to act, quick to anger, seasonal criminals’; those of the eighteenth, ‘crafty, cunning, sly, calculating’ criminals on the fringes of society... a general movement shifted criminality from the attack of bodies to the more or less direct seizure of goods; and from a ‘mass criminality’ to a ‘marginal criminality’” (Foucault, 1977, pp. 75-76).

One of the reasons behind shift in criminal patterns was “a change in the operation of economic pressures, a general rise in the standard of living, a large demographic expansion, an increase in wealth and property and a ‘consequent need for security’” (Foucault, 1977, pp. 76). This in turn is a direct result of large-scale transformation, namely in the “development of production, the increase of wealth, a higher juridical and moral value placed on property relations, stricter methods of surveillance, a tighter partitioning of the population, more efficient techniques of locating and obtaining information: the shift in illegal practices is correlative with an extension and a refinement of punitive practices” (Foucault, 1977, pp. 77). Technological and economic advance in this context entail an increased need for security as well as the sanctity of private property, as a society (nearly) as a whole moves from subsistence to accumulation.

These changes in the judicial system, brought by increased economic welfare, which in turn changed the essential nature of the majority of criminal activity, paved the way for what Foucault illustrates as a reviewed ‘economy of punishment’ (Foucault, 1977, pp. 76) which does not seek to increase the justice of its procedures and application, but rather to extend the reach of the judicial system and the application of its laws to all strata of the population. In essence its principle and aim “was not so much to establish a new right to punish based on more equitable principles, as to set up a new ‘economy’ of the power to punish, to assure its better distribution, so that it should be neither too concentrated at certain privileged points, nor too divided between opposing authorities; so that it should be distributed in homogeneous circuits capable of operating everywhere, in a continuous way, *down to the finest grain of the social body*” (Foucault, 1977, pp. 80, emphasis added).

This power to regulate and punish is also in many aspects dealt by persons which are themselves subjected to the very same body of authority that they enforce and represent. Young describes this as structures within which “power is understood as ‘productive’, as a function of dynamic processes of interaction within regulated cultural and decision making situations... [whereupon] widely dispersed persons are agents of power without ‘having’ it, or even being privileged” (Young, 1990, pp. 33). In this reviewed economy of punishment, the citizens themselves are embedded within the agencies of regulation, oversight and ultimately, domination, without being privileged themselves.

This reform therefore can be understood as one which, seeking to respond to and functioning in parallel to increased economic welfare and the need of its citizens to feel secure, increasingly uses its role of guardian of private property, enforcer of a multitude of taxes as well as economic regulator to impose a rule of law that is both more subtle and more intrusive. Its ability to be thus, both more subtle and yet more intrusive is due to the fact that its surveillance applies not only to those who commit

violent crimes or break established laws, but instead which subjects the whole of the population to an increasingly complex and encompassing body of laws and statutes which lawfully and increasingly scrutinize the very basis of their ability to survive and live- their economic activities.

State ‘minimalists’, most notably Robert Nozick, proposed “a minimal state, limited to the narrow functions of protection against force, theft, fraud, enforcement of contracts, and so on” (Nozick, 1974, pp. 290-2), which essentially manifests the belief that the state’s main role is that of protector and service-provider, and which subsequently acts as a contract-binding agency as well as a guardian of private property. Paradoxically however, in order to fulfil its role of contract-binder and protector of private property, the state has come to endanger the very limitations that its role as economic supervisor should entail, namely by placing the act of paying taxes as one of, if not the main core of citizenship and basis for the bestowal of rights upon the citizen.

The paradox is that, by placing the duty as well as the *right* to protect private property and enforcing contracts at the centre of the state’s responsibilities, and in order to fulfil such a task, the state apparatus is forced to be expansive and intrusive. This is because firstly, in order to protect private property it must have an extensive power of surveillance, as it must have the power to punish citizens who infringe complex property rights. It must also, since it will inevitably have limited resources with which to enforce this very protection of private property, to set priorities of which infringements are most or least damaging to society and the rule of law in relation to monetary value, classifying priorities along profit and expenditure. In essence, it is a legal system which discriminates along economic and social class rather than by discriminating nationality, religion, ethnicity or social status. This was made possible firstly by the reform movement (Foucault, 1977), and thereafter solidified by the emergence of state capitalism as the dominant structure of governance and economic management (Duffield, 2001).

Through the application of economic oversight and regulation and the understanding of this function as the state’s central responsibility, the state has become able “to make of the punishment and repression of illegalities a regular function, coextensive with society; not to punish less, but to punish better; to punish with an attenuated severity perhaps, but in order to punish with more universality and necessity; to insert the power to punish more deeply into the social body” (Foucault, 1977, pp. 82). One must now take a closer look at how this structure of power manifests itself in the urban context.

### **5.2.8 The State of Exception, Spaces of Exception and the Urban Informal Economy**

It is useful at this point to analyse Agamben's (2005) concept of the state of exception, as it illustrates the relationship between the "Rule of Law" and what lies outside it, demonstrating that any form of established "Rule of Law" can only historically, remained in power, and maintain the monopoly on the use of force that it entails by avoiding, changing, misinterpreting, and enforcing its own arbitrary set of laws. The state of exception is the concept that any legal framework is suspended, by profoundly altering its code of conduct, in order to deal with extraordinary problems. In the context of a dominant State and its administrative apparatus, the State of Exception may imply "laws of complete power ... those laws by which broad powers

are exceptionally granted to the executive, especially the power to modify or revoke by decree existing laws" (Agamben, 2005, pp. 7).

The use of force is often legitimized by the need to adopt extraordinary powers, including the breach of the law itself, in order to defend the legal system as a whole. Agamben (2005) argues that the state of exception has become the norm, a state characterized by the intention to ensure its own survival, at the expense of the ability to consistently defend the public good. This state is circular, self-indulgent and ultimately tyrannical, as its goal is its own survival, while its law is "a word that it does not attach itself to, that neither commands nor prohibits anything, but says only in itself, which corresponds to an action only as a pure means, which shows itself only, without any relation to an end" (Agamben, 2005, pp. 88).

The State of Exception is like a reciprocal mechanism to informality, insofar as it operates outside the current law, without therefore being completely outside it, and which allows the law itself to be applied to survive, as well as the workers that interact with the formal market strategically and punctually in order to survive the effects of their own contradictions. This "imbalance between public law and political fact" (Agamben, 2005, pp. 1) is the differentiation between theoretical law, and the physical means by which the law is applied; it is the human factor, which in turn can be applied and interpreted as an origin of tyranny, as well as being the space in which those who are most oppressed by the rule of law can operate in order to fight for inclusion, and that in doing so they change the structural characteristics of the legislative system itself:

"It can be said that necessity is the first and original source of all law, in such a way that, in comparison, the others are somehow considered to be derived... And it is from necessity that the legitimacy of the legal institution par excellence, the namely, the State, and its constitutional order in general..." (Agamben, 2005, pp. 27)

The legal system itself, i.e., court proceedings, is itself a central component of any functional punitive system, because it is designed to take into account exceptions, such as necessity, in order to establish what the legitimate expectation is. of existing laws can be. This space of uncertainty, which is essentially constituted by the need to interpret laws before applying them, as well as the perception that any judicial system can be flawed and therefore will fail to serve the public interest consistently, is defined as follows: "the state of exception is neither external nor internal to the legal order ... (it is a) zone of indifference, in which inside and outside are not mutually exclusive, but blur with each other" (Agamben, 2005, pp. 23). It is within this space of uncertainty that policy must formulate policies that seek to maximize the informal market, as well as the potential that the government has established that makes this informal activity have in serving the public, increasing access to well-being and better social status.

We are witnessing the emergence of a new era in local governance. We have identified four stages in its history - Military, administrative, representative and participatory. However, the new stage has not yet been consolidated, even though the layers that historically are the most effective agents of change require new models of participation, resistance to change, the dynamics inherent to globalization as well as the technocratic needs inherent to urban planning and management are preventing the new era of urban management from taking effect.

The Right to the City is at a crossroads: While the dynamics of globalization push competences away from the public sphere and reduce the mandate of local administration in relation to urban management, populations increasingly demand a

captive participation in urban life and in the policies that affect it. And in addition to the dynamics of globalization, we also have the complexity and subsequent fragmentation, as Seixas diagnoses (2013, pp. 20): "by the fragmentation of political-decisional systems, fuelled to an important extent by the inability to reform the political-administrative and systemic bases, on the other hand, due to the increase in the complexity of urban issues and the multiplication of perspectives, agents and public measures and actions. more integrated strategic directions."

The central point of this crossroads is the very structure of local administration, which is being overtaken by globalization and being pressured by the population. These two movements have the same origins but express themselves in paradoxical ways. The origin of the problem is the development of capitalism, but while globalization, and the expansion and consolidation of the capitalist model it represents, changes the form of local administration by transferring competences to the private sphere, the population, in turn, increasingly reacts in a conflicting, even sometimes non-institutional way, precisely because they realize that the municipal representation is not capable of changing their lives. Whether through illegal occupations, demonstrations, protests, urban riots, targeted attacks on private property, the population increasingly acts locally but without resorting to local representation institutions. In this context, the undermining of the local administration's mandate means that its capacity to act as a mediator in urban conflicts is also being eroded.

The proliferation of social movements that deal directly with imminently urban issues is a fundamental element to understand the relationship between the urban population and the established power, namely the intensification of the struggle over the use of space that also takes place in the physical space. When faced with the occupation of space, demonstrations, occupations, and other aspects of spatial struggle, the instituted power often resorts to a State of Spatial Exception, in which it suspends current laws to preserve the so-called 'public order', opening up the possibility stronger repression (Agamben, 2005). In turn, urban movements also meet, such as the Right to the City, which they often defend and claim, at a crossroads - because of the lack of mandate of the Local Administration and its lack of capacity to act as a mediator of conflicts, they often revert to non-institutional forms of action, but at the same time, the Right to the City can only be effective if the established power is reformed so as to act as the vehicle through which urban inhabitants can influence the processes that affect them. The paradoxical nature that we find in these conflicts is the result of this very fact, the inability of the parts of these movements to find a strategic synthesis for the contradictory dichotomy in which they find themselves.

Agamben also stated at a conference in Athens that:

"What happens today is, however, something else. No formal state of emergency has been declared and, however, vague non-legal notions – security reasons – are evoked to establish a constant, chilling and fictional state of emergency, without any threat is identifiable. An example of these non-legal notions that are used as instigating factors for emergency is the concept of crisis. In addition to the legal meaning of trial in court, two semantic traditions converge in the history of this term which, as will be evident to you, stem from Greek verb *crino*: a verb of medicine and theology. In the medical tradition, crisis means the moment when the physician has to judge and decide whether the patient will die or survive. called *crisimoi*, the turning days. In theology, the crisis is the last judgment proclaimed by Christ at the end of time. As you can

see, what is essential in both traditions is the link to a specific moment in time. In the present usage of the term, this link is abolished. Crisis and judgment are separated from their temporal counterpart and now coincide with the chronological course of time, so that, not only in economics and politics, but in all aspects of social life, crisis coincides with normality and becomes thus become only a tool of government. Consequently, the ability to decide disappears altogether and the continuous decision-making process decides absolutely nothing. To formulate it in paradoxical terms, we can say that, facing a continuous state of exception, the government tends to take the form of a perpetual coup d'etat. This paradox would be an accurate description of what happens both here in Greece and in Italy, where to govern means to carry out a continuous series of small coups d'etat. The present Italian government is not legitimate".

At the local scale, this fictitious crisis is being used to privatize public space and alienate functions and capacities of Local Administration, thus restricting the public sphere, transferring influence and wealth to the private corporate sphere and thus reducing the capacity of Local Administration to guarantee the Right to the City. This alienation and consequent atrophy of the urban public sphere is permeated by the arbitrary practice of power, as indicated by Agambem when pointing to the medical origin of the term 'crisis', derived from the Greek term 'crino'.

Agambem also proposes that: "The spatial materialization of this zone of indifference is the video surveillance of the streets and squares of our cities. Again, a device that was conceived for use in prisons is applied to public places. video ceases to be an agora and becomes a hybrid public and private, a zone of indifference between prison and forum. This transformation of the political space is certainly a complex phenomenon that implies a multiplicity of causes, among which, in a special place, the birth of biopower. The primacy of a biological identity over a political identity is directly related to the politicization of bare life in modern states. But we must never forget that the levelling of social identity into bodily identity began with attempts at identification of repeat offenders. We should not be surprised if today the normal relationship between the state and its citizens is made up of suspicion, by police filing and control. The secret principle that governs our society can be formulated like this: every citizen is a potential terrorist. But what kind of state is this that is governed by such a principle? Can we still call it a democratic state? Can we still consider it political? What kind of state do we live in today?"

### **5.2.9 Political and Spatial Exclusion - An Existential Problem**

The inclusion of the sections of the population most excluded from urban planning processes, in turn, can only be addressed taking into account the complex relationship between the processes of social, economic and spatial exclusion. Political inclusion is as much a matter of political and economic inclusion as it is of spatial inclusion. Even so, the most important form of inclusion is the express and active inclusion in political processes through influencing (theoretically) public decision-making mechanisms:

"In the political arena, the main form of inclusion is to have a stake in power, to participate in decision making. In European liberal democracies, inclusion is often ensured through voting and other processes associated with it. The most obvious form of social exclusion is, therefore, the lack of political

representation. This may take various forms: from the under-representation of women in parliaments and governments, to the complete exclusion of immigrant groups from the political decision making; from the argument by a smaller political parties for a new system of representation which would allow them a fairer share of power, to a withdrawal from political participation by those excluded in the economic and cultural arenas" (Madanipour, 1998, pp. 77).

The issue of social exclusion, especially urban social exclusion, is often posed in the context of competition between cities for investment and capital. However, competition between cities relegates the decisive factor, which is the point at which an ultra-competitive economy relegates growing parts of the population of most cities to a state of labour insecurity, personal and collective anxiety, and subsequently increased widespread social exclusion. In this sense, the competition inherent to capital flows as the central pillar of the current economic system enhances social exclusion through scales, where inequality is verified on a global scale as well as on a local scale. It is for this reason that the representativeness of the local administration and its responsibility to guarantee the right to the city for its inhabitants stands out as an important factor throughout the different regions of the world.

Social exclusion, in turn, is reflected in the built environment, resulting in dynamics of spatial exclusion that perpetuate and solidify class differences, imprinting them on the territory. Too often spatial exclusion is exacerbated by interventions that attack the built space without resolving the invisible dynamics that cause the exclusion itself, as reflected in historical interventions such as Haussman's in Paris and the so-called informal or precarious housing demolition programs in the 20th century (Madanipour, 1998).

The organization of society as a whole depends on processes and mechanisms of spatial exclusion, namely in order to perpetuate economic relations and guarantee the right to private property. As Madanipour (1998, pp. 81) mentions, these exclusion processes:

"...may be regulated through codes and signs, preventing us from entering some spaces through outright warning of more subtle deterrents. Mental space may also be controlled through our fears and perceptions of activities in places. For example, we may be hesitant to enter an expensive-looking shopping centre if we do not have the access to resources needed for the activities there, even though there may not be any physical barriers which would prevent us from going there. A third form of barrier to our spatial behaviour is social control, which can range from legal prohibitions on entering places to constructing formal barriers along publicly recognized borders. National borders and public-private boundaries are examples of this form. A combination of formalised rules and regulations, informal codes and signs, and fears and desires control our spatial behaviour and alerts us to the limitations of our access. Through these, we have come to know whether we can enter a place, are welcomed in another and excluded from others. More restrictions on our access to our surroundings would bring about the feeling of being trapped, alienated and excluded from social space" (Madanipour, 1998, pp. 81).

Spatial exclusion is built not only by the spatial disposition of the city, but above all it is based on social contracts related to symbols, rights, duties, responsibilities, and above all, ideological relations mostly consensual regarding the use of space. Spatial

exclusion is a physical reality maintained by ideological, linguistic and symbolic relationships. Even so, the space itself remains the central element in the urban layout and in the dynamics of exclusion and segregation:

"Space has, therefore, a major role in the integration or segregation of urban society. It is a manifestation of social relationships while affecting and shaping the geometries of these relationships. This leads us to the argument that social exclusion cannot be studied without also looking at spatial segregation and exclusion. Social cohesion or exclusion, therefore, are indeed socio-spatial phenomena. As Levebvre (1991) put it, every society creates its own space. Exclusionary spatial organization is in close relationship to social systems whose contribution is inherently built upon some form of social exclusionary processes. We know that all human societies have their own forms of social and spatial exclusion. So exclusionary processes per se are not the source of social fragmentation and disintegration. It is the absence of social integration which causes social exclusion, as individuals do not find the possibility and channels of participating in the mainstream society" (Madanipour, 1998, pp. 81).

However, spatial exclusion is equally and increasingly reaching an economic dimension, notably as a result of the city's evolution towards a greater importance of property relations and subsequently the commodification of all aspects of urban life.

In turn, spatial exclusion enhances and perpetuates exclusion from planning and representation processes, perpetuating socioeconomic inequality through political inequality. The conclusion we can reach is that the spatial planning system condemns those that it subjugates by its jurisdiction to social exclusion through systemic and possibly spatial exclusion, because it applies to sectors of the population without being influenced by these same sectors. The dissolution between the barrier between citizen and inhabitant is real in the jurisdiction, because authority applies to everyone, without this same dissolution being applied to political representation. According to Rousseau (1762, pp. 16-7), "each of us places his community, his person and all his powers under the supreme direction of the general will; and as a body we incorporate all the members as an indivisible part of the whole Immediately, in place of the individual person of each party to the contract, this act of association creates an artificial and corporate body composed of as many members as there are voters in an assembly, and through this same act that body acquires unity, its common ego, his life and his will. The public person thus formed by the union of all peoples was once called a city, and is now known as a republic or the body politic." However, the condition of the illegal emigrant would be, according to Rousseau's definition, a subject and not a citizen.

The citizen has rights in exchange for which he abdicates independence through the acceptance of responsibilities, while the subject is subject because he is subject to the instituted power without, therefore, directly benefiting from rights. They are before the political power as space usurpers whose presence in the territory is an infraction to be corrected. However, the status of subject can be equally extended to all those who do not enjoy their rights, for various reasons. Favela dwellers in Brazil are sometimes referred to as 'invaders', even if they are officially Brazilian citizens. The question that arises is, 'does the local administration act on the citizen or on the inhabitant?', the answer to which is that it acts on the two, only in a markedly differentiated or discriminated way.

The Right to the City, to be effective, extends to the inhabitants and not only to the citizens, because it applies not only to those who enjoy a political status granted by the instituted power, but on the contrary, it is a direct and inalienable right that results from the simple reality of the existence of the human being in space. After all, the being only happens in the physical sphere, and life only occurs through the presence of a being in space, and the occupation of any physical space is an inescapable imposition of reality itself, and not a personal choice, so the right to political representation, plus the right to be and exist, has to extend to space to be effective. The responsibilities of urban planning processes as well as the duties of local administration gain, in this context, an ethical and existential relevance in addition to the already known and recognized political, economic and social dimension.

Our conception of human rights is programmed to apply to States. But in a context where many cities increasingly have independent policies, together with the fact that more and more people are living in them, it should lead us to the conclusion that city laws should be scrutinized in the same way as state laws are. If a state passes a law to discriminate against a certain ethnicity, this is promptly criticized. If a state, for example, criminalizes homeless people, it would also be seen as an attack on human rights. However, this is not the case, at least on a sufficiently large scale, with cities. This is in large part because we are under the assumption that if we don't agree on a law in one city, we can always move to another. But let us imagine the application of this logic to States. It would clearly be a regressive position and above all, it would lower our expectations regarding what is ethically permissible. We must apply these lessons to cities around the world, and increasingly advocate that there should be urban constitutions that guarantee basic rights for its inhabitants.

#### **5.2.10 Who's 'Rule of Law'? The Modern Urban Tyranny**

“Domination consists in institutional conditions which inhibit or prevent people from participating in determining their actions or their conditions of their actions. Persons live within structures of domination if other persons or groups can determine without reciprocation the conditions of their action, either directly or by virtue of the structural consequences of their actions” (Young, 1990, pp. 38).

Young's concept of domination is particularly relevant in the city, where higher agglomeration entails increased interdependency among citizens, and where systems of production are, in particular in the absence of a considerable informal sector, highly compartmentalized and mechanized. This interdependency acts at all levels and affects every single inhabitant of the city with no exception, and it can be said that every individual component of the urban setting is, even those who represent the government and the state, dependent and with reduced power of reciprocation towards those whose decisions affect him directly and indirectly. In this context, the anonymity of the inhabitants which constitute the city, compounded with the fact that each has an effect on the life of the other, is the perfect backdrop for a more effective and insidious economy of punishment, which, as asserted by Foucault (1977, pp. 80), is operated through “homogeneous circuits capable of operating everywhere, in a continuous way, down to the finest grain of the social body”, a new urban tyranny which is hard to contest and even harder to evade.

One can assert that a system of law applied in an urban scenario which does not allow for citizens to operate outside it, is, and in particular in the case of liberal state

capitalism, a system of governance of subjection, which mandates for itself more responsibilities than it can fulfil, namely in taxing relentlessly but providing in shortage and with inadequacy. This is particularly relevant to an economic system that relies on the practice of exclusion. Rendering informal, untaxed economic activities illegal therefore can only be legitimate (and ultimately functional) if this same system provides for its citizens to the very extent of their needs and expectations, for anything short of this is, in the case of expectations, *invites*, and in the case of needs, *forces* citizens into non-compliance, and furthermore their struggle to survive and acquire the goods and services that are needed for everyday life will entail stepping into the realm of contestation, illegality, marginalization and exclusion.

However what will be proposed hereby and expanded further on is not therefore a government which exchanges and expands its right to regulate and tax with the provision of 'full inclusion', no matter what that may be calculated as: One is rather seeking the readjustment of the perception of the inherent value of the informal market, namely as a source of independence and welfare to urban populations worldwide, as well as a source of positive contestation and structural reform. The ability the informal sector has in influencing the formal market, as well as of constituting a threat to state dominance, is illustrated here by Bayat (2004, pp. 95-96):

"First, the often 'informal' and free-of-charge distribution of public goods exerts a heavy pressure on the resources which the state controls. Besides, the rich- the real estate owners, merchants, and shopkeepers- also lose properties, brands, and business opportunities. The alliance of state and the propertied groups adds a class dimension to the conflict. On the other hand, the actors' drive for autonomy in everyday life seriously undermines the domination of the modern state. Autonomous life renders modern states, in particular the populist version, rather irrelevant. Moreover, autonomy and informality (of agents, activities and spaces) deprive states of the necessary knowledge to exert surveillance... Indeed, programs of squatter upgrading may be seen in terms of opening up the unknown to be able to control it. Conflict between these encroachers and the state, therefore, is inevitable"

However despite attempts to formalize the informal sector, or to promote self-help programs under the stewardship of the state, urban informal economies still continue to defy state control. Particularly in times of economic crisis, the informal sector will naturally grow, as those in the middle classes who have become unemployed flock to activities which will generate quick, flexible income, as well as throw them into a state of contestation and possible illegality and loss of rights:

"The informal sector... is the second-best response of an economy facing shocks and trying to grow. The response is second-best because it entails losing, at least partially, the advantages of legality, such as police and judicial protection, access to formal credit institutions, and participation in international markets. Moreover, trying to escape the control of the state forces many informal firms to remain sub-optimally small, use irregular procurement and distribution channels, and constantly divert resources to mask their activities or simply bribe officials" (World Bank, 2005, pp. 1).

The following case studies will attempt to demonstrate how the informal market can affect economic, social and political processes in the city on a large scale, not only by providing security to its most vulnerable inhabitants, but also by being the source of

an identity, creating organizations which are parallel to the formal, 'established' and yet which do not seek to challenge the formal frontally, and, except in cases of state collapse, would not be able to topple the prevailing order, if not for lack of organization and capacity, then for lack of immediate motive. Rather these informal organizations serve as a complementary force to the prevalent rule of law, varying in attitude towards formal structures depending on many variables, the most relevant of which is immediate material necessity. The 'culture' of informality then cannot be disassociated from the *reality of need*, and as such is, and will continue to be, an essential component of urban economic structures and urban social arrangements alike.

### 5.2.11 Informality as the Urban Insurance Policy

**“In the quest for an informal life, the marginals tend to function as much as possible outside the boundaries of the state and modern bureaucratic institutions, basing their relationships on reciprocity, trust, and negotiation, rather than on the modern notions of individual self-interest, fixed rules, and contract”** (Bayat, 2004, pp. 93).

Informal economic activities are widespread and varied, and they are most relevant and practised within cities. One of the reasons for this is that “cities are important facilitators of economic growth, increased productivity, and rising incomes in poor and rich nations alike” (Quigley, 2009, pp. 116). For this reason, cities, and in particular cities in industrialized nations will be the source of output of products and services greater than that of rural areas (Quigley, 2009) which make them prime locations for the development of informal economic activities which not only often stimulate, but themselves are stimulated by the increased rate of production and higher levels of wealth. The presence of high levels of expertise in urban areas also make cities prime locations for the sharing of information and skills (Quigley, 2009) in particular because high levels of agglomeration mean that workers have employment opportunities in their immediate proximity (Rosenthal and Strange, 2001) which is a factor which empowers the informal market, in particular if there are high levels of qualified unemployed citizens which cannot find employment in the formal market. As Quigley (2009, pp. 119) asserts, “Considerable cost savings may arise simply from the presence of large numbers of economic actors in close proximity... The decisions of large numbers of imperfectly correlated economic actors in close proximity can provide a form of natural insurance”. This natural insurance of urban proximity is complemented by the capacity of the informal sector to adapt, complement, and challenge the formal system through its own mechanism of insurance and encroachment.

However, urban areas are increasingly locations where poverty, deprivation and exclusion proliferate. Informality can provide a 'natural insurance' to the hardships of the city, and this is manifested in different means. In cases where the formal market cannot provide enough employment or finance to the numerous urban actors, they will turn to the informal market which make the connection between this available workforce, and the other two other pools of value, the demand for goods and services, and thirdly the availability of resources, in times when formal finance is strained. This is a reality felt mostly in times of recession, economic crisis, runaway inflation or shrinking money supply. For this reason, participation in the informal market is not only particularly likely to happen within an urban context, it is particularly fundamental in cases of economic strain and in particular in places of particular dependence and interdependence, as is life in the urban context. However evidence that liberal state

capitalism has not only come to tolerate informal economic activities, but actively seek to maximise its own profit and dominance by using its flexible capacity of production, as well as lack of security and regulations, to produce cheap products for customized markets, or by using the informal employment market as a tool do absorb unrest in otherwise explosive periods of economic instability.

When the financial system, namely through a system of money supply which does not supply enough financing to the pool of resources and human capital available, or if monetary value becomes distorted because of high inflation or economic collapse, the informal economy may very well become the very centre of the economy, and therefore the principal motor of survival and sustenance. This has already been the case in events of complete state collapse, namely in Third World nations, leading to “the informal economy becoming the whole economy, a contradiction of terms” (Hart, 2000, pp. 155). What one has attempted to demonstrate is that citizens need not (and in reality, do not) wait for the collapse of the state, nor any of the other, less drastic factors named above which might precipitate the need for continued economic activity outside of the lawful framework of economic regulation. In this context, involvement in the informal market on the part of citizens, as well as tolerance, and even preferably the promotion of informal economic practices on the part of the state itself is one of the many ways in which the urban body may progressively become a body with unequalled capacity of survival and welfare, as opposed to a breeding ground for institutional domination, capitalist exploitation and oppression.

The informal system may also be seen as the anti-thesis of the ‘assembly line’ system, which although a factor for increased output, also dehumanizes the process of production, while disempowering workers by making them less skilled, less knowledgeable in regards to the process of manufacturing and distribution, and ultimately easier to replace. In this context, lower economic productivity may at times entail empowerment of the individual worker, although it has also been noted that research demonstrates that widespread participation in urban informal economic activities economically benefits middle-upper classes the most on the long term (Dallago, 1990, pp. 70).

### **5.2.12 Breaching the Dichotomy of Urban Informality**

One must also note that, quite paradoxically, the original intention for participation in the informal market, which is the attempt of the urban citizen to escape poverty, which he/she would encounter due to the shortage of supply by the formal market, consists of consciously stepping into economic irregularity in order to achieve social commonality. As poverty has been thus far defined as failure to obtain nutritional requirements as well as failure to participate in communal activities and fulfil communal expectations (Sen, 1984, pp. 342), participating in the informal market in this context entails an initiative to approach social normality by circumventing the ‘entrenched’ economic order, in which case Holston’s depiction of a situation whereby the “insurgent and the entrenched remain conjoined in dangerous and corrosive entanglements” is particularly interesting, for the intention for much of the ‘insurgent’ is not to initially challenge the entrenched, but to have the its own position converge with it, or at least to throw the perceived or actual differences of the two into question.

In essence therefore, the ‘insurgent’ only challenge the ‘entrenched’ insofar as they are excluded from entrenched benefits which they seek. In order to identify what the true source of this exclusion, or at least the source for the perception of exclusion

is, one must understand the divergences between the entrenched and the insurgent as being less tangible and more subtle than material needs. What has been argued hereby is that urban informality is a produces fascinating economic models, but most importantly, that it is a reflection of the very way in which human organisation responds to agglomeration, personal necessity and social aspirations, and in particular how urban informal activities in turn serve as a force which adjusts and is itself adjusted by the formal structures, in different patterns and with different intensities, but always with a consistently symbiotic relationship:

“The notion of ‘resistance’ now stresses the view that power and counter-power are not in binary opposition, but in a decoupled, complex, ambivalent, and perpetual ‘dance of control’. The idea is based on a view that wherever there is power there is resistance even though the latter may consist largely of small scale, everyday activities which agents can afford to articulate given their political constraints” (Bayat, 2004, pp. 86).

Furthermore, although participation in the informal market will often force urban poor citizens into the resistance and contestation, the motivations behind it are more often than not an attempt to escape poverty and fulfill social conventions and obligations:

“These actors carry out their activities not as a deliberate political act; rather they are driven by the force of necessity- the necessity to survive and improve a dignified life. Necessity is the notion that justifies their often unlawful acts as moral, and even ‘natural’ ways to maintain a life with dignity” (Bayat, 2004, pp. 92).

The political activism that entails struggle for survival, in which the attempt to fulfill social conventions is also considerably relevant, then expresses itself in different formats according to its different aims and methods, and is shaped in particular by the ‘formal’ structures which defines the boundaries of its ‘informality’. In particular, the point of transition that marks the change from quiet encroachment, through spatial advance, material gains, acquisition of social status, to open contestation, is the point at which the system of law which the informal market has been incrementally transgressing confronts and questions those gains frontally, in which case quiet encroachment is strategically replaced by loud contestation (Bayat, 2004, pp. 92).

The distance between response to local needs and inevitable global change are not as disassociated as they may seem, in particular when dealing with urban informal economic activity and its ability to shape societies. Urban informality not only changes, but has come to define sprawling cities of the developing nations, while consistently gaining in importance and relevance in the global cities of the North (Sassen, 2006). As such, the urban informal economic market may be conceptualized as a network of local responses, springing from individual or communal necessity, but attending and actively addressing established rules of law globally. If one is to approach the informal market as a direct and collective response to any and whatsoever perceived established order, and in particular its reciprocal and sometimes even imitational relationship with the ‘formal’, then the concept of necessity is elevated from including those who participate in the informal activities, to representing the necessity of the compounded system of formal and informal; In essence, the manifestation of the necessity (and ability) of the whole apparatus of human organization to evolve and adapt to ever changing circumstances, needs and resources.

### 5.2.13 The Dharavi Informal Housing Complex- History, Context and Analysis

As a second case study, we will use the Dharavi informal housing complex as a case study to demonstrate how one can use the Sliding Puzzle to open up a new road which could then be used to drive further redevelopment drives. Dharavi is one of the world's most notorious informal neighbourhoods, and is one of the largest in Asia and indeed the world, and is located in Mumbai, India, currently housing anywhere between 700,000 and 1 million inhabitants sometimes reaching the extremely high population density of 277,136 per square kilometer (Venkat et al, 2018). The Maharashtra State government has had plans to redevelop the Dharavi complex, however, there has been much discussion in academia as well as within concerned civil society around the ability or even willingness that the existing State plans for redevelopment will have insofar as the relocation of its current inhabitants goes. It is not only a redevelopment drive that is of a very high scale- Dharavi's high visibility, the contentious nature of informal housing generally speaking, the relative centrality of the land it sits on and hence its high value makes it all the more coveted and any plans for its redevelopment even more contentious and high-stakes. In short, the Dharavi complex is a perfect case study not only for contentious, high-stakes urban redevelopment in a complex environment that demands a multi-disciplinary approach but can also

Patel and Arputham (2008, pp. 43) describe the state of the plans for the redevelopment of Dharavi as such in 2008:

“... the government of Maharashtra's plans for the Dharavi Redevelopment Project (DRP) divided Dharavi into sectors for which international companies would bid for the right to develop. Although the DRP acknowledged that redevelopment must rehouse or resettle Dharavi's current population, there was no consultation with the residents or enterprises in Dharavi. There were serious concerns that commercial developers would seek to minimize the costs of rehousing the population and maximize the amount of land cleared for commercial development. With no clear policy or official documentation on who would be entitled to rehousing or resettlement, or on grievance redressal for those who would be left out, residents feared that many households and business enterprises stood to lose their homes and places of work. Thus, the homes and livelihoods of hundreds of thousands of Mumbai inhabitants are at stake, as is the future of thousands of local businesses in Dharavi that are of considerable importance not only for livelihoods but also for Mumbai's economy.”

What followed was public, political and academic contestation with some degree of international attention. The main point of contention can be summarized thusly (ibid, pp. 250):

“The response from community leaders in Dharavi was clear and simple: to the state, don't ignore us; to the investors, Dharavi is not a greenfield site, hundreds of thousands of people live there and they will not just passively accept the state's plans. Please ask the state to undertake a survey and provide you with a detailed brief of what you need to ensure within the redevelopment. We are sure you don't want to have newspaper and TV footage of your bulldozers coming up against local communities protesting.”

The State's position started to change on account of these events, and started to be more receptive to certain initiatives coming from civil society and academia, which

among other consequences led to efforts to undertake an extensive survey of the built environment as well of Dharavi's residents. This survey was then conducted (Parel et al, 2009) and followed previous warnings that slum dwellers themselves would almost inevitably disrupt any redevelopment process if they are not involved in the process (Patel and Arputham, 2007).

#### **5.2.14 The Specificities of Redeveloping Informal Housing**



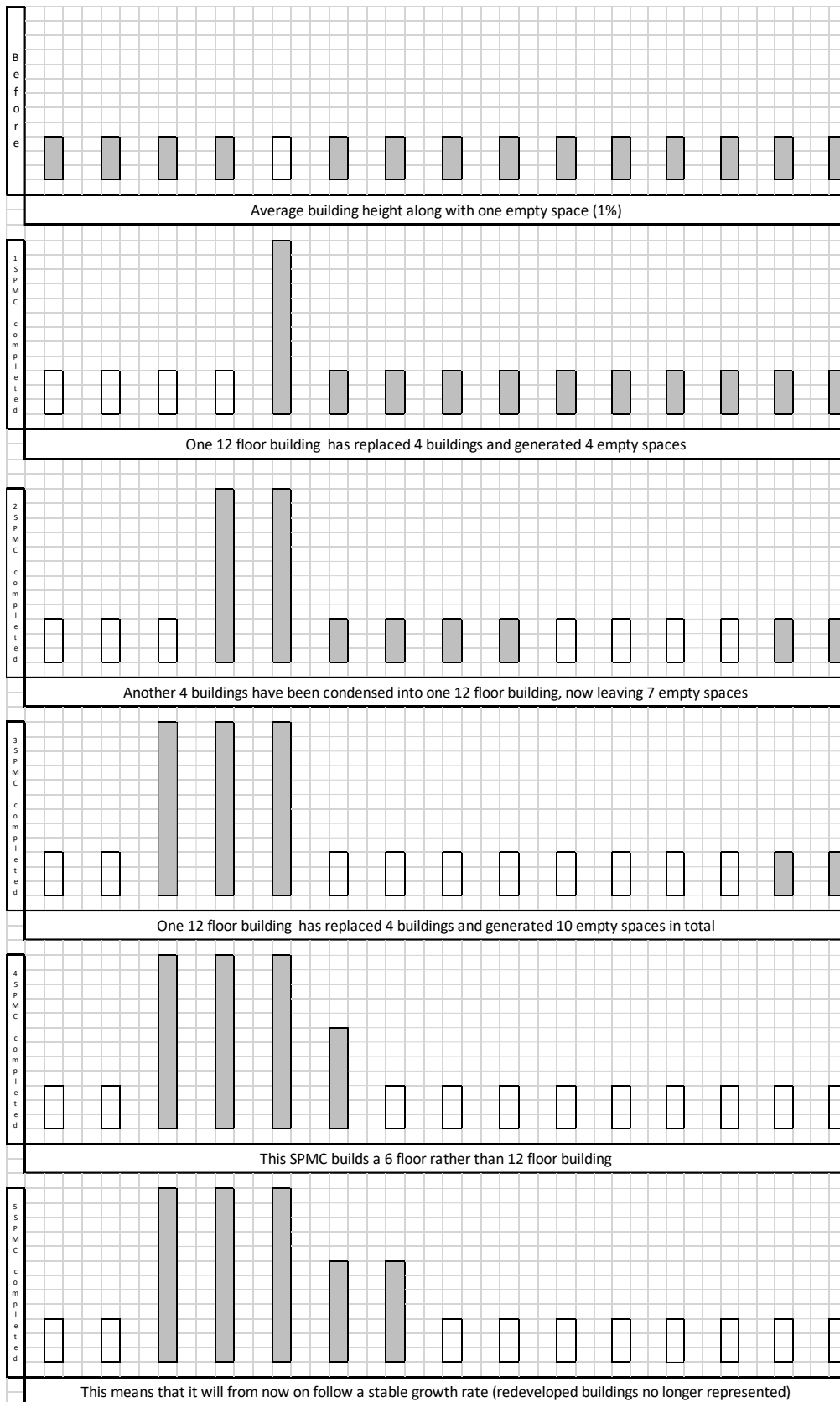
**Image 150 - The Dhavari Slum in Mumbai (Picture Credits: The Economic Times)**

Dharavi has a very high population density, and even though most of the housing, when compared to many of its surroundings, is quite low, considering its informal nature as well as the general state of the infra-structure, its buildings can sometimes reach quite impressive heights. Furthermore, Dharavi often does not have the required public utilities serving its often poor and low-income population. The mixture of high population density alongside general lack of adequate infrastructure is of course not only a problem that needs solving in its own right, that is to say, the construction of the necessary infra-structure in order to service the population is central and worthy objective in and of itself, however, it is also in part an impediment to large scale redevelopment drives because it makes any development harder precisely because of the lack of space.

One of the main difficulties of redeveloping slums such as Dharavi is that lack of space as well as the tendency for urban development initiatives to be purely profit driven, which often means that new constructions will build brand-new housing that ends up in the hands of the middle class, instead of benefiting existing populations. Present inhabitants will often be forced to relocate, which brings with it enormous negative socio-economic disruption. Some previous redevelopment proposals have made proposals that are very much complementary to the redevelopment model hereby

proposed, which is in strict opposition to the State's initial plans to redevelop the complex wholesale by portioning its land and proceed to sell the rights for its redevelopment to the highest bidders (Patel and Arputham, 2008), such as proposals to introduce more vegetation and foliage so as to lower the general temperature and increase its general sustainability outlook (Venkat et al, 2018). The most important contribution of this study and proposal is two-fold, primarily, of course, it is an attempt to demonstrate how a novel urban planning instrument, the Sliding Puzzle Model, can be used to redevelop Dharavi incrementally, causing reduced disruption to its inhabitants and socio-economic fabric, increasing building height and quality, while also being able make way for important infrastructural development such as roads and access points. Its secondary contribution really lies in the incrementality itself, as well as the general objective of redeveloping Dharavi in a way that prevents what would otherwise be the inevitable outcome- the mass displacement of its almost one million inhabitants and the human catastrophe that this in turn represents.

Let us now look at how the Sliding Puzzle Model, using the logic that was previously presented, can be used to incrementally verticalize existing low-height building such as the ones found in the Dharavi Slums. It must be noted beforehand that Baweja (2015) specifically has criticized the Dharavi Redevelopment Project on the basis that it “reduces slum rehabilitation to a simplistic problem of numbers in terms of Floor Space Index. At the core of the battle over Dharavi Redevelopment Project is a cultural conflict over urban citizenship and what the ideal city should be.” This insight is important, however, one would hereby argue that the Sliding Puzzle Model's mechanism could and should be applied, specially in cases such as redeveloping Dharavi specifically or any informal housing complex generally, with the full participation of the local population. Indeed its proper application would absolutely necessitate it insofar as the concept of relocation within proximity means that inhabitants would need to be accounted for and relocated with full rights as either tenants or owners of the newly constructed buildings. It must also be noted, and strongly so, that the verified failure of previous and ongoing plans for the redevelopment of Dharavi can lead us to a lengthy analysis of cause and effect that ultimately points to the inadequacy of the Dharavi Redevelopment Plan, initially drafted in 2004, as well as to the lack of successful alternatives proposed by the State since (Patel and Paneria, 2021). This case study can also be interpreted as an indication for the necessity to develop novel approaches and innovative urban planning mechanisms that can unlock contentious urban redevelopment projects. The Sliding Puzzle Model is at heart an attempt to do just that, in proposing a mechanism whereby empty space is introduced as an ever-present factor, facilitating redevelopment whilst avoiding the complete and indiscriminate displacement of local inhabitants and functions.



**Figure 33 - A representation of how the Sliding Puzzle Model can be used to verticalize previously low-density and low-height urban scenarios**

As we can see, the incremental nature of the Sliding Puzzle Model's tendency towards verticalization also allows for the relocation of existing residents within relative proximity. This means that existing residents do not have to be relocated to the periphery, which in of itself brings not only unnecessary strain on resources, which as we have discussed previously, brings about severe impacts towards Climate Change, meaning they can continue to benefit from existing socio-economic relations, which are often pegged to certain localities, whilst still benefiting from the privilege that brand new housing brings.

In the absence of instruments like the Sliding Puzzle Model, developers will often either be forced to wait for disasters and accidents, or even resort to underhand tactics. They might force inhabitants out, or simply abstain from maintaining buildings so that they become vacant and derelict, enabling the demolishing of the buildings and only then, scaling-up- most notably, forced relocation has been throughout history one of the most persistent scourges of the urban poor. In particular, the urban poor's drive to live within relative proximity of city centres is a potent force entrenched in a dialectical relation with State-enforced evictions and relocation- this drive shapes both cities, political events and urban policy. Mike Davis's book *Planet of Slums* serves as an in-depth study of this highly politically underestimated and somewhat academically overlooked motor of human history (2006, pp. 32, 36-37, 51, 61-69, 98-108).

Now let us take closer look at how the Sliding-Puzzle can be used to redevelop the Dharavi Slum using different applications of the same virtual environment so as to illustrate how, little by little, space can be opened up and whole neighbourhoods can be redeveloped.

Let us now take a look at how the incredibly dense and chaotic nature of the Dharavi slum can be transformed, using two variations of the Sliding Puzzle Model. Due to the complex nature of the Sliding Puzzle Model's possible variations, it is a planning instrument that comes with its own concepts language and codes.

#### **5.2.15 The Scenario – Building a new Central Road and Access Point for Future Redevelopment**

The first scenario is simple- the Dharavi slum is incredible dense and its deficient or inexistant infrastructure makes it very difficult, to not say virtually impossible, for any large-scale construction to take place within its core, mostly due to the inexistence of a sufficient number of proper roads of wide enough scale. This is a problem that unfortunately is true for many informal settlements across Asia and the world. Our first objective therefore is to build a large enough road that starts in Dharavi's periphery, and goes into Dharavi. The main problem however is that the lack of space as well as the fact that, using conventional urban planning instruments, residents which happen to occupy the land which is needed for the new construction will either be evicted with no compensation, or at best, relocated to the periphery of the city. Here is an image of the Dharavi Slum, with the same image below but with the targeted areas now being coloured. The green area represents the area which we will target for verticalization and scaling-up, whereas the red area with the black lines represents the land that is needed for a vital new road that goes into the very heart of Dharavi.

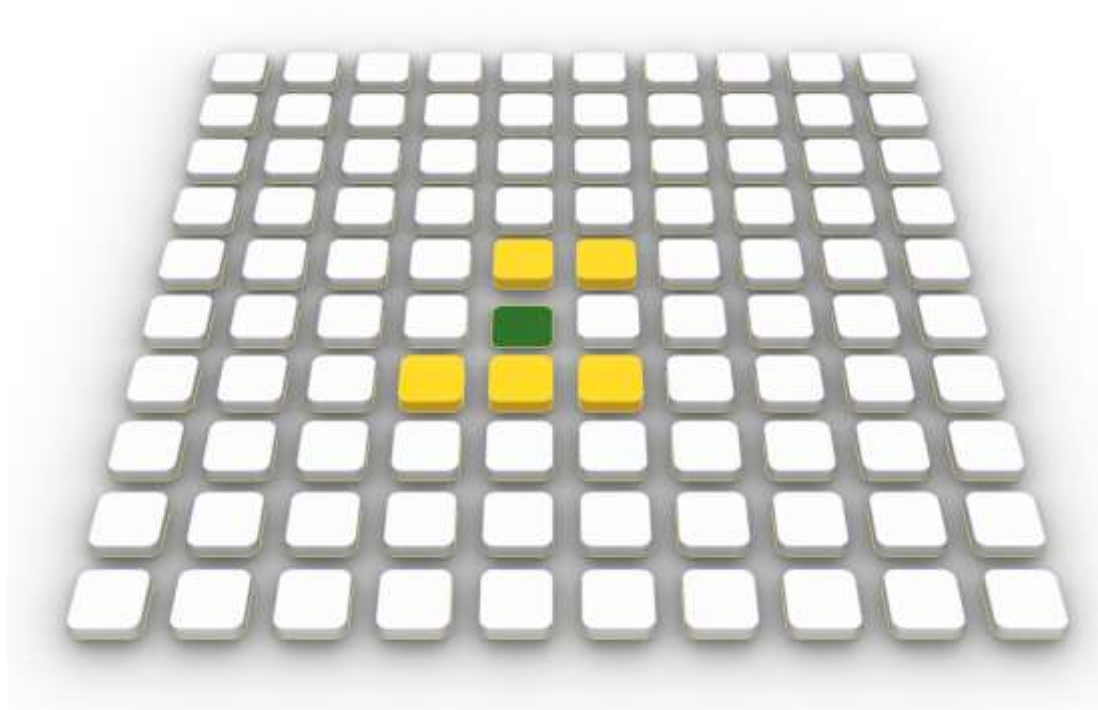


**Image 151 - A bird's eye view of the Dharavi Slum, (original image taken from SCNP, 2018)**

The first objective is therefore the open up the area in red so as to build a new, wide road that will facilitate access as well as logistics for any future redevelopment drive. Let us now look how the Sliding Puzzle can be used to free up space in a straight line, in a set of virtual environments generated by the author of this piece using “Rhino 3D” Software.

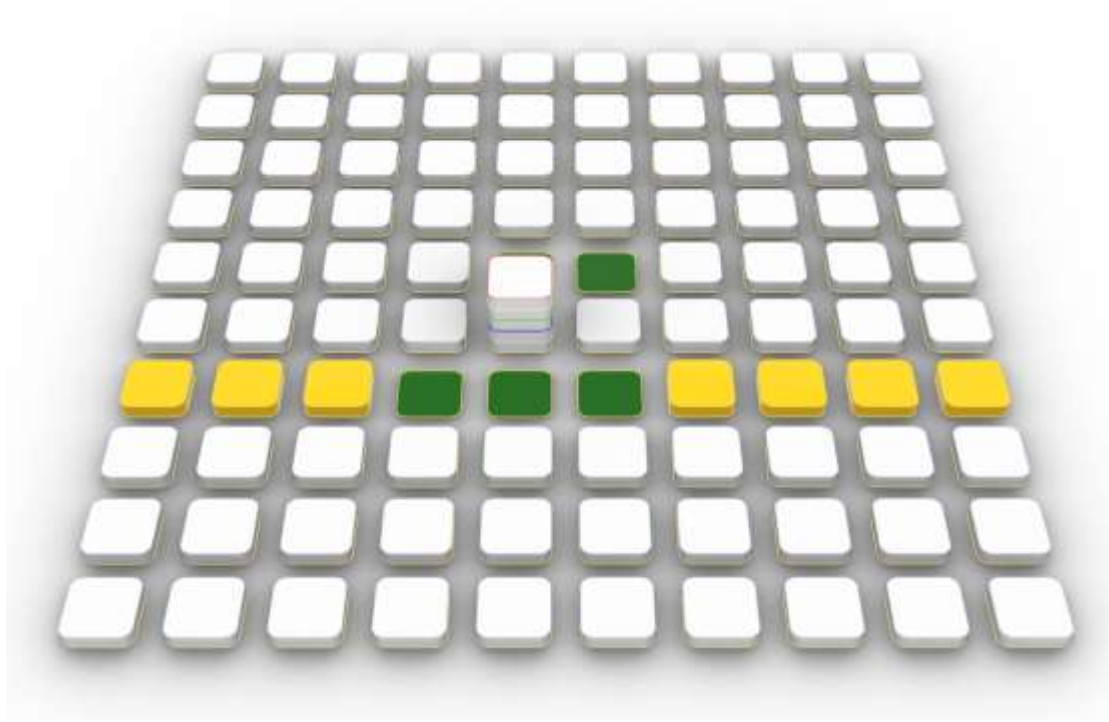
All we need to start with is one, single empty space, in this case relative to a small collection of houses. Notice how at this initial space is relatively small. We will then propose that in this small space, a new, taller building is built, with the areas in yellow being the ones marked for redevelopment in the next step. In order to represent the specific application of the Sliding Puzzle Model that might be relevant for such a scenario, one will hereby use the exercise “One Percent Initial Empty Space with Height Gain from 3 to 15 Floors with No Capacity Gain Followed by Height Gain from 3 to 9 Floors with No Capacity Gain Followed by Height Gain from 3 to 12 Floors

Seeking to Amass Empty Space (Highway)”, coded 1% 0s 3/15 ncg 3/9 ncg 3/12 ncg amass0.



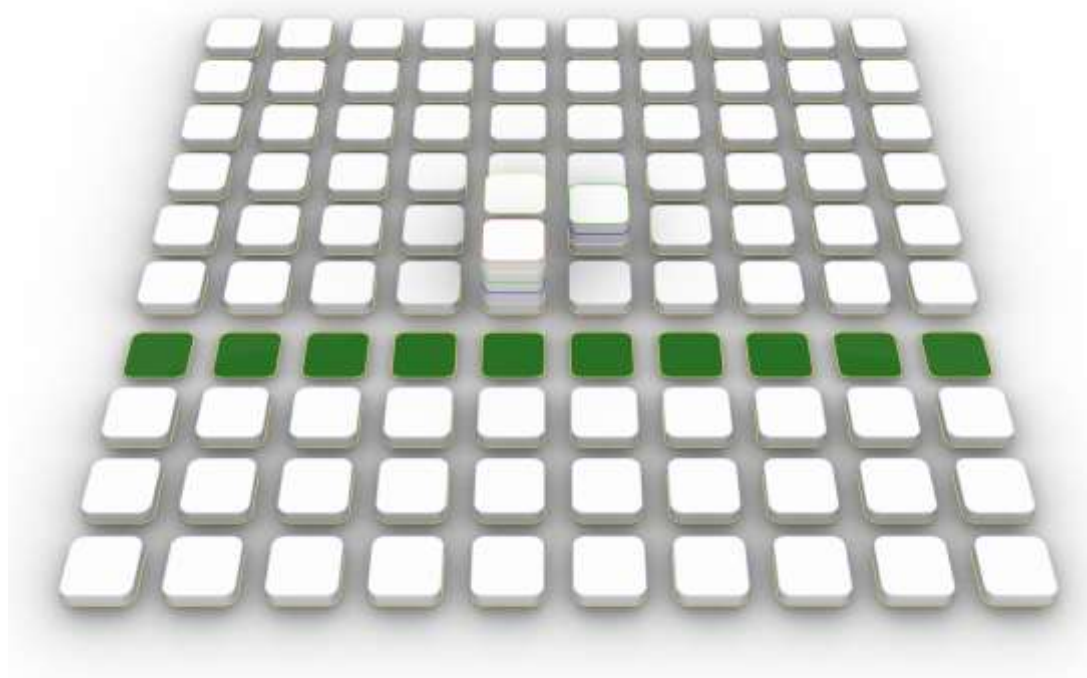
**Image 152 - One empty space in green and five target buildings in yellow**

Occupants of surrounding areas will be invited to relocate to the new building- this is much easier in a case such as Dharavi, as if the process of redevelopment also offers some way into housing legality, that is to say, that their informal housing will be replaced by tenancy in a newly-built, legal apartment in a building block, which one can assume would be for most of Dharavi’s residents a more attractive proposition than the current situation which carries constant risk of eviction alongside all of the problems rising from lack of orthodox infrastructure. Their former houses will, of course, not become empty spaces. One can notice, below, how the empty space being accumulated can be accumulated in such a way so as to form a sort straight line. The areas marked in yellow in the previous step are not themselves empty spaces, but rather targets for redevelopment.



**Image 153 - Five empty spaces in green (one hidden behind redeveloped building) and seven target buildings in yellow and one redeveloped building with 12 floors**

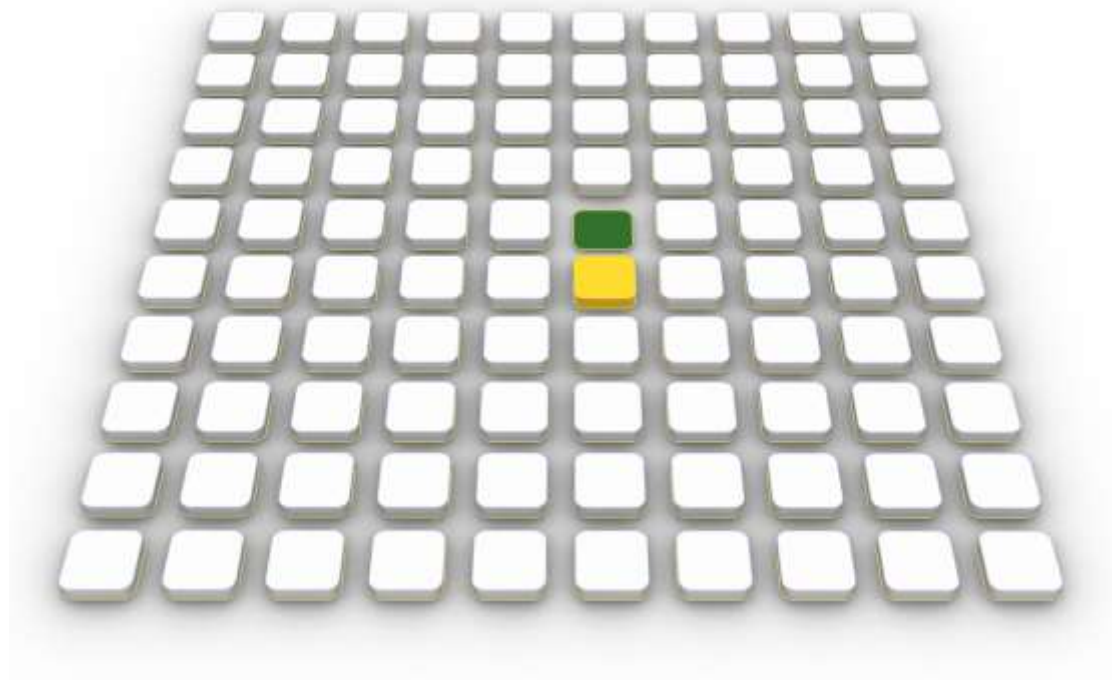
The same process is repeated, but with this new batch of redeveloped parcels now being relocated to another building. The reason for relocating the new slots into a new building, as opposed to building a single, extremely tall building that will re-house all of the targeted slots is due to the fact that the gain in heights should be undertaken incrementally, rather than drastically. Do note that in this particular virtualization, the new buildings are already considerable taller, in this case, *five times taller*, than the previous average building height. In Dharavi, this number of magnitude can be considered reasonable, due to the noticeably low height of the present buildings.



**Image 154 - Ten empty spaces in green and seven target buildings in yellow and one redeveloped building with 12 floors, one with 15 floors and another with 9 floors**

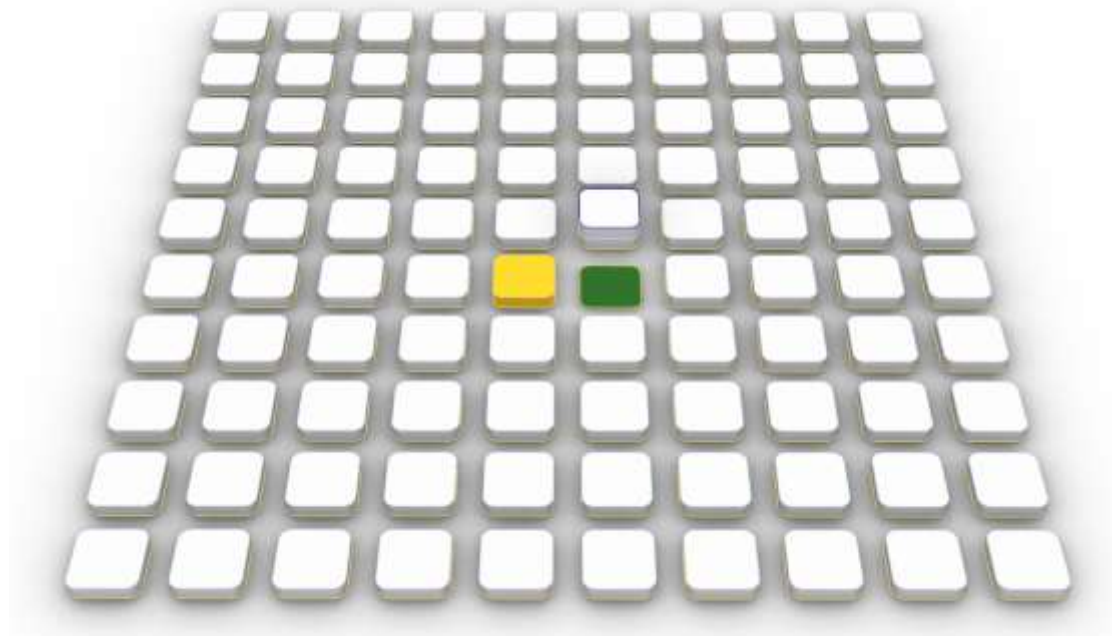
The final result is as we see above- there are now two new relatively tall building blocks that have been used to not only relocate the Dharavi inhabitants within very reasonable proximity, therefore causing as little damage to their present socio-economic relations and daily needs as possible, whilst also at the same time improving their living conditions and most importantly, allowing for the building of new, vital infrastructure that would have otherwise not been possible to build due to lack of space which will benefit Dharavi and Mumbai as a whole.

The area in green can now be targeted for redevelopment using a more regular application of the Sliding Puzzle Model using a much less drastic and ambitious gains of height. It is necessary to note that even though it may seem at first that no height gains would be necessary at all, it must be taken in consideration that extra spaces will always have to be freed up, using much the same logic as demonstrated above, so as to leave enough space to build other necessary infrastructures such as schools, hospitals and police stations. And even if such buildings were not necessary, there is another clear deficiency that most slums such as Dharavi have- the lack of green space. The extra space generated by the Sliding Puzzle can be used to build much needed parks which will both increase the value of the land and housing itself as well as add much-needed quality of live to the residents.

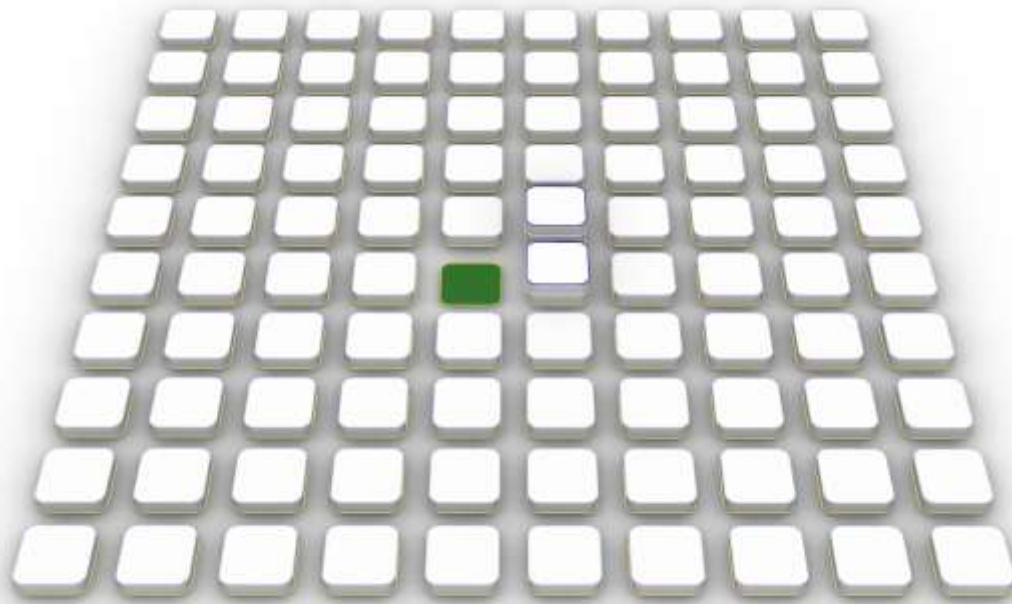


**Image 155 - One empty space in green, with one target building in yellow**

In this variation of the Sliding Puzzle Model, we again start with a single empty space, and this time, will target a single other slot. As we will see below, the new building now has twice the height of the original building.



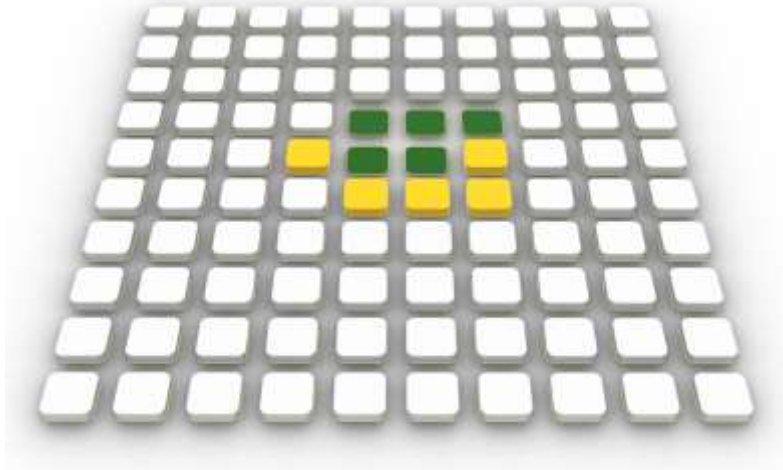
**Image 156 - One empty space in green, with one target building in yellow, with one building already redeveloped and standing at 6 floors**



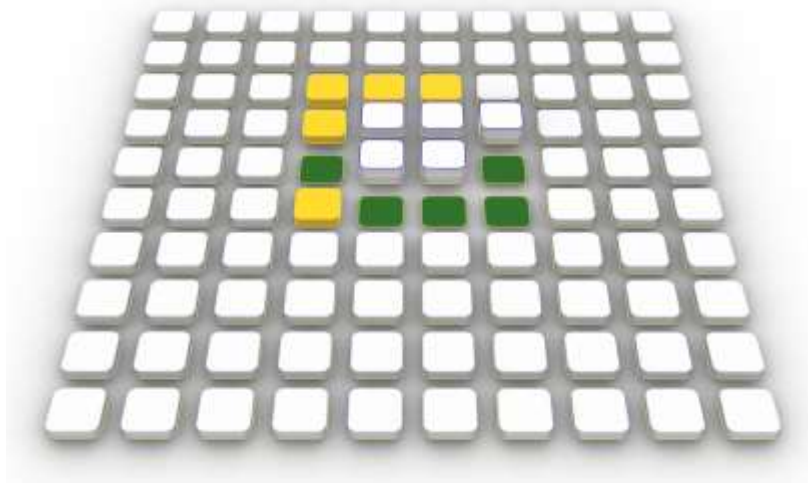
**Image 157 - One empty space in green, with two buildings already redeveloped and standing at 6 floors**

The housing capacity has now been increased, and perhaps even more importantly, it has been done while an empty space remains, albeit in a different location to the original empty space- this means that the process can go on indefinitely, making the SPM ideal for allowing and driving continuous cycles of development.

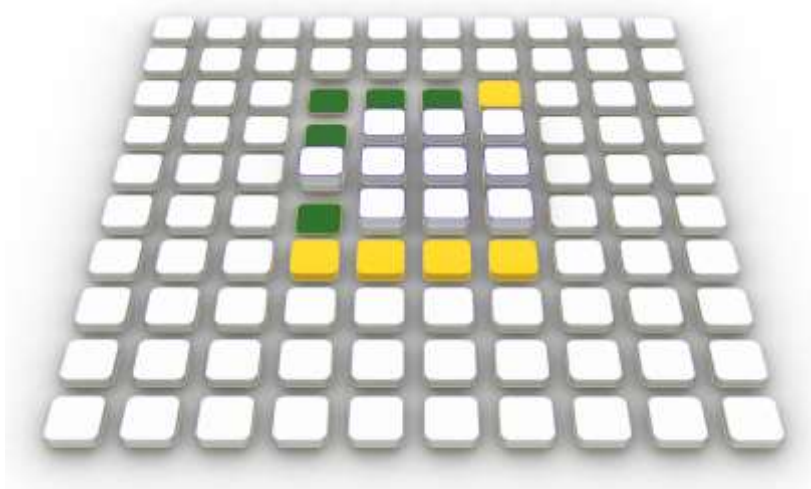
The objective of building an access point and new main road is a legitimate one in and of itself, however, ultimately, it may be viewed solely as the initial undertaking within a larger objective- the overall, incremental and socially-just redevelopment of the Dharavi informal housing complex undertaken in such a manner that guaranteed the relocation within relative proximity, certainly within Dharavi itself, of as many of its current inhabitants as possible. The building of access points would be a fundamental step insofar as they would allow for the heavy machinery as well as for the general logistics necessary for the undertaking of such an ambitious redevelopment plan to access the places where they will operate. After the construction of access points, another variation of the Virtual Environment exercises may be relevant in order to visualize how an incremental redevelopment drive may be executed, namely, the exercise “Five Percent Initial Empty Space with 8 Cycles with Height Gain from 3 to 6 Floors with Capacity Gain and Seeking to Amass Empty Space Seeking to Redevelop the Whole Block”, coded **5% 0s 8Cx1sc 3/6 cg amass0 Takeover**.



**Image 158 - Five empty spaces in green with five target buildings in yellow**



**Image 159 - Five empty spaces in green with five target buildings in yellow and five redeveloped buildings with 6 floors**



**Image 160 - Five empty spaces in green with five target buildings in yellow and ten redeveloped buildings with 6 floors**

This last Virtual Environment exercise has been referred to here simply to drive the point home that different applications of the Sliding Puzzle Model according to its different potential variations may be useful in different ways and during different periods of redevelopment projects in according to varying objectives. The use of the “Takeover” Virtual Environment exercise would be, merely as a basis for the incremental redevelopment of a whole area, most adapted from all of the specific Environments used thus far. Regardless of what these different scenarios may be and their specific application, it is still notable that within the universe constructed throughout this study, empty space must be seen as a constant valuable resource that the Sliding Puzzle Model can help to relocate, transform, harness, align and amass in accordance with different issues and needs. In the context of the redevelopment of informal housing, the aspects of the Sliding Puzzle Model which are most adapted to intervene in such an environment are not, however, relative to the multiplicity of applications and variations that depend on initial empty space, rates of redevelopment or even height gains- rather it is its incremental nature as well as its inherent logic of allowing for the relocation of current inhabitants within relative proximity. This is, after all, possibly the biggest risk that, in the absence of planning authorities which have the intention and capacity to intervene and drive the redevelopment and formalization of Dharavi whilst ensuring the rights of current inhabitants, incur- being ultimately expelled, on the basis of the “illegality” of their tenancy, from the complex altogether.

## **6 CONCLUSIONS, POLICY RECOMMENDATIONS, LIMITS OF THE STUDY AND FUTURE RESEARCH**

## 6.1 Overall Conclusions

Papers, studies and books about housing shortages and rising housing prices abound in the field of architecture and urbanism. The literature will often focus on socio-economic analyses, as it is obvious that social issues are linked to macroeconomic tendencies as well as central policy decisions often made at the highest levels of government. This study takes quite another angle, and frames itself very much within the discipline of urbanism and its orthodox angles of approach- for this reason, the centre piece of the study is an urban planning mechanism, and the main empirical dimension of this study is the development of variables, metrics and statistical analysis which demonstrates how this urban planning works and demonstrates what it can achieve.

The evolution of this thesis, which at its genesis was focused mainly on researching methods for democratizing local administration and the development of participation mechanisms reflects not only my own personal journey, but also the conclusions that sprung out of initial studies and the literature review. The deflation and disbanding of post-financial crisis social movements, some of which focused on housing issues specifically, along with the relatively modest political and socio-economic advances achieved by participatory programs progressively turned the focus of this study away from abstract political considerations and towards hard numbers and specific urban planning instruments. This, I believe, constitutes a positive evolution not only in my personal journey as an urbanist, but most importantly it visibly augmented the overall quality of the work hereby developed and presented. By giving it a solid empirical basis, as well as in turning my attention mostly towards a specific theme- namely, land management and zoning- one ultimately unlocked a wide array of potential applications and possibilities, and the numerous articles that focus specifically on the further development of the Sliding Puzzle Model that add layers onto the original Sliding Puzzle Model concept and the article in which it was originally developed, namely the study about how the Sliding Puzzle Model can be used to build Social Housing (Silva Jordão, 2020b), along with the article that focuses on the concept of Convex and Concave Skylines and how the Sliding Puzzle Model interacts with this concept (Silva Jordão, 2020c), demonstrate the significant accrual in value that this transformed focus made possible.

The use of virtual models in order to calculate and demonstrate the capacities as well as potential applications of the Sliding Puzzle Model is a bold methodological choice, however, in hindsight is strictly necessary as it allows us to isolate the core variables that the Sliding Puzzle most directly affects. The complexity of urban environments and specifically the extreme complexity and subjective nature of their socio-economic and political dimensions means that though we are generally open to using virtualizations of the built environment, when it comes to applying the same tools of abstraction and isolation to other facets, we are substantially more reluctant. The Sliding Puzzle Model uses virtual environments insofar as there is a subjective, mathematical basis for its calculations, and in this domain, it helps that some of the underlying capacities of the Sliding Puzzle lend themselves easily to abstraction and deterministic calculations, the best example of this being the calculations pertaining to housing capacity gains. Isolating these variables is of utmost importance and at the centre of the thesis is the demonstration of the housing capacity gains that can be achieved with the mechanism that is developed throughout the various articles. However, the more arbitrary and subjective components of this study are as important,

albeit not always anchored, as they sometimes cannot be, in deterministic mathematical calculations.

Beyond some of the considerations within and stemming from the use of virtual environments as well as the specific calculations relating to height and housing capacity gains, there are other considerations pertaining to the specific role of Municipal Authorities if one is to imagine a widespread implementation of the Sliding Puzzle Model mechanism. One of them is that indeed the Municipal and State authorities generally speaking are in a great position to lead its use and to both affect the urban fabric positively, but also insofar as they are uniquely equipped to do so. Let us take the example of simple logistics- if one is within the context of a specific Sliding Puzzle Model Cycle proposing a property swap arrangement to a certain property owner and perhaps its inhabitants, having all manner of logistical support would help to help transport equipment, material and possessions which may need transporting, and of course having the State apparatus leading the process from the legal and administrative point of view is an obvious advantage. This Thesis has at its core mathematical calculations and concepts and innovations pertaining to urban land management so as to grant it as tangible a base as possible, however, its insistence on political analysis and breadth of philosophical reach is not a coincidence- one sincerely believes that the Sliding Puzzle Model is simultaneously an instrument that can transform the urban fabric, as well as it can be an instrument that has the potential to, if applied correctly, methodically and sincerely, be transformative for Urban Planning Authorities insofar as it grants them an extremely powerful new tool that unites within itself the logic both of the State apparatus as well as of the private housing market and in doing so, generates an instrument that can interact with both profoundly and consistently with results that can be grandiose, and indeed, negative as well as positive.

The more arbitrary aspects of this study can be placed under three categories. Firstly, considerations regarding general urban contexts such as considerations regarding economic crises and how urban planning mechanisms tend to respond to them, one such example being an analysis of the underhand strategies, such as arson, that are used in some degree because of the absence of planning instruments such as the Sliding Puzzle. Secondly, considerations regarding the necessity and applicability of the Sliding Puzzle Model as an urban planning instrument using more specific examples, such as the example of Paris and its stringent building height restrictions which have largely pushed affordable housing to the periphery. Thirdly, exploring alternative applications of the Sliding Puzzle Model as well as probable or possible setbacks, limitations and unintended secondary effects, such as the possibility for the potential usurpation of the Sliding Puzzle mechanism by agents which aggressively seek to profiteer from new construction projects. As a whole, this study seeks to, insofar as possible, to add additional layers of details and nuance so as to develop an urban planning instrument that allows for urban planners to apply certain variables, namely, a certain amount of initial amount of empty space and a target building height, so that certain gains can be made in contexts that allow and demand for it, being that the mechanism itself also lends itself to all manner of other variations. For example, though the initial paper and foundational work of the Sliding Puzzle specifically addressed contexts in which scaling-up was the target (Silva Jordão, 2018c), the Sliding Puzzle Model at its core can be used to produce less dense urban spaces just as it can be used to produce more dense urban spaces. It can be used to open up larger spaces to allow for constructions larger than those previously accommodated by the area being targeted, it can be used to amass empty space along a straight line in order to, let's say, build

new roads- this is to say, the Sliding Puzzle mechanism at its core is incredibly versatile, and the choice to concentrate on densification and scaling-up is directly linked to the initial preoccupation of my work and Thesis, which is inherently intertwined with considerations about “The Local Administration and the Right to the City”, and in particular, how urban planning mechanisms can be developed and applied so as to alleviate specific deficits and crisis such as the ongoing housing crisis that can be seen somewhat ubiquitously all over the world, but particularly in highly sought-after city centres.

Ultimately, as is made explicit in the previous paragraph, although this study is broad and far-reaching in the questions it asks, and the model it ultimately introduces, invents and methodically develops, as well as the conclusions it reaches have multiple different applications and spin-offs, its ultimate contribution is ultimately reflected and even perhaps mostly contained within the title of my first peer-reviewed publication, “The Sliding Puzzle Model for Scaling-Up Cities: How Continuous Cycles of Development and Growth Can Be Enabled by Introducing State Enforced Quotas of Empty Urban Spaces” (Silva Jordão, 2018c). The controversial, provocative, and yet mathematically-based mechanism that it introduces, the Sliding Puzzle Model, beyond all its complexity and nuance, proposes a simple, and yet revolutionary concept- that in the context of an ever-changing urban environments and in a world undergoing perpetual fast-paced transformation, empty space is a form of wealth in and of itself, and holds the ultimate key to the ability for cities to be able to adapt themselves to ever-changing necessities and realities. **This set of considerations leads one to the subsequent consideration that, as such, urban empty space, and central empty urban space in particular, is not just an empty vessel to be filled, but a necessary component that can be ever-present within the urban fabric, and that this logic can be inserted within the very land management and zoning codes that serve as the primary matrix for urban governance.**

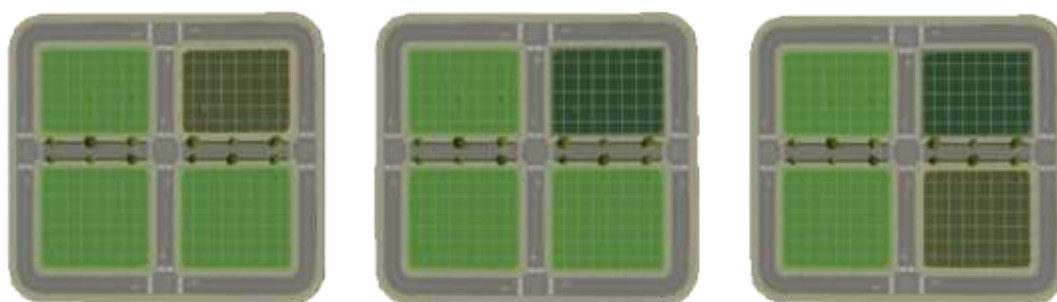
Let us remember what the initial hypothesis of this Thesis is, which was at the beginning of the project as follows:

“By introducing a quota of empty urban spaces in urban centres, one can use them as pivots to relocate and then redevelop existing buildings. By replacing the old buildings with newer, taller and more efficient buildings and then demolishing the older buildings, thus generating new empty spaces, one can produce continuous cycles of development that will increase the overall housing capacity of urban centres.”

It was indeed not only the hypothesis, but in hindsight, a somewhat easy hypothesis to prove at its most basic value- it stands to reason that empty space, and even more so a quota of empty space, can be used to develop and redevelop urban centres. However, it was in the particular demonstration of how, to what degree, according to what mathematical logic, with which variables and specifications and what exact results this logic produces that ultimately ends up producing the Thesis. The Thesis hereby presented is therefore not solely a positive response to the initial research question, which enquires as to the possible urban planning mechanisms that might be useful to solve housing crises and unlock development- indeed one can- but rather it provides a positive response and whilst doing so, showing its calculations, demonstrates the specific variables that are needed for specific needs and results. The Thesis is therefore at the same time the proposal that a quota of empty space can be introduced and in doing so, one is capable of unlocking development drives, but also that if, for example, that two Sliding Puzzle Model cycles can result in a housing capacity gain of

X amount if one redevelops a building with Y amount of floors as a building with Z amount of floors. Each particular variable across the different virtual environments and scenarios and its specific numeric results are therefore in and of themselves self-contained resultant Theses that spring from the original, key, fundamental Thesis, which is, as mentioned, that the introduction of quotas of empty urban space can help to build housing in central urban areas as well as it can unlock other development projects.

The full spectrum and profundity of the realization that within empty space lies the solution to a lot of urban planning problems can in turn only be, firstly, illustrated, and secondly, put into practice, via the Sliding Puzzle Model's initial, brutally simple formulation and mechanism, as illustrated below once more, in a process described in this study as a "Sliding Puzzle Cycle", or SPC.



**Image 161 - One Sliding Puzzle Cycle**

The Sliding Puzzle Model grants urban empty space life, and inserts it into a complex mechanism that makes it so that it gains a conscience and a capacity, namely, the conscience to identify and act upon building or whole blocks that need redevelopment, and the capacity with which to do so in the context or urban planning dynamics and regulations, ultimately granting the capacity for empty space to move around and leave in its wake a new construction that was not there before. Empty space then goes from being conceptualized as something that is, and cannot, and could not ever aspire to be something other than a passive, empty canvas to be painted on, and instead becomes the ultimate master painter itself, now instead of being the passive recipient of the artist's work, becoming aware of itself and its environment and paradoxically becoming the most efficient artist in and of itself, transforming the environment in its vicinity using the power of an unfulfilled potential that actively seeks to fulfil itself by acting decisively upon its environment.

The Sliding Puzzle is therefore not only a revolutionary urban planning instrument- at its core is the use of the philosophical principle that emptiness, or something that approaches nothingness, is not only the greatest representation of ultimate potential, as it intrinsically carries within itself no flaws nor limitations, it serves as an ode to the power of imagination and the transformative capacity of starting from scratch. But not only does it carry within itself this profound philosophical insight- it makes it useful, it allows a manner for empty space to reveal its true potential in a manner that is tangible, particle, pragmatic, useful and perhaps even beautiful. It grants the cities which may be visionary and expedient enough to use the power to embed a mechanism that allows them to be prepared and act upon a facet of reality which is an inherent feature of the universe, or perhaps even more so, *of physical reality itself*, the inescapable, inevitable, equally daunting and fascinating feature of the world that surrounds us- the ever-

transforming nature of everything. Heraclitus once noted in way of commentary and analysis of the nature of nature itself that “the only constant is change”- the Sliding Puzzle grants cities, which are themselves one of the best testaments to the relevance of this observation, as they are, by their very nature, in constant flux and transformation, the capacity to not only handle transformation, but to accommodate for it methodically and therefore to become more efficient, more just, and to fulfil their own specific urban planning objectives, but perhaps most importantly, in giving cities an instrument for leading and acting upon this constant change actively and consciously, makes them fulfil their own nature hence becoming a truer reflection of what they naturally aspire to become regardless.

### **6.1.1 Some Additional Considerations Regarding Height, Density, Potential Scenarios of Degrowth and the Sliding Puzzle Model**

It is now noteworthy to point out that thus, the logic of the Sliding Puzzle Model cannot, and should not be understood merely from a perspective of infinite growth within the framework of a capitalist mode of production and the type of urban development that occurs within it. Rather, it’s an urban planning instrument and contribution towards the inherent logic that one usually applies to urban land management, which, via the strategic use of empty spaces, literally opens up and maintains space that can then be used to develop and redevelop the urban fabric. It does indeed so happen that it cannot only be used to, but indeed has thus far been mostly developed so that under the capitalist mode of production and current logic of urban development, more housing can be built in urban centres where it is needed the most. This is an important distinction regardless, but it is particularly important in this sub-chapter as we will be discussing the manners and extent to which one cannot assume that the model of constant-growth will remain in place for the near future or much less medium to long term future. What one will also discuss and demonstrate in this study is that because of the fundamental logic of the Sliding Puzzle Model, which is as mentioned before to grant more flexibility and capacity for development and redevelopment to the urban fabric via the strategic use and perpetual maintenance of empty spaces, it will remain a valid and important urban planning instrument under any mode of production or economic model that it operates under, which is to say, that the Sliding Puzzle Model in a way transcends patterns pertaining to socio-economic arrangements as its urban planning mechanisms are for the most part concerning spatial modelling and urban typology.

One may very well also envisage a future of degrowth, both in terms of population and demography but also in terms of cities, many of which could start contracting in the near future, amongst many situations in which it already has. Paradoxically, even though the Sliding Puzzle was invented and developed with growth and specifically, the augmenting of height and the densification of urban centres with a particular view to build housing where it is needed and wanted the most, it can also be used to decrease density and height.

## 6.2 Policy Recommendations

### 6.2.1 The Case for Quotas of Empty in Housing Priority Zones to be Used for the Sliding Puzzle Model

The main policy recommendation resulting from the Sliding Puzzle Model is that highly sought-after, expensive, compact urban areas are the ones where it would make the most sense, paradoxically, to introduce a mandatory quota of empty space (to be used for the Sliding Puzzle Model specifically). As is mentioned in the Sliding Puzzle's foundational paper, titled "The Sliding Puzzle Model for Scaling-Up Cities: How Continuous Cycles of Development and Growth Can Be Enabled by Introducing State Enforced Quotas of Empty Urban Spaces" (Silva Jordão, 2018c, pp. 271, 272):

"Current growth models often depend on crisis and/or destruction in order to reach optimum levels. As such we have built our cities and economies in the image of the Phoenix, which must burn before it may rise again. The question is- why should cities have to depend on natural disasters, financial crises or a high amount of abandoned or derelict buildings for large-scale and impactful redevelopment and scaling-up of its core to take place?

Orthodox urban planning theory would propose that vacant land is the pinnacle of inefficient land use.

From the municipal perspective, taxes cannot be extracted from it. An empty plot is a plot that could and should be used for, for example, housing. The last thing one would desire in a high-value area is an empty space. Or is it?

This paper investigates the possibility that one way to scale-up might be a counter intuitive, somewhat paradoxical one- by making sure that urban areas always have an empty building space or even whole empty blocks within relative proximity, so as to allow for scaling-up. Just like a Sliding Puzzle, which can only be solved by making strategic use of the empty square, leaving no empty spaces in cities ultimately means lack of space for maneuvering. Scaling-up is made difficult without serious disruption to locals, and other solutions are preferred, such as building in empty spaces elsewhere, which enlarges cities' perimeters and promotes urban sprawl, whilst often failing to build the necessary amount of housing where it is most needed and sought-after. In other situations, when the need for redevelopment becomes inevitable, forced evictions might take place, often entailing mistreatment of local communities and disruptions to the social fabric.

In the absence of instruments like the Sliding Puzzle Model, developers will often either be forced to wait for disasters and accidents, or even resort to underhand tactics in order to redevelop. They might force inhabitants out, or simply abstain from maintaining buildings so that they become vacant and derelict, enabling the demolishing of the buildings and only then, scaling-up. Most notably, forced relocation has been one of the most persistent scourges of the urban poor throughout history. In particular, the urban poor's drive to live within relative proximity of city centres is a potent force entrenched in a dialectical relation with State-enforced evictions and relocation- this drive shapes both cities, political events and urban policy. Mike Davis's book *Planet of Slums* serves as an extended deposition of this somewhat politically underestimated and highly

academically overlooked motor of human history (2006, pp. 32, 36-37, 51, 61-69, 98-108).”

If, for example, a certain municipality wishes to properly prepare for expected future growth and (vertical) expansion, then the calculations that are essential to the Sliding Puzzle pertaining to initial percentage of empty space as well as the target building height can be reverse engineered so as to ascertain which amount of both should be applied. The percentage of empty space specifically can be used to decide the exact specifications of the quota of empty space that would be most suitable.

### **6.2.2 Policy Recommendations Relating to Informal Housing and Urban Redevelopment Projects in Informal Settings**

One has attempted to demonstrate that advances in independence and welfare are possible through a novel understanding of urban informal activities, as well as a new code of conduct by city authorities in regards to its citizens and in particular the economic activities they chose to engage in, but also tried to indicate manners in which a novel urban planning practice can be used to facilitate this incremental process of formalization and economic inclusion. One would be seeking by this a renewed urban pact, which would stipulate that the power to legislate and to regulate activities which are at the very centre of a citizen’s needs, whether infrastructural or social, must in turn be exchanged by the attempt and success in helping citizen’s to engage with national and city authorities so that the State of Exception be occupied by those who can provide evidence of necessity, rather than having a system of law, whether national or municipal, which operates itself in ‘constant exception’ and exemption from scrutiny. This entails greater accountability, specifically at municipal level, but it also might point at the necessity of the introduction of novel urban planning instruments focused on incrementality, adaptability and mutual compromise, which this Thesis has also attempted to do.

A national and urban governance whereupon judicial disputes and political processes are aimed at resolving issues and meeting tangible necessities; A state which is conscious (and made to be conscious through the active reminder or urban populations) that its role is to be more efficient in helping its constituents to survive, rather than a state solely concerned with its own influence and survival.

In order for this to be possible, the separation of the power to legislative and execute the law must be comprehensively and visibly clarified; within the context of the urban informal economy, this is mostly relevant in the municipal level, as can be seen in the Lima case study, where effective promotion of entrepreneurialism is often contradicted by vested interests in regulation through registration and taxation of small businesses; Regulation efforts often fail because of the structural limitations of the regulating agency, and the separation of the power to diagnose a problem and to resolve it, or to legislate and implement, respectively, are central in the attempt to construct impartial, and hence legitimate, structures of governance and public service.

Separation of legislative and executive power on all levels of governance must also be paired with improved access to education in legal affairs, namely the incorporation of legal studies in school curriculums, as well as education in legislation of trade and business practices made available to small entrepreneurs. Such schemes will better arm citizens which are motivated to undertake judicial disputes, but unable to do so through lack of funding or ability of acquire legal representation, as well as

increase enterprising skills and knowledge of the legal scope for actors in small enterprises or self-employment.

A population that is educated in the judicial processes of its nation is an essential component in itself for the functional procedure of the rule of law, as a citizenry that is well-versed in existing laws will be able to use them and understand their limitations, as well as it will be able to understand the source of its existence, which is public necessity. In the context of participation in the informal market, a citizen that understand basic principles of law will be more able to use necessity to advocate for and defend partaking in these activities, insofar as they are an attempt to escape poverty, for in the long-term, and through continuous engagement with the law, “necessity creates its own law” (Agamben, 2005, pp. 10).

The financing of municipal authorities is also clearly of clear importance; If municipal authorities rely solely on income such as local taxation or the enforcement of fines, then it will be prone to corruption or clientelism, and the informal sector will often be targeted as a source of official revenue. Mechanisms such as the Sliding Puzzle Model can perhaps be leveraged not only to allow municipal authorities to intervene in informal urban settings with a more incremental and diplomatic approach, it can also perhaps be leveraged to finance parallel projects such as those that might be necessary for the development of infrastructure that is usually not present in informal settings, however, further development on how this may function is still necessary.

Although attempts at regularization are often aimed at increasing tax collection, and thus, reduce the ability of the informal market to provide independence and welfare, this paper has also recognized the need for improved efforts in incrementally seeking to converge the formal and informal for the benefit of both, and in particular if it is the interest of an informal agent to regularize its economic activities, or in cases of land disputes regarding ownership of land, where legalization entails clear benefits. However informal economic agents will only deem this beneficial if formalization entails: “recognition of property rights, greater access to credit, access to basic urban services, productivity gains, as well as higher savings arising from a reduction in payment of license and other fees” (Habitat Debate, 2007, pp. 5). One can speculate that the Sliding Puzzle Model may be useful as a mechanism for the incremental transformation of informal housing into not only formal housing, but also in having the ability to help drive redevelopment projects necessary in such settings.

## **6.3 General Limits of the Study**

The Sliding-Puzzle opens up several research pathways- as such it would have been impossible to cover all angles within the range of peer-reviewed articles listed in the “2. Structure and Discussion” article. There are two studies that deserve their own, stand-alone peer-reviewed papers, which would be of the utmost importance for a more detailed understanding of the Sliding Puzzle capabilities, systemic reverberations and limitations. The first would be a study of the overall environmental impacts of the application of the Sliding Puzzle, whereas the second would be a more detailed study of its financial implications, namely its cost-benefit analysis in different contexts and cities.

Another obvious limitation is the fact that most of the Sliding Puzzle’s calculations and mechanisms, as it has been developed during this Thesis, take place within a virtual environment. The use of several virtual environment is an absolutely necessary component, not least so as to demonstrate, showcase and test different scenarios and configurations. However, a large amount of the Sliding Puzzle’s capabilities, systemic reverberations and limitations can only be studied and understood further once pilot projects commence, i.e., when it begins to be applied to real-life urban scenarios.

### **6.3.1 Specific Limits of the Study - Financial Calculations and Implications**

The Sliding Puzzle model and its application will have grave financial implications across all manner of dimensions. Due to the fact that this study focuses mainly on its urban planning applications, usefulness and context, as well as delving deeply into the spatial dynamics of empty space and the application of the Sliding Puzzle Model as a whole, further research needs to be undertaken on what the exact finances would look like for any given arrangement and specific model. The financial component of the case studies, in both cases, also demands further exploration and development. One possible pathway for research is the extent and manner in which additional floors constructed using the Sliding Puzzle Model may be owned and rented by municipalities so as to make it possible for the mechanism of redevelopment to become at least partially self-financing, though this consideration alone has so many complex reverberations that it would necessitate a singular paper dedicated to its development. Regardless, the many financial considerations and implications that are at the centre of key mechanisms that the Sliding Puzzle Model interacts with alongside other parallel considerations that can stem from its inherent mechanism, such as the one just mentioned, can be said to generally necessitate further development, and its relative absence can indeed be considered the principal limit of this study.

## **6.4 Further Research**

### **6.4.1 Property Swap Arrangements and the Overall Logistics of Relocating Functions and Inhabitants**

It can be said that besides the concept of using urban empty spaces as pivots for development, the Sliding Puzzle Model's most important element is the property swap. It is vital that a methodology is developed that will allow for owners to swap their property for another property. It stands to reason that in order for this to be made possible without forcible expropriation, coercion or any form of authoritarian application of State power, the institution that takes the initiative of applying the Sliding Puzzle Model must provide the necessary logistical support that makes moving possible and as little painstaking as possible, and perhaps most importantly, have the capacity to offer a better property to owners than the one they initially have. That is not to say neither that the Sliding Puzzle Model cannot work via expropriations, because it can, and neither is one saying that that expropriations may not be a legitimate and viable action plan generally speaking or inserted within the logic of the Sliding Puzzle Model, specially in scenarios such as those presented by the need to build key public infrastructure. However, insofar as it has been idealized during the process of its development, there lies at its heart a dream that urban redevelopment can be made whilst still allowing inhabitants to continue to live in the locations being redeveloped, and for that to happen in as a harmonious and beneficial manner as possible, successful property swap arrangements would have to be negotiated, which presents immense challenges in both theoretical and practical dimensions.

The majority of this study has focused on introducing a novel urban planning instrument and as such, much of the effort is spent on first and foremost, establishing the theoretical framework that explains not only how one has come to tread this research pathway, but also the problems, issues and analyses which lead to its necessity. After that, much time is spent in the calculations that simultaneously explore the Sliding Puzzle Model's concept, as well as to exploring the scenarios that it can be applied to, its many possible variations, as well as some case studies whereby it might be useful. Much remains, however, of course, to be further studied and analyzed. And there is perhaps none area of research that one personally feels remains unexplored by this Thesis itself is the exploration of how could best frame the concept of relocation of buildings and inhabitants on which the very core logic of the Sliding Puzzle Model relies. Indeed, if met with situations in which inhabitants do not accept, do not want, have little to no benefit or simply are not able for some reason or other to be successfully relocated from one, old building, referred to for the duration of this Thesis as the buildings "targeted for redevelopment", the Sliding Puzzle Model ceases to be applicable to the core function for which it was developed- to augment the adaptability, density and housing capacity of urban centres, and this with a specific focus on general housing shortages issues and shortages in particular. It stands to reason therefore that the application of the Sliding Puzzle Model to real urban scenarios would mean that a lot more research would be necessary on how the entity leading the redevelopment drive can make it so that the relocation of function and housing is possible.

One of the first considerations regarding relocation of function and inhabitants that one may entertain is actually twofold, or two-sided if one prefers- it is that on one side, this Thesis did at the beginning, as was explained in length at the beginning of this study, begin by concerning itself with enquiries relating to how the State could

somehow develop mechanisms that would allow it to affect the housing market directly, specially in cases where the private sector is dominant, but on the other side, the Sliding Puzzle Model as it is ultimately developed also leads one to the natural conclusion that State authorities are in a particularly good position to facilitate this same relocation of function and inhabitants. One of the reasons for this is because any private entity that applies the logic of the Sliding Puzzle Model will have to interact with a complex and often intransigent planning system, as well as to then facilitate the relocation which might be costly in terms of logistics and general administrative effort. State apparatuses on the other side, and urban planning authorities specifically however already are themselves the mechanisms with which one would have to interact to facilitate such a process. Furthermore, if one gets down to specifics, and imagines a certain family that lives somewhere, and accepts relocation within relative proximity, it would stand to reason that, for example, a Municipal authority might have things such as personnel and transportation that may help the said family to move their belongings, for example. These seemingly small, and yet fundamental details of what relocation of function and inhabitants actually represents, at least at these initial stages in our considerations, already paint some degree of a picture as to what the Sliding Puzzle Model might look like when applied by an organized, willing and responsible Municipal or State Authority.

It remains, regardless of any of these initial considerations, an important area for further research, that would lead one to ask questions such as the following: Can Municipal Authorities equip themselves with the necessary tools to relocate functions and inhabitants successfully? Are the logistic challenges simply too costly when considering how long it may take to not only negotiate relocation whilst also juggling the development of the plans for redevelopment as well as their execution, whilst also taking into account that these administrative and building processes can often be met with delays and even collapse and abandonment? Are Municipal Authorities sufficiently developed and armed with mechanisms for accountability, democratic oversight and proficient auditing to ensure that if armed with such a potentially powerful tool for redevelopment as is the Sliding Puzzle Model, it does not potentially fuel cases of profiteering, abuse and abusive use?

These considerations lead us to other sub-sections of necessary research, such as how the Sliding Puzzle Model's inherent logic would interact when applied by urban planning authorities that operate under completely different systems of government depending on their country, city or era. These are issues that for obvious reasons this study is not capable as of yet of developing beyond an initial and perhaps even cautionary invocation.

#### **6.4.2 Reimagining Proximity in the City with the Sliding Puzzle Model**

How do we end up living where we live? Furthermore, what determines what property we get to rent or buy?

For the most part, movements such as moving from one apartment to the other are dictated by the laws of the market- cost of rent and location are dependent on market availability.

But systems like the Sliding Puzzle Model allow for other modes of thinking. Imagine arranging a property swap move, as made possible by the Sliding Puzzle Model, but in such a way that you end up living in the same building or block as some chosen friends. The Sliding Puzzle Model allows for people who have some sort of

affinity, professional, social or familial, to live within greater proximity due to the flexibility and opportunities that it opens up in the realm of urban redevelopment.

#### **6.4.3 Potential Overuse of the Sliding Puzzle for Profit**

Due to the various ways in which the Sliding Puzzle Model could be misused, misappropriated and even usurped, it is of particular importance to this study not only to generically indicate possible paths for future research, a considerable part of this future research should be specifically directed at investigating, in great detail, the particulars of possible misuses and collateral damage of the application of the Sliding Puzzle Model.

Since the Sliding Puzzle Model can be used to unlock perpetual cycles of redevelopment, it can also be abused in several ways, one of them being using it for profit, namely related to the building industry which can through it open new markets, whether driven by actual need, or not. The extent to which this can happen requires further research, and should be a key consideration before proceeding with any pilot programme or attempts at putting the Sliding Puzzle Model into practice in a real environment. The primary concern is that since the Sliding Puzzle Model can, theoretically, be used indefinitely, it can also be used to spur construction projects that are not needed, and which are undertaken solely because of vested financial interests within its key stakeholders. The extent to which the Sliding Puzzle Model can be used to redevelop whole urban areas has been represented in the Virtual Environment Exercises chapter, with the term “takeover” being used precisely to describe to which new buildings build using the Sliding Puzzle Model can take over a whole urban area. This in turn leads us to our next consideration, regarding potential ecological risks.

#### **6.4.4 Potential Environmental Issues Arising from Overuse of the Sliding Puzzle Model**

The problem discussed above, namely, potential overuse of the Sliding Puzzle Model in profit-driven ways, can also in turn can generate huge environmental losses, instead of gains, as replacing buildings that do not really need replacing would probably result in wiping out and even surpassing any potential gains made by, for example, reducing urban sprawl. The main concern regarding these particular dynamics is related to the potential the for Sliding Puzzle Model to unleash building booms which in turn would place a strain on the environment on account of the vast quantity of building materials that new buildings require. In other words, because the Sliding Puzzle Model is a system whereby new buildings are built, as opposed to old ones being requalified, improved on or expanded, it can also therefore lead to immense costs, whether these costs be in the financial sphere, or overuse of building materials, and the ecological problems this in turn generates.

#### **6.4.5 Additional Considerations About Necessary Further Research**

Extensive research into the cost-benefit analysis of the Sliding Puzzle Model as a whole still have to be undertaken. One could do so by comparing how the gains in occupancy rates can be compared to the cost of building new higher density housing as well as potential costs for the expropriation and demolition of existing buildings. One can consider the possibility that if property rights are transferred to a more modern, more valuable building or block, that this can be done without any direct financial compensation having to be paid for those relocated, though this depends on specific legislation this paper does not go into. Calculations regarding the net environmental

gains also need to be undertaken, with the main issue being how the added cost of increased construction and demolition projects compares to the projected gains in reduced urban sprawl, namely energy use reduction, fossil fuel use reduction and reduced CO<sup>2</sup> emissions.

Another vital future research area is ascertaining how such redevelopment initiatives will interact with the supply elasticity of housing, in other words, whether increasing the housing stock in urban centres would reduce housing prices and if it would actually increase occupancy levels, or if the extra amount of housing generated by this model would be neutralized by second-home buying, financial speculative buying or other factors that would limit its capacity to increase the overall population of urban centres. Specific research on how to ensure that the new housing stock will be used solely for the purpose of increased occupancy can be based on some elements pertaining to existing social housing policies. One can hypothesize that restrictions would need to be introduced regarding the use of new housing, while how this could be achieved whilst still ensuring that new housing stock also interacts positively with the existing housing stock, namely by reducing overall housing prices, will be important aspects of further research. A possible solution is if additional floors are exclusively owned and rented by the State.

Perhaps most importantly, further research on what the full cost of any given application of the Sliding Puzzle Model would be in each individual case, scenario and cycle. As it has been developed for this paper, it is implicit that the construction costs would be supported by the State, whether local or national. No other alternative has been considered as it has been assumed that only a State entity can apply the model given the necessity to expropriate or negotiate transference of property rights between blocks and buildings.

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