At What Price?

Searching for Environmentally Sustainable and Socially Just Urban Greening Strategies in Malmö, Sweden

Victoria Jepson

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Abstract:

With sustainability at the forefront of many cities' urban development plans, it is possible that sustainable polices are targeted to attract a certain group of inhabitants. Malmö, Sweden, has implemented changes in order to gain international recognition as a green city but has also been experiencing growing residential segregation. The presence of urban greening projects is a keystone to human health and the soundness of the built environment but improving access to such projects risks environmental gentrification. I seek to understand why, despite evidence of environmental gentrification, do planners continue to develop urban areas in a market-orientated sustainable fashion. Through the lens of Critical Urban Theory, this is demonstrated by an analysis of municipal planning documents and municipal housing trends, as well as a survey of academic literature on both environmental gentrification and the city of Malmö. The results show that planners are responding to bigger structural forces such as competition, urban attractiveness, and profit-making. This has broader implications for questioning whether justice and sustainability should go hand-in-hand and how urban sustainable policies can improve the quality of life for all urban dwellers. Further research focused specifically on urban dwellers would identify whether displaced inhabitants leave their dwelling based on the same structural forces that influence the urban planners. In conclusion, Malmö makes for an interesting case study given its history of Social Democratic leadership and recent changes to housing policies that used to be the cornerstone of the typical "Swedish Model". Malmö's sustainable urban planning demonstrates how governance can be influenced by broader structural forces and that without addressing the profit-making structures behind urban planning, the continuation of market-orientated sustainability will further exacerbate inequalities and alienate some urban inhabitants from the benefits of urban greening.

Keywords: Urban Greening, Social Justice, Urban Planning, Critical Urban Theory, Sustainability Science

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List of Swedish Institutions Mentioned

Boverket- The Swedish National Board of Housing, Building and Planning

Hyregästföreningen - The Swedish Union of Tenants

Kommission för ett socialt hållbart - Commission for a Socially Sustainable Malmö

MKB- Public Housing Company in Malmö

Malmö stad - City of Malmö

SCB- Statistiska centralbyrån- Statistics Sweden

1 INTRODUCTION

Urban planners are tasked with laying out the different land uses in the city and therefore, face a variety of challenges while providing services and space for inhabitants. One of these challenges include balancing environmental, economic, and social issues (Wolch, Byrne, & Newell, 2014) in which case planning for accessible urban greening within city borders can help remedy (Anguelovski, 2013, p.212; Sister, Wolch & Wilson, 2010). The recorded benefits of urban greening in urban development address issues concerning biodiversity, social cohesion or sense of belonging to a community, the urban island heat effect, as well as physical and mental health. However, research has shown that, not only, some groups of residents have limited access to green space but that, as a result, the implementation of such amenities also risks displacing residents (Anguelovski, 2016; Sandberg, 2014; Checker, 2011; Gould & Lewis, 2012). This occurrence of environmental gentrification explains how environmental changes to the built environment, such as increasing the presence of urban greenery, increases property values.

There is research on both the unintended and intended consequence of urban greening in urban development. Given that urban greening can help attract higher investment, the use of environmental sustainability can be used as an intended tool to do so. Consequently, the benefits of urban greenery are then experienced by higher income residents and locked away from low-income residents (Anguelovski, 2013; Checker, 2011; Garcia-Lamarca, Anguelovski, Connolly, Pearsall, & Cole, 2018; Rigolon & Németh, 2018; J. R. Wolch et al., 2014). The increasing use of environmental sustainability in entrepreneurial city management has led to questions about who is benefiting and whether social justice should be integrated into such development.

This thesis will review Malmö's development from an industrial city to a knowledge city and how environmental sustainability has led the city's green image. It will also address the gaps where environmental sustainability and housing produces inequality, in addition to the impact the Swedish housing shortage further polarizes the city of Malmö. Lastly, the research will address larger questions of justice and sustainability and focuses on how to implement environmentally sustainable and socially just policies. This is important because city planners hold power in deciding land use in cities and who gets access to certain amenities. With as many benefits from urban greening for the built environment and humans, there is a need to confirm that sustainable polices do not make low-income residents worse off.

1.1 Relevance to Sustainability Science

The field of Sustainability Science is associated with understanding the linkages between nature and society (Kates et al., 2001). Throughout Western Europe, the search for urban sustainability is also coupled with a growing population and rapid urbanization (Brenner & Schmid, 2014; Greenberg, 2015) and the actors involved in urban governance are those that shape the balances between these factors. There are multiple agents that analyze the trade-offs between sustainability and social justice under structural forces that either ease or impede the implementation of environmental sustainability goals. In particular, Malmö has been tasked with providing economic prosperity and social cohesion as well as addressing environmental sustainability (2018a). This research adds to knowledge on bridging environmental sustainability and social justice in the urban context. It addresses the structures pursuing sustainable policies and the need of actors from different sectors to achieve a holistic implementation of environmental sustainability that is just.

As measures of sustainability have found their way to the forefront of urban policies, this research adds to previous and ongoing work on transitioning to a sustainable future in the just way. The field of Sustainability Science aims to bridge the gap between knowledge and action, to break down the walls separating different disciplines, all towards conducting transdisciplinary research to pursue a navigable future (Kasperson & Berberian, 2011; O'Brien, 2012). Its mainstreaming has led to awareness on both the political and scientific front. However, the rise of sustainability on both the global and local level has led to its exercise being controlled by powerful actors (Clark & Hermele, 2013, p. 130). Nowadays, sustainability has permeated many aspects of life and as once a specialized term, sustainability has now found its way to policy, business, marketing, and urban planning (Greenberg, 2015). Due to this, there are concerns that the usage of sustainability today pushes aside issues surrounding social justice (Di Chiro, 1996)

This research does not seek to downplay the influence mainstreaming sustainability has had on politics and decision-making as it is crucial to implement changes in light of climate change and securing a transformative future. This research is, as described by Greenberg (2005), "to urge, moving forward, that we carefully consider the consequences of the instrumentalization and marketization of sustainability discourse" (p. 125). The aim proposed in this research advances the idea that social justice should be considered while furthering environmental sustainability.

1.2 Working Hypothesis

Urban greening has been viewed as a win-win for urban planning, given its benefits to both the built environment and human health; however research has proven that without the inclusion of equity in urban planning process, the result of improving access to such public space can lead to gentrification (Anguelovski et al., 2018; Garcia-Lamarca et al., 2018). Therefore, I seek to understand why cities, such as Malmö, Sweden, despite increased recognition of this problem, continue to attract urban development that makes low-income populations worse off?

Under the umbrella of Critical Urban Theory, this research concludes that the tradeoff between environmental sustainability and social justice occurs due to neoliberal economic forces. Furthermore, because the implementation of environmental sustainability is not coupled with social justice measures in Malmö, this risks a further polarized city and instances where urban greening results in gentrification. The research is under the hypothesis that sustainability measures create inequality due to neoliberal forces and in order to address both, these structures have to be identified and changed.

1.3 Research Design

This section explains the research design where the research questions will be presented along with the relevant data needed to collect. The design behind the analysis of the results will also be discussed.

1.3.1 Research Questions

This research argues that a neoliberal structure has led to the influence of environmental sustainability measures on affordable housing, and in turn, risks further injustice in the city. The changes in the Swedish rental housing sector and the rise of entrepreneurial agendas jeopardizes alienating low-income residents from the benefits of urban greening.

The aim of the study will be explored by answering the following research questions (RQ):

RQ1: Why do municipalities plan for green space in urban areas?
RQ2: What do municipalities share about the coupling of environmental sustainability and social justice in urban development?
RQ3: Are municipalities aware of the unintended consequences of planning green space?
RQ4: How are municipalities inhibited in reversing the effect of urban greening on property values?
RQ5: Who are the actors needed to achieve a sustainable and just city?

The presentation of these research questions above does not indicate the organization of this paper; however, they are ordered in the logic of how the research was conducted. The organization of the thesis will be explained in a separate section below.

1.3.2 Relevant Data & its Collection

This research is meant to analyze what the City of Malmö assumes and shares about urban development and the coupling of environmental sustainability and social justice. It is based on qualitative methods; the research design uncovers what municipal documents report and scholarly research have concluded on sustainable urban development and environmental gentrification. The design of this research addresses governmental decision-making and the structural forces influencing the means to an attractive city. The relevant data was collected through archival research and a survey of scholarly literature.

1.3.3 Analysis of Findings

The findings are analyzed through the lens of Critical Urban Theory and seeks to support the research on environmental gentrification. The analysis of the findings uncovers the outcomes that play out in the urban form stemming from municipal planning documents.

1.4 Thesis Structure

The conceptualization of sustainability and justice will first be presented to establish how these terms are discussed in this research. After, the background on urban greening and equality of access will highlight the importance of greening strategies in the urban fabric and the benefits their presence has on urban inhabitants. The relationship between urban green space and changes in urban development policies is addressed to provide more context about urban greening in Malmö. This is followed by the theoretical frameworks chapter on Critical Urban Theory, The Right to the City, and environmental gentrification. This section aims to advocate for Critical Urban Theory as the best theory to guide the following research and in helping decide the methods for collecting data. The fourth chapter on methods, methodology, and models justifies using a case study and addresses the line of argumentation for this thesis. Then, the findings and analysis focus on the development of Malmö's built environment, the structures that influence the urban space, and the city's research as recognition of the problem. Following this, the discussion will explain the larger transitions that can be identified on a regional, national, and global level. It will demonstrate that Malmö's transition to an entrepreneurial city has had an unjust outcome. In addition to this, solutions to a just transition are presented. This paper concludes with final remarks and suggestions for further research.

1.5 Conceptualizing Sustainability and Justice

This research seeks to forward the discussion surrounding sustainability for whom in order to provide a better understanding of the sustainability policies set forth in planning cities' public spaces. There are different possibilities in understanding environmental sustainability and social justice. Some

researchers express that sustainability is inherently not sustainable if it does not include issues of social justice. For example, the three pillars of sustainability are often identified as a holistic version of sustainability. This is the idea that, to achieve sustainability, economic, social, and environmental sustainability must be addressed (Checker, 2011). Agyeman (2008) calls for a 'just sustainability' in which environmental sustainability is fused with movements for race and class issues. The author argues that environmental quality and human equality are inseparable, and moreover that sustainability should not only be focused on the environment but also on justice (Agyeman, 2008, p. 75). However, I argue that since environmental sustainability can be furthered through injustice, then environmental sustainability planning policies should include aspects of social justice in order to achieve a more environmentally sustainable and just city.

According to Greenberg (2015), the rate and scale at which urbanization is occurring is the reason why urban sustainability has been called upon for some time (p. 110). Instead of sustainable policy being orientated towards an "ethic or value [that resembles a form of rational social action]" it is now part of the means towards economic advantage (Weber, 1978 as cited by Greenberg, 2015, p. 125). Ultimately, this creates winners and losers in the places where people live, work, and play. The author writes that "if we allow market-orientated sustainability to become hegemonic, then the parts of the urban environment that are deemed not profitable will lead to its unsustainability" (Greenberg, 2015, p. 125).

Planning a city to be sustainable should require equality measures in order to not exacerbate the inequality already found today. The main message from Wilkinson and Pickett's (2009a; 2009b) book, *The Spirit Level*, is that equality is better for everyone. Not only is it good for the individual and the communities, but society would have the opportunity to tackle large threats such as climate change once issues of equality has been addressed (2009, p. 217a). As they write, "…greater equality is a gateway to a society capable of improving the quality of life for all of us…" (Wilkinson & Pickett, 2009b, p. 235). They argue that greater equality would help stabilize the economic system and contribute to environmental and social sustainability (2009b, p. 270). The planning of urban space can be influenced by either hegemonic market-oriented sustainability or by bridging environmental sustainability and social justice to ensure more equality. As a result, the urban form then encompasses these influences. This research seeks to establish the structures that can set forth the latter and provide insights towards an environmentally sustainable and socially just city.

2 BACKGROUND: URBAN GREENING AND EQUALITY OF ACCESS

This background section highlights several aspects concerning urban greening and equality of access particular to this case. Generally, there is a background on the benefits of greening in cities and how pushing for increasing access has become a core issue for the livelihood and wellbeing of urban inhabitants. Specifically, there is information on how post-industrial landscapes and the shifting priorities of Swedish public housing impact equal access to such urban greenery.

2.1 Urban Greening and its Benefits

Urban greenery itself is part of the larger system of green infrastructure that connects different land uses, such as 'blue infrastructure' like bodies of water, and provides an area with the combined benefits of such environmental amenities (Coutts & Hahn, 2015, p. 9768). This paper focuses specifically on urban greening, or urban green space, which consists of any vegetated land such as parks, sporting fields, greenways, community gardens, or vegetation on streets (Wolch et al., 2014, p. 234).

The presence of this urban greenery has multiple benefits to urban dwellers. Their benefits are ecological, environmental, and social; meaning that they are useful to the built environment, the inhabitants, and the natural environment (Anguelovski et al., 2018; Chiesura, 2004). The built environment benefits from the presence of urban greenery as it has an impact on a city's ecological integrity (Sister, Wolch, & Wilson, 2010). Urban green space provides quality improvement and fosters biodiversity in areas where the natural environment may have been pushed away (Los Angeles, 2016; Mountains, 2012). The presence of trees in cities helps with storm water management, filtration, and helps reduce flooding and storing ground water (Mountains, 2012; Wolch et al., 2014, p. 234)

Urban green space helps offset the effects of a warming climate by providing shade and reducing the urban island heat effect (Wolch et al., 2014, p. 234). In terms of air quality, green space in urban areas removes pollutants (Los Angeles, 2016; Sister et al., 2010) which reduces the risk for heat-related illnesses and air pollution illnesses such as asthma (Wolch et al., 2014, p. 235). The accessibility and presence of such green space can also help social aspects of health as parks are good meeting areas, they help reduce mental stress, and provide a place to relax (Sister et al., 2010; Wolch et al., 2014; Wolch, Wilson, & Fehrenbach, 2005). Lastly, urban greenery has a large impact on physical activity of young children. Studies have shown direct correlations between health and green space access due to other health implications of low physical activity (Coutts & Hahn, 2015; Kabisch, Korn, Stadler, & Bonn,

2017; Wolch et al., 2014). Due to these reasons, it is common to see the growing recognition of needing to include greenery in urban planning and development policies.

2.2 Defining and Increasing Access

Increasingly in environmental justice literature and urban nature-based solutions to climate change, green space is viewed as a right of urban living due to its benefits (Walker, 2012 as cited in Foster & Sandberg, 2014). The right to access has been developed a lot due to environmental justice literature. At first, it was environmental justice movements and literature that focused on the fact that marginalized communities lived in polluted and environmentally unkept areas (Gould & Lewis, 2012). For example, these were residential areas in closer proximity to pollution, chemicals, and landfills. Now, the idea of bringing attention to such areas can be widened to include the lack of access to unpolluted areas, to green space, water, and nature (Gould & Lewis, 2012).

Gould & Lewis (2012) write that those with more economic, political, and social power deal less with problems of pollution, chemicals, and landfills. Therefore, movements surrounding issues of "urban health, right to the city, accessible transit, affordable quality housing, economic opportunities, [and] wealth creation related to the green economy" (Foster & Sandberg, 2014, p. 1043) are intertwined with increasing the access of marginalized groups to unpolluted and environmentally sustainable areas. While this research is not utilizing the theory of environmental justice, it is associated with the investigation of the distribution of green in the city and whether it is disproportionate to people based on race, class, or ethnicity (Wolch et al., 2014).

A city's history of marginalization usually helps explain the discrepancies with access or presence of greening strategies (Rigolon & Németh, 2018). Plans of greening the urban area can be found in development policies, planning work, and it can also stand in substitution as what a city believes to be the environmental attitude (Holgersen & Malm, 2015, p. 5). Therefore, those in charge of distributing urban amenities are in charge of distributing the benefits of urban greening. The benefits of green space are both for quality of life and environmental services that aid the urban ecological system. However, recent changes in the urban contexts and governance has changed, negatively and positively, the access to green space. Paying attention to the distribution and access of urban greening in cities is important as the planning of urban greening by those with such power impacts the lives and health of those who have less economic, political, and social power.

2.3 Urban Greenery in this Research

For this research, urban greenery consists of "all ground surfaces in the urban environment that are not built or otherwise hardened" and this can include parks, gardens, grass areas, and urban vegetation (Boverket, 2019a, p.3). Swedish planning regulations, along with the city of Malmö, determine that widely accessible green areas are at least a continuous 0.5 hectares (2019a, p. 5). In addition to this, the term urban greenery also includes green surfaces between multi-dwelling buildings, industrial buildings, and green pathways (2019a, p. 5). While the definition of green space and urban greenery differs, the above stipulations are similar to definitions used in environmental gentrification literature.

2.4 The Impact of Post-Industry on the Environment

When it comes to environmental sustainability and urban greenery, post-industrial areas tend to attract more redevelopment, and these are used to attract high-income residents (Foster & Sandberg, 2014). This urban transition has two different components, the post-industrial landscape and the post-industrial economy. The former involves changes to the types of services provided in the economy and the latter is the switch from industrial landscapes with factories and industrial areas that are no longer in use.

Post-industrial landscapes provide an opportunity to develop an area away from industry in a society that no longer revolves around it. However, the work put into such redevelopment is prime for environmental gentrification. This is because this the landscape where individuals once lived and worked are now categorized as areas that are renewed in a natural sense from a time where inhabitants lived in contaminated areas (Foster & Sandberg, 2014, p. 1068). Often in the post-industrial areas are the locations that are most sought out for urban development, waterfronts, rivers, often close to the downtown areas (2014, p. 1068). The broader aspect of profit-making through the redevelopment of an area makes the post-industrial areas profitable (Sandberg, 2014). This is occurring throughout Western Europe as well as cities that move from industrial cities to service oriented and knowledge cities. This development is also under the banner of urban branding.

This can be viewed through Malmö's planning development where areas for development have been these post-industrial landscapes. Holgersen's work demonstrates that the transition to post industrialism has influenced sustainable policies. This can be viewed in Malmö's political aspect of urban development and its policy aspect. Malmö's industrial past has impacted the accessibility of sustainable development plans and the access to urban greenery. Previously an industrial city, this changed when

the shipyard closed down in 1986 bringing the city's functions to a completely stop. The closing of the shipyard in Malmö consequently paved the path for new development plans to attract individuals and new investments. Baeten (2012) identifies the type of development plans adopted by the city as neoliberal planning and that the politics focused primarily on changing the image of the city (Sandberg, 2014). Places such as Västra Hamnen and Limhamn Quarry (Appendix I) have been held up as examples of environmental sustainability in Malmö (R. Westin, personal communication, April 16, 2019; Holgersen & Malm, 2015; Sandberg, 2014). These areas follow along a lot of the priorities of the Comprehensive Plan such as energy efficient buildings and urban biodiversity, however; they are also areas with the highest rents and greatest access to urban greenery.

2.4.1 The Role of Sweden's Public Housing

While post-industry landscapes often create hotspots for environmental sustainability that can open the door for higher investment and wealthier residents, Sweden's universal public housing has, since the 1930s, protected residents from loss or lack of housing. The role of public housing in Sweden was established with the task of providing housing for all residents which is different from social housing initiatives in other countries (Grander, 2015). The state involvement through these municipal housing companies allowed for strong state subsidies in the construction of housing. For example, Malmö's municipal housing company, MKB, was established in 1946 and similarly to others around the country brings state involvement in housing shortages. MKB holds 15 percent of the total housing stock in Malmö and holds about 34 percent of the leasing house stock (Malmö, 2014b).

However, recently, there have been changes to these establishments that provide public housing. Starting in the 1990s, there was the stoppage of housing subsidies, increases in rents, and the start of taxation on rental properties (Baeten & Listerborn, 2015). Furthermore, there was a national legislation change in the rental law that has now opened up housing to the market forces (Grander, 2017). This is something that was not the case beforehand, meaning that outside forces, such market-orientated sustainability measures can impact the rent prices.

Based on Malmö's action plan for housing supply, the construction of "ready-made homes" and the conversion of rental properties to condominiums outpaced the completed rental properties between the years 2003 and 2012 (Malmö, 2014b). In the mid-2000s there was rise in demand for condominiums and today there is the 40 percent hold on newly built condominiums (2014b). Now, almost 69,000 homes constitute rental apartments, this is half of Malmö's housing stock (2014b, p.19). Malmö municipality addresses and is aware of the housing crisis as well as the importance of rental

properties for young urban dwellers and those without a fixed income (Malmö, 2014b). The change in the mandates of public housing company coupled with Sweden's housing shortage means that there is a search for providing housing and accumulating wealth.

Housing supply has targeted higher income groups since the 2000s following development plans to make Malmö an entrepreneurial city (Malmö, 2012). Targeted construction occurred in areas such as Västra Hamnen, Hyllie and Limhamn which are all neighborhoods of Malmö with urban greening projects and where higher rent and more house ownership. Between the years, 2003 and 2012, only 4000 rental properties were constructed (Malmö, 2014b). These shifting mandates of Swedish public housing, as well as a post-industrial economy, impacts the equal access to environmentally sustainable measures such as urban greening. There are structural forces influencing the equality of access which will be demonstrated below.

3 THEORETICAL FRAMEWORKS

This section introduces and explains Critical Urban Theory as the main theoretical lens used in this research. Its critique of dominant structures and task to find alternatives provide a backdrop in the importance of questioning who and what is controlling the planification of the urban fabric. It furthermore addresses The Right to the City as an embedded concept within the theory that questions how and for whom a city is planned. Lastly, it discusses the occurrence of gentrification, a key term in this research that aligns with the impact of a profit-making dominant structures on urban inhabitants.

3.1 Critical Urban Theory and its Analysis of the Urban Built Environment

Critical Urban Theory is used in this research as the base for analysis since its conception focuses on the transformation of urban structures. Although a part of it, the theory is not solely focused on the built environment and the buildings found within the urban fabric, it instead directs the attention to the structures organizing and reorganizing the planning and purpose of the urban entity (Brenner, Marcuse, & Mayer, 2012). Critical Urban Theory focuses on transforming and reconstructing the urban space in a way that focuses less on the economic needs of a city and more on the wellbeing of urban dwellers (Brenner et al., 2012, p. 2). However, while alternatives are possible they are also perpetually oppressed by the dominant structure (Brenner, 2009). The 'critical' aspect of this specific theory questions the accepted form of the urban and of the urban space (See Appendix II). The work found in Critical Urban Theory has been developed by others since its inception by writers such as David Harvey, Manuel

Castells, and Peter Marcuse, in addition to many who will be referenced in this work (Brenner, 2009, p. 198). The visualization of Critical Urban Theory is found in Figure 1 below. Brenner (2009) writes that Critical Urban Theory works to reject "market driven and market-oriented forms of urban knowledge" (p. 198). For example, the rise of market-oriented sustainability that benefits only high-income urban inhabitants.

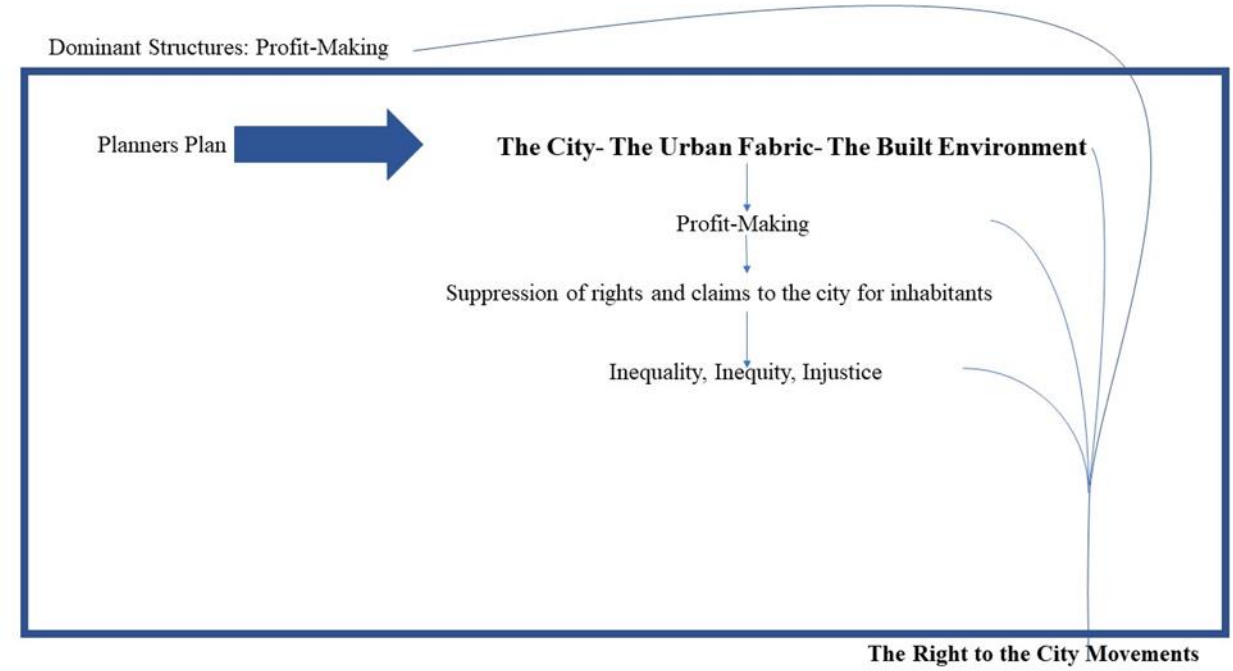

Figure 1: Visualization of Critical Urban Theory Critical Urban Theory highlights the external dominant structures that influence the city, or the built environment. Here, the dominant structure of 'profit-making is reproduced through spatial planning that sets up the city in a way that suppresses the rights and claims of urban dwellers. Right to The City Movements lie outside of the dominant structure as they work towards transforming the way the city and life in the city is viewed and experienced. (Author's Illustration)

For critical urban theorists, the urban can be changed because there are dominant structures overhead, such as profit-making, that formulate it in a specific way that suppresses the rights on inhabitants. The construction and reconstruction of the urban built environment is a result of a history of socially constructed power (Brenner, 2009, p. 198). This means that it took many years for profit-making to become the dominant structure and power exerted from such decision making can be changed through the same social forces. Therefore, the alternatives and the transformation of the urban space is based on changing the powers that construct the city. The rejection of mainstream urban theory and ideas that "market-oriented forms of urban knowledge" form and build the city allow for alternatives to be imagined and realized (2009). For example, this could be the rejection of market-oriented sustainability or the realization of an environmentally sustainable and socially just city.

In order to seek out transformative actions, the dominant structures must be detected (Brenner et al., 2012, p. 2). As Figure 1 portrays, Critical urban theorists develop the idea that economic priorities have historically aided and influenced the city's formation (Roy, 2015). As the dominant structure plays out, this impacts the planning of the built environment and means that any changes to address the suppression of rights and claims must come from outside of the structure or else these proposals will be always formulated in a way to aid economic priorities and not justice. On top of this, economic priorities have then also, due to their influence, impacted social relations and emancipatory alternatives (2015). These economic priorities set up the city for maximal profit-making (Brenner et al., 2012, p. 4). The initial construction and further reconstructions of cities have specific historical and geographical components that explain how cities are placed, or planned (Brenner et al., 2012, p. 1). The main purpose of Critical Urban Theory is to define and answer questions of rights in the city such as equal access.

3.1.2 The Right to the City (Justice and Cities)

Questioning who has the right to the city helps identify the ideologies behind urban planning and advocates for interests of urban inhabitants in such processes (Marcuse, 2009). This component embedded within the theory is vital to answering "who has the rights", "what rights", and "right(s) to what city" (Brenner et al., 2012, p. 24). Marcuse (2012) writes that public space and the environment within the city can be planned out and this puts into perspective the ideas influencing planners as well as the group of people in mind while planning the city. For example, the author explains that the way to address the accessibility of a city for the inhabitants comes from an understand on how to "full[y] develop… people's potential and capabilities" (Brenner et al., 2012, p. 36).

When the Right to The City was first coined by Henri Lefebvre in 1968, the author's explanation and conceptualization of the 'right(s)' was limited (2012). Since then, scholars, organizations, and activists have developed Lefebvre's original term to fight for those who are excluded from the urban center (Purcell, 2014). Subsequently as the space and the quality of the space within the city is planned, the accessibility, quality, location, and ultimately, the rights, are in the hands of those who plan the city (2012, p. 35). Evaluating and questioning these processes and structures can expose the expansive profit-making influence on the urban fabric, as well as demonstrate "the positives and negatives when top-down planning takes over commodification" (Brenner et al., 2012, p. 2).

David Harvey in Rebel Cities (2013), revives Lefebvre's work to dedicate thought to the intricacies of The Right to the City. Harvey (2013) writes that to claim The Right to the City is to "claim some kind of shaping power over the process of urbanization" (p. 5) meaning that a collective struggle is

had over the processes of urbanization. Furthermore, the dominant structures that push economic prosperity over urban inhabitants' wellbeing stop the city from imagining any alternative. Lefebvre, reiterated by Harvey (2013), argued that the transformation of the urban comes from a completely different daily life and structure or the urban form (p. xvi). Those who do not have the right now, will have The Right to the City "when those who build and sustain urban life have a claim" (2013, p. xvi) by demanding "greater democratic control over the production instruments" (2013, p. 22). The conclusion of The Right to The City deduces that the built environment will not support the health and wellbeing of its inhabitants if economic priorities are the dominant structure.

3.2 Environmental Gentrification

With economic priorities as the main, and dominant, structure, the city will make changes to the built environment aligned with such goals. Often times, when these changes affect the wellbeing of inhabitants, the displacement of urban dwellers call upon a need to have better control of urban space production. Gentrification as a term has been around since the 1960s first coined by Ruth Glass (Brenner et al., 2012, p. 171), however, given the research surrounding the term, the analysis of the gentrification has grown larger.

The elaborate gentrification research can complicate the term, at the base gentrification,

> "is a process involving a change in the population of land-users such that the new users are of a higher socio-economic status than the previous users, together with an associated change in the built environment through a reinvestment in fixed capital" (Clark, 2005, p. 26).

Figure 2 on the following page visualizes gentrification. This means that there is a change in the built environment and this change displaces original residents with residents who can afford to live in the area with the changes applied to the area.

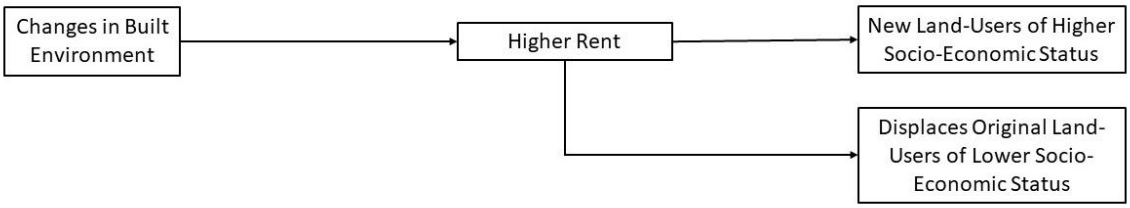

Figure 2: Visualization of Gentrification. The changes in the built environment are done by city planners. The motivations of or influences on these planners can be identified through theory or investigation. Higher rent occurs in the area where changes to the built environment were made. This has a simultaneous effect of attracting new land-users of higher socio-economic status and displacing those of lower socio-economic status. The changes to the built environment vary by case. (Author's Illustration based on Clark, 2005, p. 26)

Critical literature on gentrification explains how changes in the built environment are disguised under plans for revitalization and redevelopment. Often, there are differences between intended and unintended gentrification as plans for 'renewal' or 'redevelopment' can be argued as strategies 'supporting neoliberal narrative[s] of competitive progress (Peck & Tickell, 2002)… that opens up for new stealthy forms of gentrification (Wyly & Hammel, 2001)' (as cited in Brenner et al., 2012, p.172).

3.2.1 Green Gentrification

This paper analyzes a specific form of gentrification, environmental gentrification (Pearsall, 2010; Checker, 2011; Curran & Hamilton, 2012; Sandberg, 2014). However, similar processes are also known under a couple pseudonyms such "green gentrification" or "ecological gentrification" (Dooling, 2009). Gould and Lewis (2012) identifies green gentrification as the "urban gentrification processes that are facilitated in large part by the creation or restoration of an environmental amenity" (p. 121). This means that the changes in the built environment (as visualized in Figure 2) are on an environmental basis and is usually understood to strengthen urban environmental sustainability.

While the abovementioned terms all describe the same occurrence, the term 'environmental gentrification' is used in this research more than 'green gentrification' to explicitly underline the environmental amenity that is urban greening in this case and its role in the urban development process. It is the process in which urban planning, city greening is 'incorporated into public-private redevelopment strategies' that ultimately intensity the gentrification process (Anguelovski et al., 2018, p. 461). This is because greening can be viewed as a solution to "unemployment, sagging competitiveness, slow or non-existent growth… and environmental degradation" and these greening strategies are then carried out by politicians, policy makers, and city planners (Holgersen & Malm, 2015, p. 5).

4 METHODS, METHODOLOGY, AND MODELS

4.1 Research Strategy

The case study is the preferred research strategy for this topic as they are used when "the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context" (Yin, 2003, p. 1). In order to answer the research questions, the case study is a strategy that can focus on decision-making by several actors and look at the contemporary structural set up. This strategy "contribute[s] to [the] knowledge of individual, group, organizational, social, political, and related phenomena." (2003, p. 1).

Yin (2003) addresses "traditional prejudices" against case study research highlighting that this empirical method is sometimes accused of having little evidence for generalization. However, the author argues that the case study is "generalizable to theoretical propositions and not to populations or universes" (2003, p. 10). Often times, the use of case studies puts into question what the case is about. The possibility of case studies to be exploratory, descriptive or explanatory (2003) makes it the best strategy to understand the influences on urban development in a specific city. This research is an explanatory case of how external, structural forces can influence the planning of environmental sustainability and social justice in a city where there is municipal planning monopoly power.

4.2 Methods for Data Collection

The data collection is through archival documents and municipal reports that outline masterplans for urban planning. Most of the data is produced by the municipality of Malmö. There is an additional expert interview with Roger Westin, former urban planner of the city of Malmö, conducted on April 16, 2019. The findings are analyzed though the theoretical perspectives of critical urban theory which helps analyze the structures behind urban planning. The added lens of sustainability helps identify urban planning that fall under sustainable urban development.

4.3 Model of Argumentation

As an attempt to conceptualize these contemporary phenomena, the model in Figure 3 below visualizes the chain of thoughts for this research and its connections Critical Urban Theory.

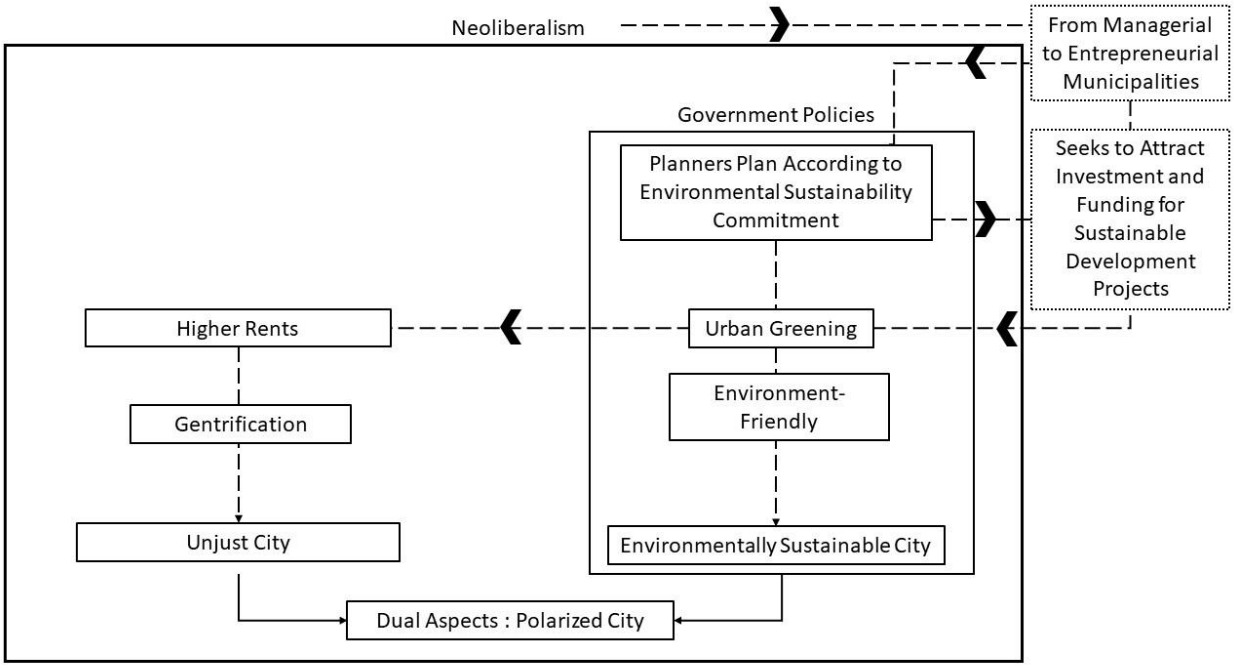

Figure 3: Model of Argumentation. This figure visualizes the outside influences of urban greening and how a switch to an entrepreneurial municipality can lead to an environmentally sustainable but unjust city. This highlights the role of environmental gentrification as a development tool but also highlights that sustainability can be furthered unjustly (Author's Illustration).

This research is presented in a way that demonstrates alternative modelling of an issue related to urban sustainability. The figures illustrated help visualize what is written in the paper and in some cases aid in organizing the different actor-structure relationships. The logic following this process is based on case studies as well as identifying the structural forces behind the work. In order to understand these, secondary literature such as previous research was used. The maps of regions were used to understand Malmö as an example of a bigger phenomenon.

5 FINDINGS AND ANALYSIS

This section will cover the finding from the analysis of Malmö's sustainable goals and urban development policies. A brief background on Malmö will be presented followed by the results which are based on an analysis of municipal and national documents regulating urban development and planning.

Boverket is the Swedish National Board of Housing, Building and Planning. They are tasked with analyzing the housing market, issuing building regulations, and supervising Municipal and County Planning (Boverket, 2018). The documents reviewed for this research are listed below:

- Follow-up of grants for greener cities in 2018
- Spatial conditions for ecosystem services in the built environment
- The public utilities housing companies' development and its influence on housing

The Board's documentation on acquisition of funding and regulations for urban greening as well as the comparisons between municipalities proved helpful in establishing Malmö's position amongst Swedish cities.

The city of Malmö along with SCB, or Statistics Sweden, provide useful data on the city's population, urban development, and income distribution. The documents from the city of Malmö reviewed for this research are as followed:

- The Green Plan 2003
- Commission for a Socially Sustainable Malmö 2013
- Action Plan for Housing Supply 2014
- The Comprehensive Plan 2014
- The Comprehensive Plan 2018

The presentation of the documents above does not denote how the findings will be presented below. As already stated, this research seeks to understand the relationship between urban greening and the risk of gentrification in the city of Malmö. The utilization of the aforementioned documents allows for a comparison of greening strategies and the housing market.

5.1 Why Choose Malmö?

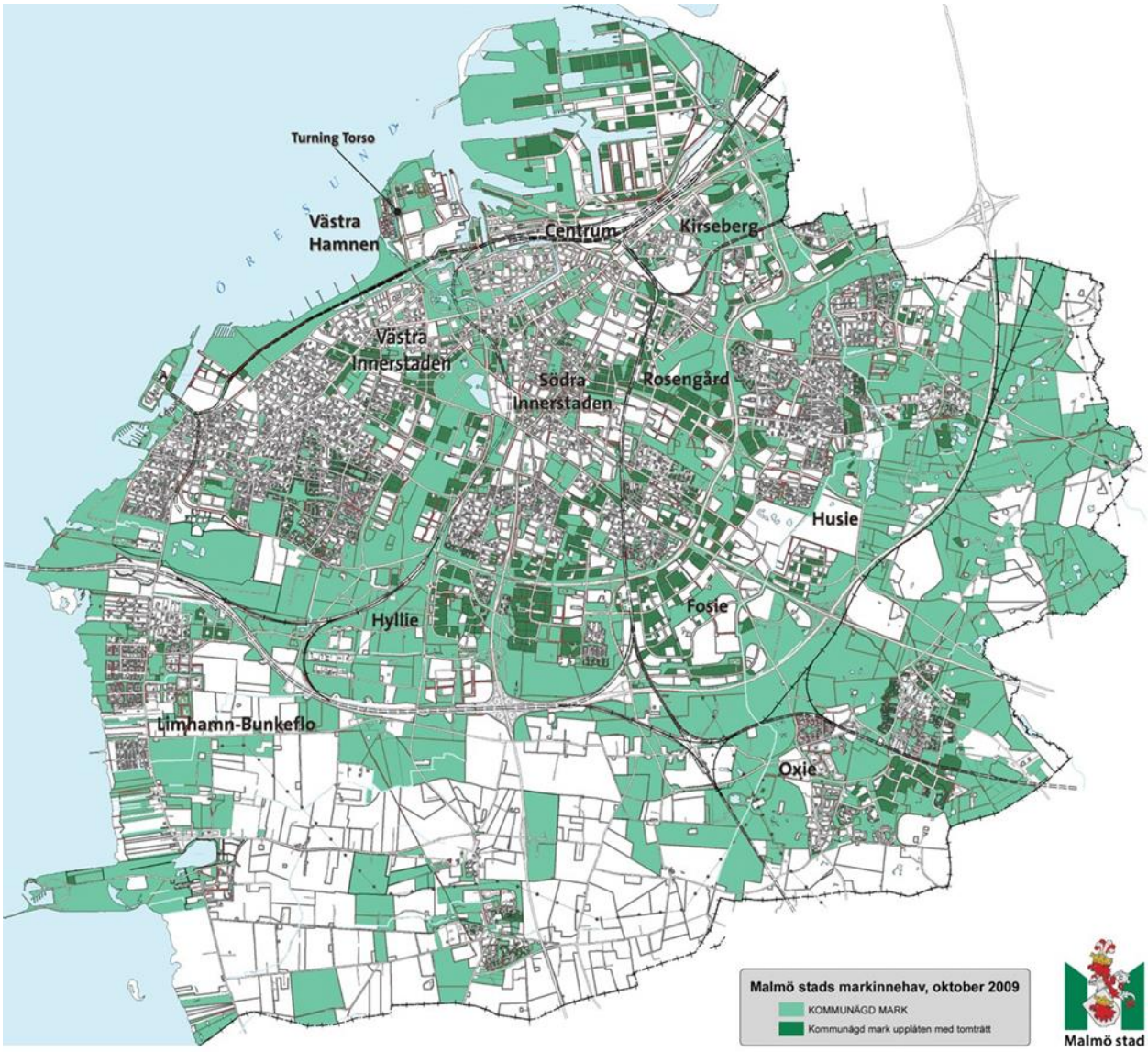

Figure 4: City of Malmö and its neighborhoods (Source: Malmö, 2019c).

Malmö is Sweden's third largest city with approximately 340,000 inhabitants (Malmö, 2019b). With the city's rate of population increase outpacing the rest of Sweden (See Appendix IV), there is a projected 13 percent, or 44,000 new residents increase by 2028 (Malmö, 2019a). The city is located in the Skåne Region in Southern Sweden and is part of the Greater Copenhagen metropolitan area which comprises 1.4 million people (2019a). The rapid increase in population has an influence on a lot of municipal decision-making, such as public transport, housing, and urban development.

Malmö's political history makes it an interesting case to study as its decision-making has made it a prime example of the 'Swedish Model' but also demonstrates the influence of global economic forces

on such processes. Malmö's relative tranquility in terms of the labor market up until the 1980s has had an influence on the strength of the welfare system in providing affordable housing for all (Belfrage & Kallifatides, 2018; Hedin, Clark, Lundholm, & Malmberg, 2012; Sandberg, 2014). The city and its policies have undergone many changes since its pinnacle as an industrial city, but the city's direction has been under the Social Democrats from its industrial days to its service-oriented present. The party's influence on development and planning will be further highlighted throughout this chapter.

5.1.1 Malmö's Housing Sector

Malmö is experiencing housing shortages, rent increases, and residential segregation. Much like the rest of Sweden and its main cities, the occurrence of a housing shortage occurs when the housing supply does not meet the housing demand (Malmö, 2014b). Below, Figure 5 depicts the rents and general price level change on a national level from 1969 to 2018 (SCB, 2018). This depiction shows, on average, a drastic increase in annual rent per square meter in relation to 1969 and more a prominent difference starting in 1990. These drastic changes are occurring mainly in Sweden's large cities of 50,000 people or more, in which Malmö is included (Malmö, 2014b)

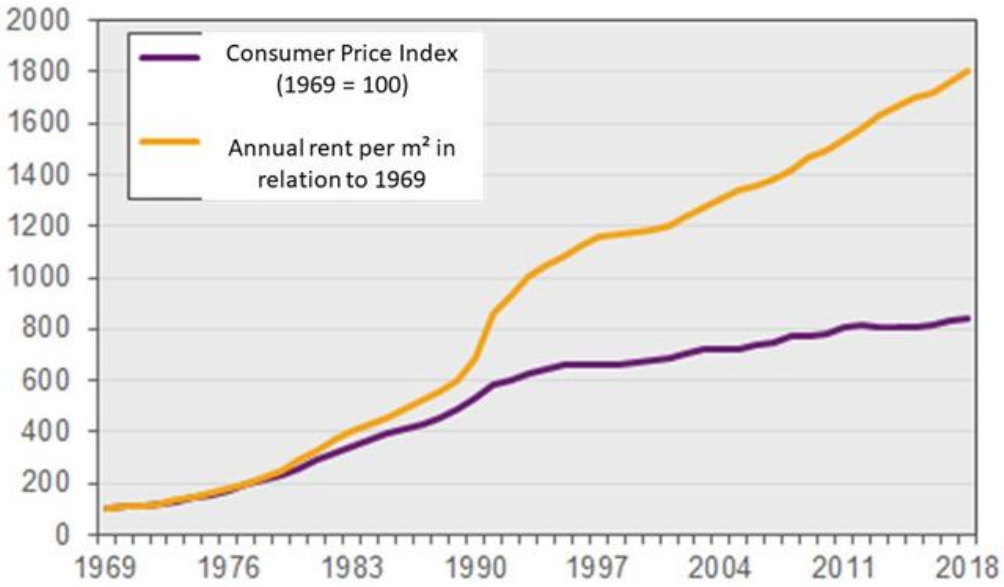

Figure 5: "Rents and general price level 1969 - 2018". The 'x' axis represents the years while the 'y' axis represents rent (Swedish Kronor) per square meter. The Consumer Price Index measures "the average price trend for the entire private domestic consumption based on prices consumers actually pay" (SCB, 2018). The graph shows that the annual rent per square meter diverts drastically from the consumer price index. Overall, the annual rent per square meter increases overtime. (Source: Translation, SCB, 2018)

On the municipal level, Figure 6 below depicts the housing shortage in the city of Malmö. In the years, 1975-1984, the population changes (black bars) is negative each year and there starts to be a drastic increase in population starting in 1994. 1994 is also the second highest population increase, after2009, where housing construction did not keep up with population growth (grey line).

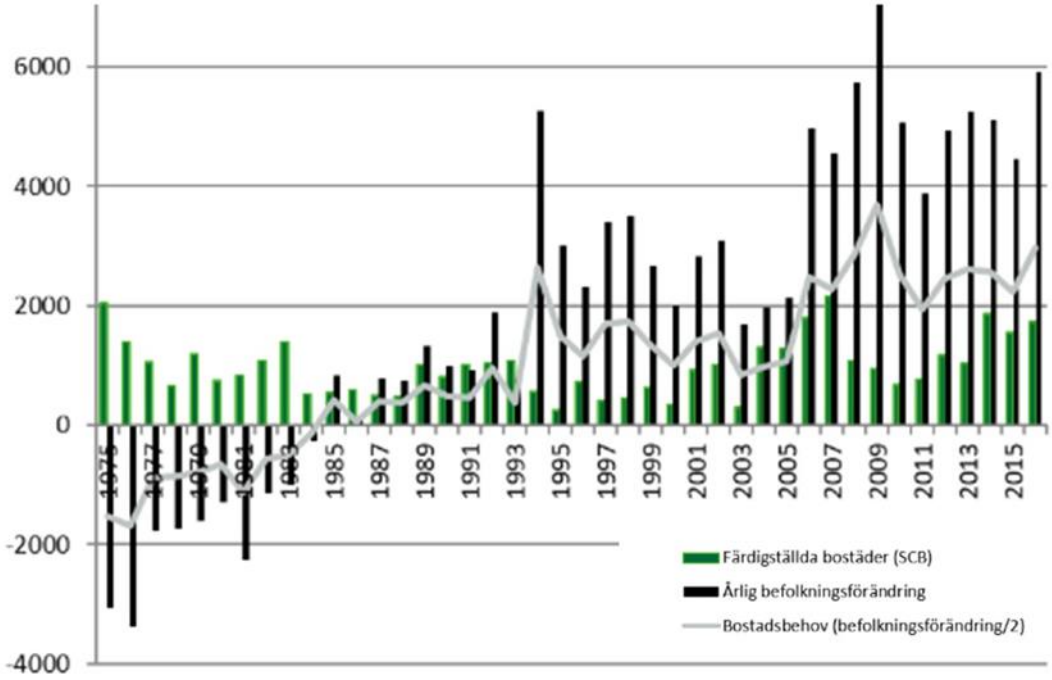

Figure 6: "Housing Construction and Population Changes in Malmö, 1975-2016." The green bars are 'completed housing'. The black bars are the population change and the grey line represents the housing needs based on these two factors, finished housing and population. This figure shows that housing construction has not kept up with population growth. (Source: Malmö, 2017b).

In 2009, the housing market in Malmö was balanced only "if one expects an average of two people per dwelling" (Malmö, 2017b) and since 2009, the housing supply has not reached population development. It can be seen through Figure 6 that Malmö's population has increased drastically since 1990 which is when the beginning of intensive urban development and planning as an entrepreneurial city began.

In addition to rent increases and housing shortages, there has been increasing residential segregation overtime in Malmö. Figure 7 below represents the changes in residential characteristics that have occurred in Malmö between the years of 1990 and 2008.

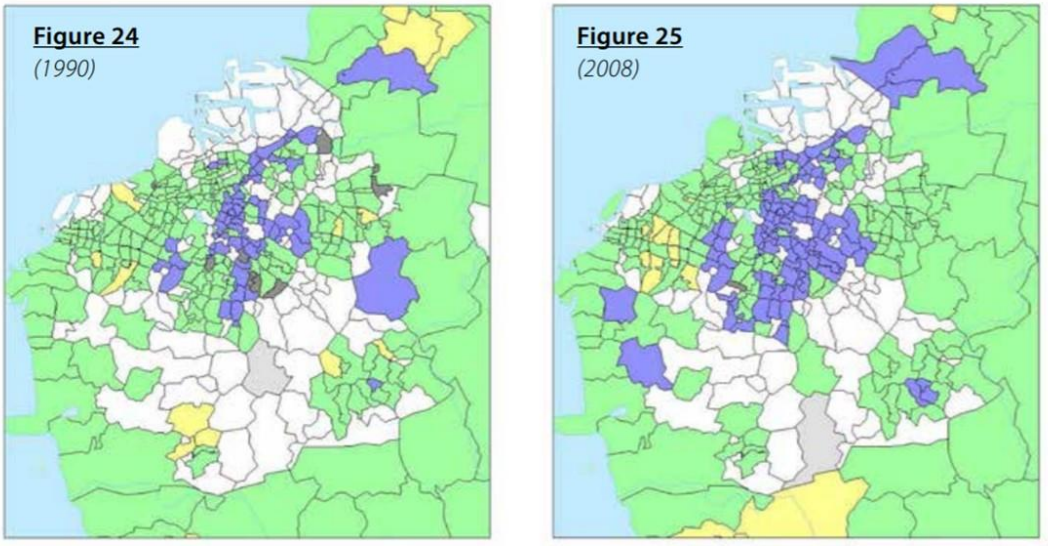

Figure 7: Process of Polarization between 1990 and 2008. This figure shows the 1990 and 2008 difference between Malmö's segregation patterns based on income. The yellow represents "economically affluent areas, dominated by people born in Sweden", the green "mixed, integrated areas", the purple "poor areas, dominated by people born abroad", the grey "poor areas, dominated by people born in Sweden", the dark grey "economically affluent areas, dominated by people born abroad", and white "unclassifed". (Source: Salonen, 2012 as cited in Commission, 2013, p. 71)

Salonen (2012 as cited in Commission, 2013, p. 71) has demonstrated through the above graphic, that socio-economic status and ethnicity play a role in Malmö housing areas. Again, in 1990, around the same time entrepreneurial policies began, close to two-thirds of the Malmö population lived in the green-colored areas, in 2008, this dropped to one half, and now purple colored areas represent half of Malmö's population (2013, p. 71). The work commissioned by Malmö, which will be further discussed in this section, addresses that residential segregation is not always a bad thing; however, what becomes a problem is when these differences hinder participation, health, and opportunities (2013, p. 72). The latter aspect is the focus of this research.

5.1.2 Malmö's Green Space

Through the collection of green space data throughout Sweden, Malmö has had varying relationships with green space. The first relationship with greening was introduced in city's development plan after the 1990-1994 economic crisis (Holgersen & Malm, 2015, p. 9). Up until 2005 the natural environment and urban greenery was linked to recreational spaces and economic relationships in the

city (2015, p. 9). In 2003, the city's "Green Plan" (Appendix III) addressed Malmö's character as a "city of parks" acknowledging that the total area of park and nature in the city was limited (Malmö, 2003, p.1). The report highlighted that Malmö had the least amount of green space than other Swedish cities and that the city was built of cultivated agriculture land, lending a challenge to its development (2003, p. 1). While planning for the expansion of Malmö, the plan develops strategic green planning focused on safeguarding existing green space and developing appropriate new ones. Then, in 2005, statistical data showed that the net change in vegetation in all major Swedish cities was decreasing and Malmö has had the most negative net change in vegetation (2019a, p. 24). Now, data is not much different with Statistics Sweden highlighting that "there is nothing to indicate that the trend has changed" meaning that cities, especially Malmö, is losing vegetation cover (Boverket, 2019a, p. 24).

In 2010, Statistics Sweden produced data showing that Malmö had the most people per public green space (500 people per green area) and the least available green space per person (93 m2 per person) (SCB, 2010). Often, they conclude that the difference in availability to green space comes from the differences in ownership and the housing structures. For example, in some Swedish cities as a whole or parts of others, where personal homes and small houses dominate, the availability of green space is higher (SCB, 2010). For Malmö, smaller parks have high density visitation and larger parks have bigger acreage around the city (SCB, 2010)

The health impacts of and discrepancies in maintaining green spaces in a dense city is highlighted in both 2014 (Appendix III) and 2018 Comprehensive Plans, as well as the report on the impacts of spatial planning on health (Malmö, 2012). Recently, *Boverket*, awarded funds to small and large municipalities to develop existing urban greenery and construct new projects (Boverket, 2019b). For Malmö, these grants falls in line with its first set of primary goals in the comprehensive plans as the city was granted money for green facades in two parking garages located in the center of the city (Boverket, 2019a, p.42-43) and green roofs on two residential buildings (Holmastycket 1 and Rönnen 1) to ingrate benefits of green space in dense areas. Furthermore, there will be a new Sweden-wide statistical publication on urban green spaces planned for December 2019 (2019a, p. 23)

5.2 Developing Malmö's Built Environment

The analysis is important to understand how the city of Malmö portrays the image and plan of the city's future to the public. The execution of transforming and constructing the built environment is particular in this case as municipalities has control over planning. The progression of sustainability will

be noted through the different planning guides and the references to urban greening and housing will be identified.

5.2.1 The Actors (re)Constructing Malmö

Due to the Swedish Planning and Building Act, municipalities must provide a non-binding, comprehensive plan up to 20 years. The Act established in 2010 also sets 'municipal power monopoly' over planning which gives municipalities "the exclusive right to plan within their territory" (Holgersen, 2014, p. 287) meaning that the municipality has control over the environmental amenities and their access to them. Figure 8 below outlines the hierarchy in decision-making and the impacts this has on inhabitants' wellbeing.

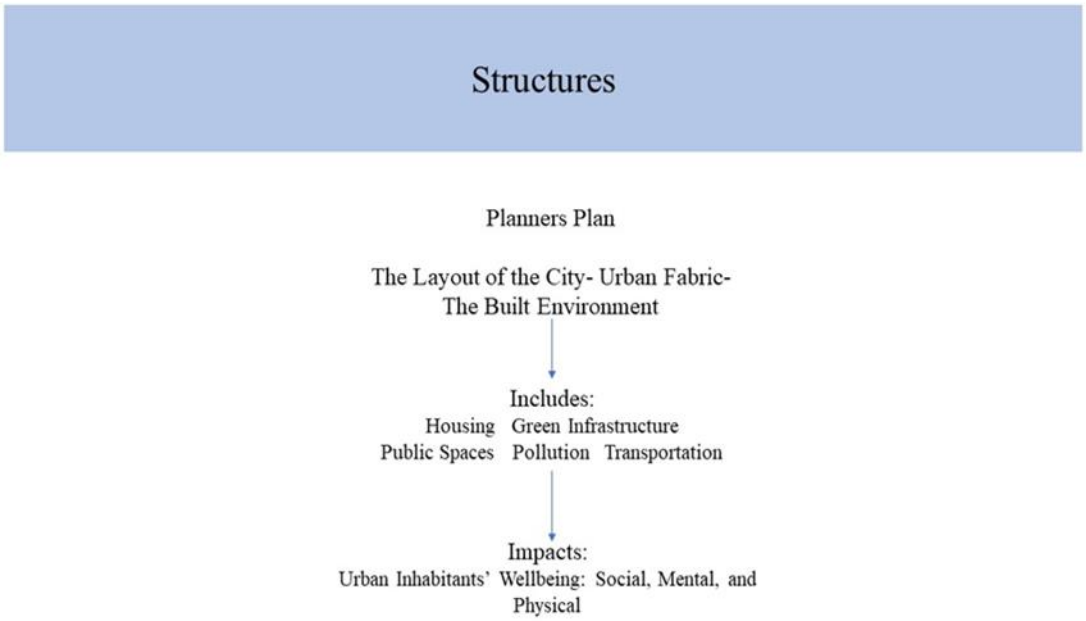

Figure 8: This depicts the process in which planning forces impact urban inhabitants. Urban dwellers' wellbeing is impacted by the spatial planning of housing, green infrastructure, public spaces, transportation, as well as pollution from highways or industry for example. The different structures that influence the government and the planner then have an impact on the inhabitants' day to day life. (Author's Illustration)

The goal of this figure is to demonstrate how those in charge of transforming the urban space can impact the social, economic, and physical health of urban dwellers. As a result, it is an example of how global economic forces can affect the planning of local municipalities, especially one that has historically been under a social democratic tradition.

Decision-making in Sweden occurs on three levels, the central state, the regions, and the municipalities. The decentralized hierarchy of these levels means that certain tasks are weaker than others. For example, the regional level plays a weak role in planning, whereas the municipalities play the larger role (Kärrholm, 2011, p. 106). Kärrholm (2011) adds a level to the hierarchy, the Öresund Region, which many scholars on sustainable and/or neoliberal planning highlight this level of decision-making as an important influence (Anderberg & Clark, 2013). Even though Swedish municipalities have the monopoly of planning, and other layers of Swedish decision-making in planning are weak, municipalities still experience pressure from greater structural forces that change the urban form and ultimately, the wellbeing of urban inhabitants.

Malmö's development from an industrial to post industrial city emphasizes certain structures at play in transforming the city's plans. Holgersen (2016, p. 1170) uncovered that Malmö's transformation and planning into a post-industrial city, and thus entrepreneurial, led to further polarization and class differences. The planning structure of Malmö denotes the responsibility city planners have in the Swedish context. The Malmö municipal government "adopted a development policy with the typical traits of neoliberalism…" (Sandberg, 2014, p. 1072), meaning that aspects based on market mechanisms influenced different projects such as housing, architecture, and services. Often times, these sectors, such as housing, were not previously as affected by market forces (Hedin et al., 2012).

5.2.2 Housing Policy as a Planning Power

As already stated, there are other layers of Swedish decision-making that can change the urban form despite the municipal monopoly over planning. The alterations in housing policy from the early 2000s in Sweden represents changes to housing conditions as "…neoliberal housing politics have established market-governed housing provision with a minimum of state engagement" (Hedin et al., 2012, p. 443). Hedin et al. (2012) demonstrated, among other Swedish cities like Gothenburg and Stockholm, that this neoliberalization of housing policies has led to gentrification and filtering in Malmö. In the past, the 'Swedish Model' of welfarist policy, or managerial policy (Harvey, 1989), stood the test of time, even when there were many global economic forces turning most managerial policies neoliberal (Hedin et al., 2012; Lindbom & Rothstein, 2004). It was not until recently, due to economic collapse of the city, that politics have reshaped Swedish welfarist policies, more specifically in terms of housing. Now, Sweden has "gradually become one of the most liberal market-governed housing markets in the Western world" (Lind & Lundstrom, 2007, p. 129 as cited and translated by Hedin et al, 2012, p. 2).

Changes within the Swedish housing market altered the way public housing works around the country. Public housing in Sweden has been a keystone of managerial economies and, as stated before, a keystone of Swedish markets. However, changes to the public housing sector through the legislation on the Swedish housing market Rent Act (*Lag (2010:897) om kommunala allmännyttiga bostadsbolag*) reformed the way public housing provided housing for all (Boverket, 2011).

These decisions impacting municipalities stretch back to the national level and to the European scale. Complaints were filed to the European Commission by private actors stating that Sweden's housing sector fell outside the Commission's demand for open competition (Grander, 2017). These complaints led to Sweden ceasing subsidies to municipal housing companies, or to public housing. The changes to the rent act in 2011, mentioned above, led to what Grander (2017) explains as the development of municipal housing companies as "hybrid organizations" (Christophers, 2013; Salonen, 2015; as cited in 2017, p. 340). This is because the municipal housing companies, such as MKB, now have to juggle economic justification for construction and social responsibility, as the latter component is still mandated in the rent act (p. 340). In order to focus more on goals as a long-term private company that were not present before, there are now changes in the influence local parties have on the utility system (size, location of building, etc.) (Grander, 2015). This means that that the public housing companies work more towards a profit-making housing construction scheme than they used to.

The political shift away from the Social Democrats changed the way Sweden deals with housing (Hedin et al., 2012). Part of Harvey's (2005, p.115) 'circumscribed neoliberalism' description of Sweden denotes that, while strong social support exists, aspects of the country's economy is more influenced by market forces. Housing, though historically has not been swayed by market forces, is now currently part of this phenomenon. Even when the Social Democrats came back into power, they did not switch back to housing regulations from before (Belfrage & Kallifatides, 2018; Hedin et al., 2012). Once an area that was untouched by market forces, a pinnacle of a social democratic society, housing is now measured more though its economic benefits in Sweden than before.

With the backdrop of this occurrence, the sudden visualization of sustainability as a primary goal in urban planning and development questions how the neoliberalization of housing markets and the marketization of the sustainability discourse can raise the quality of life for all urban dwellers. In Malmö, increasingly, projects from MKB and the city promote sustainability and funding. Neoliberal policies surrounding environmental decisions and urbanization is beneficial for business and for real estate, however, surface level policies are no match for bridging social justice and environmental sustainability

(Greenberg, 2015, p. 109). While, there has been little research on whether these projects lead to gentrification, scholars and planners have denoted the difficulty in renovating low-income neighborhoods as the publicity is not good enough to get the funding. Holgersen and Malm (2005) uncover that city officials are aware that the renovation of low-income housing would not get the same publicity of a project like Västra Hamnen, the city's example of sustainability. This promotes a dangerous precedent for creating a sustainable city as it continues to favor the well-off.

5.3 Malmö's Commission as Evidence of Recognition

The "Malmö Commission" was launched in 2010 to evaluate different areas of social sciences, health economy, and urban studies all in relation to the city of Malmö (Malmö, 2018b). It provides evidence that Malmö recognizes that there are inequities in the implementation of environmentally sustainable measures. The work presented in their report demonstrated that the layout of the city or the planning of the built environment can have an impact on the health of low-income residents in Malmö.

During its time, the commission was tasked with coming up with strategies to reduce health inequalities while focusing on three priorities (2018b):

1. Conditions of growing up for children and young people
2. Democracy and influence in Society
3. Social and Economic Conditions

Their final report, published in 2013, provided information on a 'path towards a sustainable future' and focused on the trade-off between environmental sustainability and social justice, alongside economic growth (Malmö, 2013). The report ends with two recommendations to aid closing the health gap between low- and high-income residents in the city. First, the Commission advocates for a "social investment policy" to addresses differences in living conditions and second, they propose a change to these systems with "the creation of a knowledge alliance" between private, public, and voluntary stakeholders (2013, p. 6). The latter can be found in the 2018 version of the comprehensive plan. The Commission concludes that a holistic version on planning and decision-making helps with changing the narrative of Malmö's development. They acknowledge the recognition of environmental sustainability and the switch to a knowledge city but mainly focuses on the need to close the gaps between different groups in Malmö (2013).

For housing, they suggest a "new municipal contractor organization for assignment-based housing development" tasked with providing housing for residents of Malmö (Malmö, 2018b, p. 138).

For green space, their research highlights discrepancies in the access to green space for the youth and repeat the benefits of greening in urban contexts. This outlook is important as it adds the social justice dimension to urban development and contemporary sustainable planning all while looking that the polarization in Malmö. The Malmö Commission reveals that there are inequities in the built environment, the problem is real and is recognized by the city; however, these conclusions are not mentioned in the past or current comprehensive plans.

5.4 The Impact of Environmental Sustainability on Urban Space

The inclusion of the natural environment in Malmö's urban development policy increases over time from its crisis management days in the 1990s as a deindustrialized city to the city of knowledge that it is today. The first development policy rooted in a post-industry spirit was implemented in 1995 (Holgersen & Malm, 2015). It focused on the economic and business development of the city to diversify investment and attract people to the region. The inclusion of the environment was limited to the development and creation of recreational parks within the city (Holgersen & Malm, 2015).

The original comprehensive plan was in 2000 with an update in 2005 and there have been new publications in 2014 and 2018. The planning guides focused on changing the idea of sustainability in the city of Malmö (Kärrholm, 2011, p. 102), as previously, post-industrial planning ended up being more environmentally sustainable. The comprehensive plan focuses on transforming the idea of sustainability into the idea of three pillars, social, ecological, and economic sustainability for planning (2011, p. 102). Its goal, as a strategic document, is to aid municipal decisions "to create a more sustainable Malmö" (Malmö, 2014, p. 2). The city uses them to focus on multiple challenges in the way of maintaining a growing city with good living conditions (Malmö, 2014). These goals demonstrate that the city does have plans for both environmental sustainability and social justice (under the title of social sustainability).

After a few years, the natural environment or 'urban greening' became more prominent in development policies. The environment then became a goal of urban planning and development but came only third after business and economy priorities in Malmö. It was in the Comprehensive Plan in 2000 that the term 'sustainability' first occurred in policy documents (Holgersen & Malm, 2015). The 2000 plan placed the environment as a shared goal between business and economy. The updated Comprehensive Plan of 2005, adopted in 2006, then highlighted as a primary goal that "physical planning is now defined as an attractive and sustainable city" (Holgersen & Malm, 2015, p. 9). This is a common primary goal that is present up until the most current comprehensive plan which is discussed below. Despite having the knowledge of the risk of environmental gentrification, the structures are not

identified as having a power impact on urban space planning, nor are there indications of coupling urban greening and housing as an explicit solution.

5.4.1 A Master Plan to Share Development Priorities

The major differences in the current comprehensive plan, adopted in 2018, compared to 2014 Comprehensive Plan (Appendix III), are the inclusion of migration, climate change, and homelessness as major challenges in city planning (Malmö, 2018a, p. 1). In the 2018 adopted master plan, the Chair of the City Executive Board writes "the city is affected in various ways by both fast and slow changes and developments in the world… national decisions also have an impact locally" (2018a, p. 2). This is the only indication of the structural forces and targets the city of Malmö has to comply with. Similarly, to the past comprehensive plans, the current master plan still stands by the goals of social, economic, and environmental sustainability as valid top priorities (see Figure 9 below) and repeat that these goals will also lead to an 'attractive place to live and work' (2018a, p.2). The language surrounding these goals point to the continued commitment to an entrepreneurial city. Now, however, the objectives and priorities are now evaluated through the United Nation's Sustainable Development Goals. Figure 9 below compares the visualization from both the 2014 and 2018 Comprehensive Plans.

Figure 9: *The priorities that guide Malmö Planning in 2014 (left) and 2018 (right). Malmö's comprehensive plan in 2014 was focused on economic, social, and environmental sustainability. In 2018, these are the same priorities; however, they are evaluated through the United Nations' Sustainable Development Goals. (Sources: Malmö, 2014a, p. 3; Malmö, 2018a, p. 3)*

Despite the inclusion of new challenges to urban planning, the objectives and priorities of the 2018 Comprehensive Plan (see Table 1 below) are relatively the same, presenting very few modifications

such as in the titles. Apart from the integration of the Sustainable Development Goals, the other differences are found in the forward, where Malmö's need for more housing is discussed.

Table 1 The first table illustrates the priorities from Malmö's Updated Comprehensive Plan (Adopted 2018) (Source: Malmö, 2018a). The second table presents the priorities from Malmö's New Comprehensive Plan (Adopted 2014). (Source: Malmö, 2014a). Through the analysis of these two tables, there are very few modifications to the 2014 priorities present in the 2018 priorities.

2018

Close, Dense, Green Mixed-Function City	A regional driver of green growth and employment	The City as a Venue for Culture and Democracy
• Saving Resources through higher density urban development • Building for proximity • Mixed-function city and a vibrant city life	• Reinforcing the Oresund Region's ability to generate green growth • Continued development of an attractive city • Creating space for a diverse commercial sector	• Increasing and improving social spaces • Working for security and equality in the city • Working for a healthy city • Encouraging participation

2014

A mixed-function, dense, green and close city	A regional generator of green growth and employment	A cultural and democratic arena
• Saving Resources through higher density urban development • Building for proximity • Mixed-function city and a vibrant city life	• Reinforcing the Oresund Region's ability to generate green growth • Continued development of an attractive city • Creating space for a diverse commercial sector	• Increasing and improving social spaces • Working for security and equality in the city • Working for a healthy city • Encouraging participation

When the documents are further analyzed, the mentions for housing and urban green space in the 2014 plan are repeated in the 2018 plan. Housing is discussed in the general objective for "Economic Dynamism and Sustainability" and it is written that "cities and regions compete for people and capital. A city's overall attractiveness is influenced by a range of factors, including availability of an attractive housing stock and good schools…" (Malmö, 2014, p.4). Such language alludes to the entrepreneurial, or neo-liberal, city where economic priorities influence the city's formation. Additionally, the framing of

housing in terms of attractiveness and competition portrays the urban fabric as a tool for the economic needs of the city. Furthermore, housing is highlighted in the priority to build for proximity in which shops and businesses should be close to housing, as well as public transportation and main roads (2014, p. 6). Within the primary goal of a 'mixed-function city and a vibrant city life', the goal of housing being 'interspersed with new forms of tenure or architecture in order to achieve a more diverse mixture of households" (2014, p. 6) is repeated in 2018. The same occurs with the next primary goal of "a regional generator of green growth and employment, where the Comprehensive Plan outlines that "Malmö's attractiveness and economic and social development is reliant on a functional housing market, which offers a broad selection of good homes" (Malmö 2014, p.7). The other mentions of housing are found within discussions for sustainable waste management, energy, and construction where environmental sustainability can help decrease resource use with energy efficient housing, construction, and buildings. As the Comprehensive Plan is forward-looking, the plan ends with the realization and acknowledgement that the city will continue to grow and therefore, there will be "a need for more housing, workplaces, and services" (2014, p. 16).

Urban green space, or greenery, is addressed in the Compressive Plan quite plainly as one of the special priorities. The plan highlights that priorities for its physical planning will be a "mixed-function city…generat[ing] a rich and vibrant urban life which still retains strong elements of greenery" (Malmö, 2014, p. 3). These are also the same repeated mention in the 2018 Plan. The main challenge expressed in the planning document highlights the trade-off between densification and urban greenery and strongly propose that "a more compact city is not less green" (Malmö, 2014, p. 6). This idea is important as the trade-off will be harder with a growing population. Within the subcategory of "building for proximity", the distances to green spaces will be reduced and there will be development of new and existing parks (Malmö, 2014, p. 6). The benefits of greenery on health is mentioned in the Comprehensive Plan, within the special priority of "the city as a cultural and democratic arena." Malmö's planning is to have "a diverse selection of social spaces, green areas, and parks, nature and recreational areas…" (2014, p.12) The strategies to achieve a greener city revolves around connecting the city's parks, developing existing parks, and constructing new ones all while considering space, maintenance, and accessibility (2014, p.12). An idea brought up again in the 2018 Plan is that the greenery strategies should support an 'attractive and sustainable urban environment needs to be both dense and green," which denotes again the same language of an entrepreneurial city (Malmö, 2014, p. 12). The last mention of green space is that people of all ages and social backgrounds to engage in recreation, sport, and play" (Malmö, 2014, p. 7).

These details are important to address as it demonstrates that the Comprehensive Plans discuss the layout of the city or the built environment including housing and urban greening. It provides insight that goals for environmental sustainability and social justice (or social sustainability as per the city) are dealt with separately. Furthermore, the presence of environmental sustainability is often coupled with the idea of a city's attractiveness underlying the transformation of Malmö into an entrepreneurial city. There are mentions of dealing with density and reducing distances to green spaces which provide an entry point to bridging environmental sustainability and social; however, the problem of environmental gentrification is not mentioned.

6. DISCUSSION: LARGER FORCES AT PLAY

This section discusses how the results, under Critical Urban Theory, were expected, although changes to the overall 'Swedish Model' housing will have impact on coupling environmental sustainability and social justice. The planning guides for Malmö recognize the importance of greenery for health but still equate it to the attractiveness of the city to attract people and capital. Furthermore, the changes in the rental law that makes public housing companies more market-orientated will continue the supply of housing to high-income residents. Most likely, these images and examples of 'environmental sustainability' will be associated to the latter type of housing. Actors of change are identified by the municipality from all different sectors, including public, private, and volunteer actors. Lastly, overtime, the city of Malmö has experienced a polarized city and planning the city on profit-making actions will lead to environmental sustainability being associated to wealthier neighborhoods and continue to exacerbate the polarization.

6.1 Transforming into an Entrepreneurial City

Malmö's transition from an industrial city to a knowledge city has included attracting both capital and people. The original comprehensive plan and precedent development plans after 1995 was established to transform a deindustrialized city. A lot of the research on Malmö's urban development post-1995, or post-industrial era, focuses on the tactics the policies used to attract people back into the city and to make the city a more attractive place to invest (Holgersen & Baeten, 2016; Holgersen & Malm, 2015; Kärrholm, 2011; Sandberg, 2014). The vision-work proposed by Mayor Ilmar Reepalu (in office 1994-2013) launched the comprehensive planning development that has put Malmö on the

international stage for environmental sustainability standards (Holgersen & Baeten, 2016; Holgersen & Malm, 2015, p. 276) (See Appendix V for awards).

Along the lines of Harvey's (1989) definition of an entrepreneurial city, Malmö "has had to be much more innovative and entrepreneurial, willing to explore all kinds of avenues through with to alleviate their distressed condition and thereby secure a better future for their populations" (p.4). Following the development of Malmö to this point highlights constructions such as the Västra Hamnen and Linhamn Quarry that place environmental sustainability and urban development as the best options to create Malmö's image. Kärrholm (2011) argues that such developments have put Malmö on the map for some of the best examples of sustainable development; however, other scholars argue (e.g., Holgersen & Baeten, 2016) that, while environmental and economic sustainability has been achieved and revered, the city falls behind in addressing social justice.

Malmö has risen from a deep socioeconomic crisis after the fall of industry as the city became a model for post-industry management (Holgersen & Malm, 2015); however, the city has experienced increasing housing shortages, social polarization, and homelessness (Commission, 2013; Malmö, 2018a). Housing has been supplied in wealthier parts of town while a municipal and country wide housing shortage is occurring. The transition from a managerial to a more entrepreneurial city has influenced the economy, the policies, and the politics of Malmö. This transition follows a widespread trend in Western Europe where states have either incrementally or drastically dissolved their welfare orientations only to take on something surrounding 'new urban politics' (Brenner, 2003, p. 197). These politics focus primarily on local economic development and competition. These changing structures influence those making decisions about the urban form as cities are in charge of their budgets, these forces open up sectors to market forces. For Malmö, and most of Sweden, the changing of housing policies and driving up attractiveness has led to sectors the exposition of previously protected to market forces (Hedin et al., 2012).

6.2 Environmental Sustainability and Social Justice in an Entrepreneurial City

The city of Malmö has commissioned work on the impact of planning on health and has integrated some of the work from the Commission for a Socially Sustainable Malmö in the new 2018 Comprehensive Plan. However, there are no differences with the mentions of urban greening in the new plan, nor in the relationship of urban greening and property values. The housing shortage is identified in the new 2018 Comprehensive Plan, but the use of the greening and housing is still coupled with the idea of attractiveness. The Commission recognized the need for many other actors in creating a socially just city and highlighted the need for a new public housing contract that would address the benefits of environmental sustainability in affordable housing. However, the structural forces are still influencing the Öresund Region, the Swedish country, and the City of Malmö as rents still rise and homes constructed now are more expensive than those previously (SCB, 2016).

Figure 10 below is an illustration of the outcome of policies. Malmö focuses on the three pillars of sustainability, in which environmental sustainability and social justice (social sustainability) are included; however, without the bridging of these policies there is a dual aspect to the city.

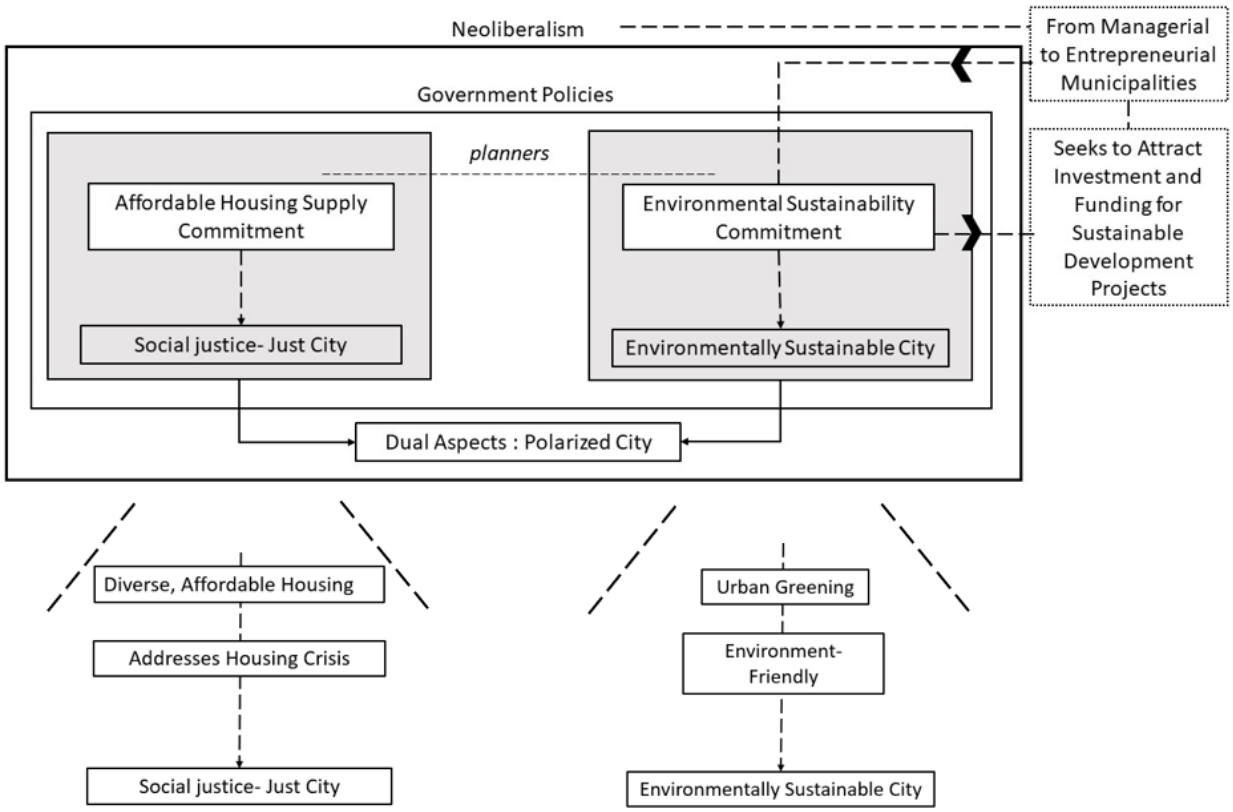

Figure 10: The Outcome of Policies. This is a depiction of what is occurring in Malmö if environmental sustainability is decouple from social justice. This ends up furthering polarization in the city as well as dispersing the health benefits of urban greening away from low-income populations. The need is to couple or bridge these policies for a more environmentally sustainable and socially just city. (Author's Illustration)

The examples in Malmö's development that are presented as the city's prime example of environmental sustainability are those that advertise to attract high income individuals. Therefore, environmental sustainability and high-income inhabitants is the city's target to rejuvenate its image. For example, Limhamn quarry and Västra Hamnen, are areas where the rent is more expensive and also more where the supply of housing focuses on tenant-owning housing, rather than rentals.

The influence of these policies and the politics changing visions influence the image of the city. The vision of the city under 'sustainability' attracts wealthier and affluent individuals, for example, solving economic crises with green tinted policies known as the green fix (Holgersen & Malm, 2015). This not only places the ideal of sustainability in areas of the city where it is not assessible to all, but it also sets a precedent about what sustainability is about for Malmö.

6.2.1 An Unjust Outcome

Cities seek to find an image that will garner them attention and build goals around it. This urban branding in Malmö is particular because the green image is accompanied with actual environmental sustainability changes (Holgersen & Malm, 2015). Under such urban branding, development policies are important to look at as they provide an insight on the type of people, investment, and future a city is envisioning. For Malmö, the development plans included spectacular "…architectural and infrastructure projects [such as the Bo01, Västra Hamnen, and Turning Torso]" and plans to attract a more creative class (Sandberg, 2014, p. 1072). This attractiveness to the creative class is a switch from typical industrial city planning and more often than not, can lead to locking out low-income neighborhoods from the environmental amenities.

The development of urban greening in city planning shows that the green colored lens of plans had a background in economy. Holgersen writes of the greening strategies which help "…the marketing of the locale as a place for environmentally sound launched by the state and capital in concert" (Holgersen & Malm, 2015, p. 5). This means that the branding of an area to be environmentally friendly is carried through by the government but also following where the money is.

When it comes to urban branding, sustainability can be used by the 'power elite' terms used by C. Wright Mills which means that the big business and the political leadership that is involved with this big business (as cited by Greenberg, 2015, p. 105). After this occurs, certain social aspects are overlooked and often times, problems with affordable housing arise (Pearsall, 2010). Environmental sustainability is highlighted in higher-income areas and social justice is highlighted in low-income housing areas. Very rarely in plans are the ideas meshed together to present, not a polarized city, but a sustainable and just Malmö. The city of Malmö, and all of Sweden, are experiencing changes in the housing market that makes public housing companies more private investment orientated but a commitment to environmental sustainability and social justice are important if cities are planning on addressing the housing shortage.

6.5 Action Towards Change

The transition to a sustainable city should address both environmental and social justice. Two concepts that are often addressed individually can be merged together to accomplish this transition. The actor-structure framing of sustainable urban projects through Critical Urban Theory provides an arena for new actors to challenge the structure if other methods prove to be ignored. The more environmentally sustainable cities are does not mean that they are more equitable. This section

provides action towards planning a sustainable city without social displacement. By addressing the potential pathways for determining the structures influencing the commodification of the urban form.

Malmö addresses that the housing construction is not meeting the growth of Malmö's population and write of the outcomes from the deregulation of the housing market in the past years (Malmö. 2014b). Malmö has highlighted a change to the public housing as a requirement to merge environmental sustainability and social justice. Additionally, the Union of Tenants has made calls towards similar changes.

6.5.1 Right to the City as a Response to a Neoliberal City

Critical Urban Theory helps question the political and economic structures that influence the urban form. Movements under the banner of the Right to The City target the dominant structures that reinforce environmental and social problems within the city. If policy recommendations and scientific research is not enough to sway the actors, then the challenges from the outside can influence the structural change.

As an example, Malmö demonstrates the relationship between green projects and social justice as "… a more radical restructuring of the city would certainly aim, first of all, at improving the lot of people in disadvantaged neighborhoods…" (Holgersen & Malm, 2015, p. 17) and would not highlight that it's easier to fund projects that attract affluent and entrepreneurial individuals. While the Västra Hamnen framed as the image of sustainability in Malmö (R. Westin, personal communication, April 16, 2019), it excludes certain groups and its inception is not based on providing a greater quality of life for all. The Right to the City movement helps mobilize inhabitants around the idea that the city should be accessible to everyone and when looked through the sustainability tinted glasses, the transition to sustainability is a process that many cities are adopting.

6.5.2 Just Transition as a Response to Separate Policies

However, a clearer solution to bridging the policies is to call for a just transition in housing and urban planning to make sure that sustainable policies do not push away low-income communities. With increasing converging of sustainable development and urban development (Devolder & Block, 2015), movements through civil society can help influence policymaking, planning processes, and the political structures influencing these changes. The International Union of Tenants and the Swedish Union of Tenants (Hyregästföreningen) have been noted to "take account of all affected parties, as well as the unequal power relations amongst them" (Stevis & Felli, 2016, p. 38). This of course is central to a just transition. Often times, just transitions are associated with green energy and labor forces; however,

casting a broader net to see the transition of cities into a 'greener' image has impacted residents' wellbeing.

The greening of cities, based on the work from Stevis and Felli, is an example of justice on a narrow scale but a broad scope (2016). The authors write that urban polices are often broad, however, not always equal. For examples, planning for environmental sustainability in a city demonstrates, often through comprehensive plans, that there are multiple areas to be transitioned sustainably. While public housing companies can be informed of a new mandate, pressure from the outside should be applied. The Union of Tenants have called for more affordable housing that is environmentally fit (Franzen, 2017). Moreover, these calls from the Unions and from the Malmö Commission have been focused on the youth. The call for a just transition in urban planning, and more specifically housing, can help bridge the ideas of environmental sustainability and social justice.

6.6 Limitations of this Work

By analyzing what the municipalities report and surveying academic literature, there is a missing link of inquiry through these methods. In order to first lay the basis of analysis for how the structural boundaries of neoliberal urban planning works, the aspect of what the municipality does on the ground and the real-life impacts on those who live in the city is missing from this research. The scope for this research has affected the data collection as it was focused on archival research and the history of post-industrial urban planning. This may lead to problems in which analyzing the same document under a different theoretical lens may result in different findings.

As a study on urban planning and sustainability, the realm of the rural is out of scope for this research. This is a limitation to the work as the rural and the city are interconnected when it comes to the sustenance of urban life. Similar projects related to sustainability and decision-making can be found in rural areas. Therefore, a limitation of this research provides only insight on urban planning and sustainability. Furthermore, such occurrences are more increasingly common in the study of peri urban areas as there is no doubt that planning and policy affect the land-use and space production in these areas (Elden, 2004).

Additionally, this research is focused on the history and outcome of urban development in a Western-Europe post-industrial city. On one hand, this research can be brought to a larger scale as urban branding, affordable housing, and urban sustainability are global issues, however, the way the factors interact can be different. On the other hand, this research is also not an in-depth analysis of

green gentrification in a specific part of Malmö. A narrower scope could also uncover place-specific interactions including actors and structures. Despite these limitations, the scope of this research provides insight in the assumptions made by a municipal of the relationship between environmental sustainability and social justice.

7 CONCLUSIONS

This research presents two different conclusions, one is centered on the case of Malmö and another is about the compatibility of environmental sustainability and social justice in the context of urban greening and gentrification. In a broader lens, the research presented in this paper, contributed to the work on environmental gentrification and sustainable urban planning. Malmö provided an insight on the transformation of a deindustrialized city and of a managerial city to an entrepreneurial one. These patterns subjected to worldwide applications can lead to unjust cities under the name of sustainability. Sustainability must incorporate aspects of social justice in the city in order to create an environmentally sustainable and socially just urban form for its inhabitants.

The layout of a city is planned with a purpose in mind. The purpose carried out by urban planning therefore has an impact on the wellbeing of urban inhabitants. Planners can implement changes, such as increasing green space, to ameliorate human health and the soundness of the built environment. However, to ensure such environmental sustainability measures are equally distributed in the city, an acknowledgement of unintended consequences of implementing urban greening should be in the planning process. This can also address a recognition of using urban greening as an intended tool for profit-making.

This paper sought to address the tradeoff between environmental sustainability and social justice in urban areas through the lens of Critical Urban Theory. The analysis points to neoliberal economic forces as the main reason for environmental sustainability being prioritized over social justice. In order to address sustainability measures that create inequality and the planning of market-oriented sustainability, changes in both the agents and structures were highlighted.

Considering why municipalities plan for green space in urban areas, the finding showed that in the case study of Malmö, the municipality credits green space as a benefit to human wellbeing and built environment attractiveness. However, the comprehensive plans still do not address the possibility of environmental gentrification. The city of Malmö in the era of post industry has framed their planning

policies around attracting inhabitants that are not already living in the city. Urban greening is planned for aesthetic purposes and for the physical health of inhabitants. Greening and housing is attributed to an attractive city which stand behind the reasoning for an entrepreneurial city. The comprehensive plans attribute both a healthy city and an attractive city to the implementation of green space. In the report of the Commission for a Socially Sustainable Malmö, urban greening is vital for physical and mental health, especially for the young inhabitants.

In addressing whether municipalities are aware of the unintended consequences of urban greening, the Malmö Commission's work highlighted the inequal distribution of physical urban characteristics such as access to green space, but it did not address structural forces. The report focuses on the highly segregated reality of Malmö and how the unequal distribution of such amenities can impact the health of inhabitants. Malmö is inhibited in reversing or drastically changing the effect of urban greening on property values as it has transformed into an entrepreneurial city experiencing a housing shortage. It is also conducting its planning under national rental changes where public housing companies must include economic profitability as well as social responsibility in their constructions. This, in turn, does not help reverse the effect of urban greening of property values as environmental sustainability amenities, such as urban greening, influences housing prices especially when environmental sustainability helps brand the city as an attractive place to live.

In terms of action towards ensuring that social justice aspects are included in the planning of environmental sustainability aspects of the city. Action towards bridging environmental sustainability and social justice must come from an outside actor such as, Hyregästföreningen, and come from a just transition demand geared towards tenants. The research identified Hyregästföreningen as a main actor to demand housing that is affordable and environmentally fit. As the policies do not seem capable of bridging both environmental sustainability and social justice, additional actors and changes to broader housing policy should be introduced.

7.1 Further Research

The idea to couple social justice and sustainability is not new, moreover, it can be argued that it is more important now as sustainability is mobilized under profit driven plans and further polarizes urban groups (Gilbert, 2014). This research was focused on municipal level planning and the discussion of few national law changes. Further research could be done on EU initiatives and policy recommendations for urban greening and green space in cities. This would add an additional layer of

decision-making. Additionally, research on new planning in urban areas and in rapidly urbanizing cities in low-income countries trying to couple environmental sustainability and social justice would be important to environmental justice and environmental gentrification literature.

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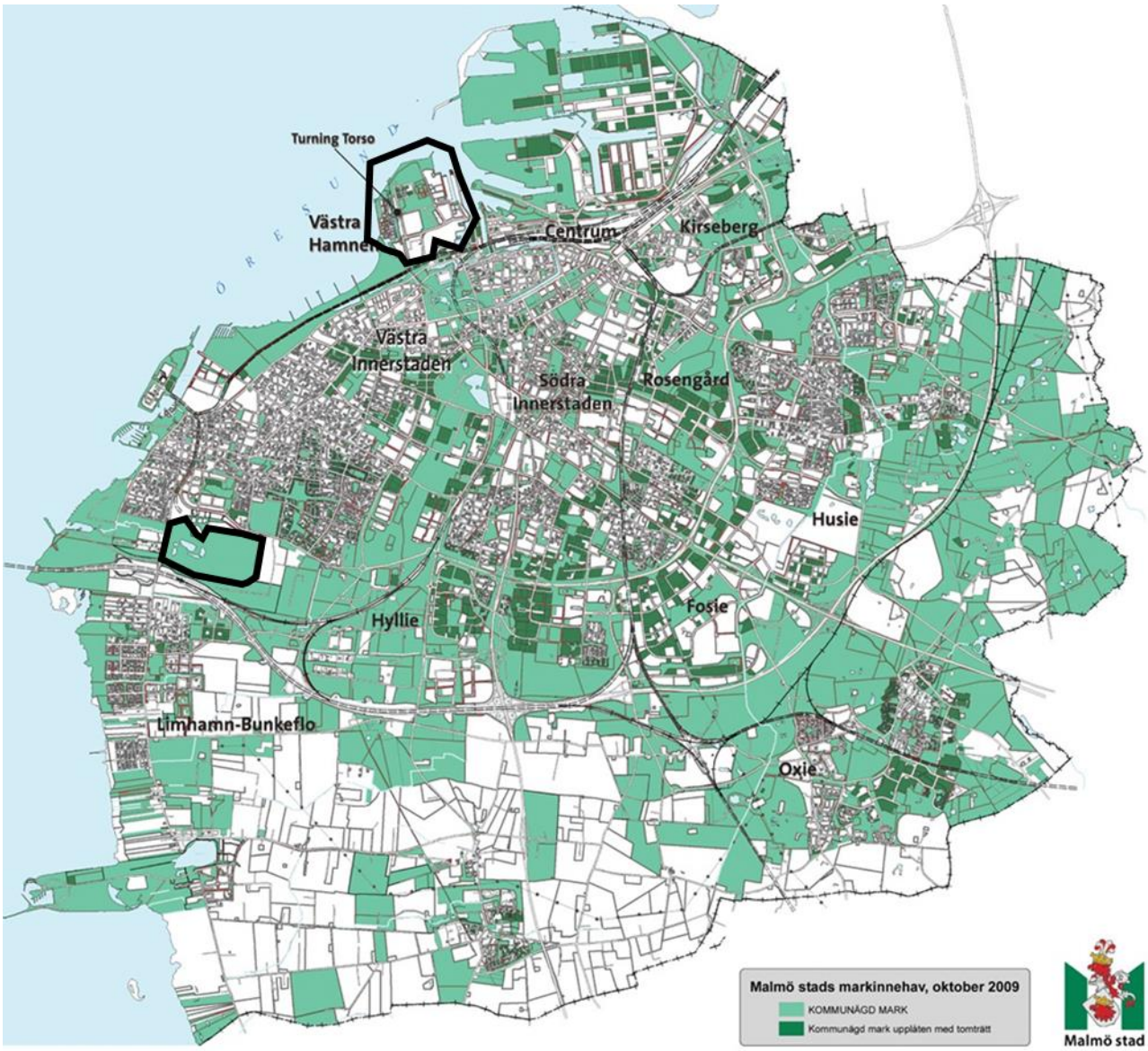
Appendix I

The locations of Västra Hamnen and Linhamn Quarry in Malmö.



City of Malmö and its neighborhoods (Source: Malmö, 2019c) with author's indications of project locations. This figure outlines the areas mentioned in the paper. 1 denotes the location of Västra Hamnen and 2 the location of Limhamn Quarry.

There are several key examples that are brought up in sustainable development in accordance to Malmö's transformation. These examples will be mentioned throughout the results and are worth noting as they often held up as prime examples of sustainable urban development. These projects are based on either environmental sustainability standards or the use of natural landscapes in the built environment.

When asked what the best example demonstrating the municipality's vision for a sustainable Malmö, Roger Westin, former urban planner for the city of Malmö, responded that Västra Hamnen (1) is often the project will show its visitors (R. Westin, personal communication, April 16, 2019). The Limhamn Quarry is the location of a case study of environmental gentrification done by Foster and Sandberg (2014). This area, a former limestone quarry, was transformed into a natural reserve commonly visited by residents and host to diverse biodiversity (Foster & Sandberg, 2014). The Limhamn Quarry is an example of the transformation of post-industrial landscape to an environmental amenity. The greening of this quarry represents two different phenomena. Sandberg (as cited in Foster & Sandberg, 2014) writes that the "scenic properties of the quarry are part of the City's [Malmö] efforts to attract capital and skilled and educated workers" (p. 1046). This can be seen through the rise high-priced housing and rental developments in the area. However, there is another side that presents the quarry as a harbor for rare flora and fauna and therefore, there is a fervent push from city ecologists to develop the area as a natural preserve (2014, p. 1046). These are a few examples that appear often in the city's sustainable urban development material and with a lot of scholarly research on Malmö and its post-industrial transformation as well as the link between socio-economic status and environmental sustainability.

Appendix II

Creation of Urban Space

At the beginning, the creation of the urban expands into the country and dominates the nature. This means that the urban form extends into the land around it and often converts the country to industrial and urban land (Elden, 2004, p. 133). Urbanism, or planning, is under the role of the state and those who are in charge of the planning are in charge of the housing construction, of towns, and how urbanization occurs (2004, p. 134). Here, Lefebvre discusses how easy it is to see planning as using technology to advance production in an a-political way. Elden highlights through his analysis of Lefebvre's work that "urbanism is able to portray the [urban] space it creates as objective, scientific, and neutral that it is able to hide its repressive character." (Lefebvre, 1970, p.239 as cited in Elden, 2004, p. 145). This means that the planning itself can look passive but those in power to plan have interests underlying their actions.

Holgersen writes something similar when comparing Jessop's work on state power to state planning, the author argues that planning should not be ahistorical because "it must be understood as a complex social relation that 'reflects the changing balances of forces in a determinate conjecture'" (Jessop, 1990, p. 170 as cited in Holgersen, 2014, p. 289). These analyses help demonstrate why scholars set out work on critical studies of urban planning.

Appendix III

Revised Green Plan

The previous Green Plan for Malmö was adopted in 1984 by city council and the updated version was published in 2003. The report states that its inclusion was meant to be in the Comprehensive Plan in 2000 but that due to resources, only parts of the plan were adopted into the overview and the other suggestions were published for review in 2003. Parts of the green model can be found in the 2014 Comprehensive Plan, such as the green space connection network. The green plan "is a municipal-wide planning documentation that analyzes present development proposals for the municipality's green environments based on a recreational and biological starting point" (Malmö, 2003, p. 1). The plan outlines targets instead of action tasks that cover both recreational and biological content of 'green values (2003, p. 1). This work is not to stand on its own but guidelines for physical planning to be considered with other interests.

The general goals for green space are to increase of the green areas and also protect green areas from exploitation (2003, p. 12). The recreational goals are related to providing a diverse set of green areas as well as creating a green network where all green areas are accessible to each other. The biology goals are associated with biodiversity and focusing on the diversity of green spaces in terms of landscape (2003, p.12). Where housing is concerned, the plan expresses the need of building green school yards and residential buildings (2003, p. 12) to increase the proportion of green in the city.

Comprehensive Plan 2014 for Malmö

Since the work of Holgersen et al. and other authors on Malmö have written about the city's urban development, the city has adopted two new Comprehensive Plans. First the 2014 plan will be discussed as it has had an immense impact on urban development, and it has been referenced in other research.

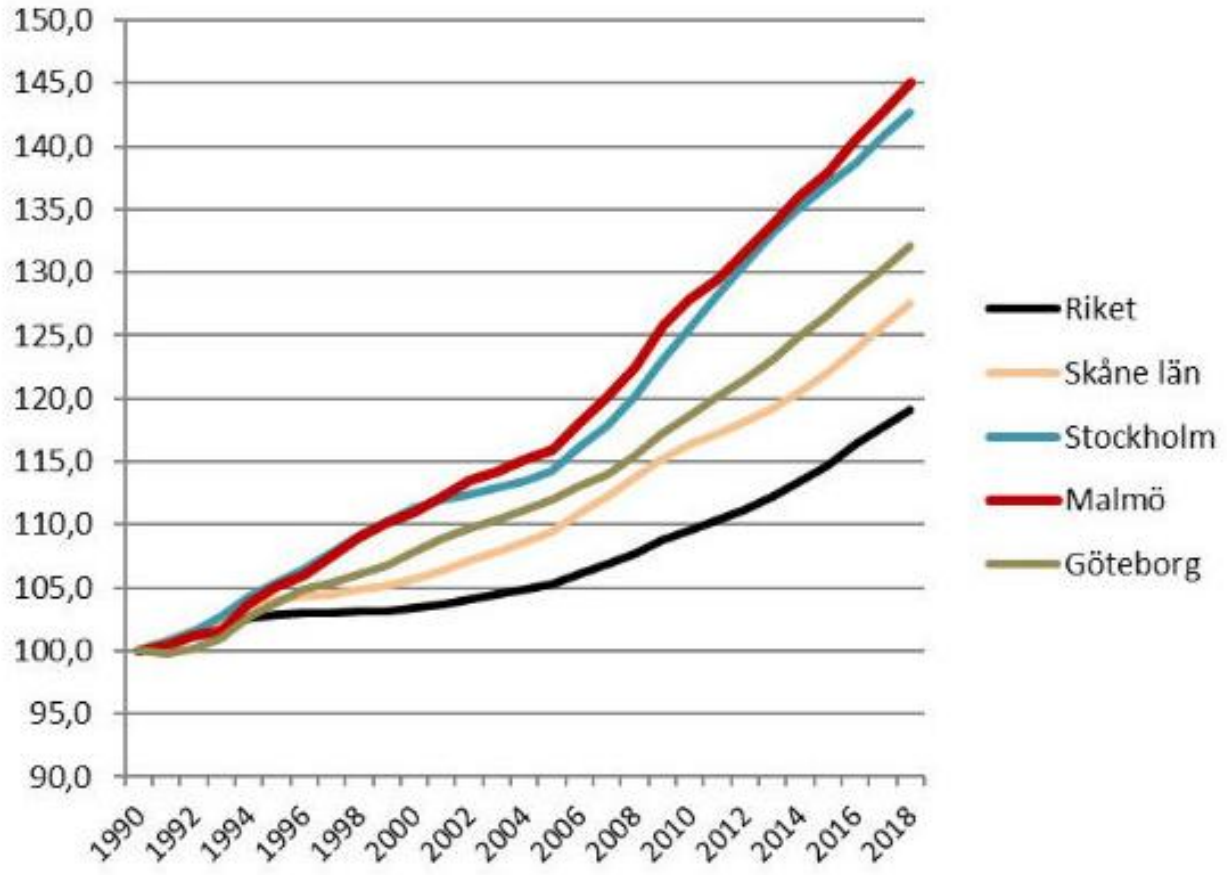
The 2014 master plan outlines the city's development plan well into the 2030s (Malmö, 2014a). Economic, environmental, and social sustainability are still highlighted as the pillars of the city's development and uses them to focus on multiple challenges in the way of maintaining a growing city with good living conditions (2014a). Its goal, as a strategic document, is to aid municipal decisions "to create a more sustainable Malmö" (2014a, p. 2). It highlights the influence the document will have on other actors willing and wanting to engage with the city development. The Comprehensive Plan directs the planning for three development policies, first being 'a mixed-function dense, green, and close city',

then Malmö being ‘a regional generator of green growth and employment’, and the third policy being the city as a cultural and democratic arena’ (2014a) (see Table 1).

Each of these three targets are then separated into different tasks, all quite related to the planning and urban spaces. Below, table 1 outlines the priorities for the 2014 updated Comprehensive Plan. The plan can be found on the city of Malmö’s ‘Sustainable Urban Planning in Malmö’ website under the description of a ‘master plan… to create a sustainable and attractive city—…” (Malmö, 2016).

Appendix IV

Population Growth in Sweden and Main Cities (1990-2018)



Population growth 1990 - 2018. Index 1990 = 100. Source: Statistics Sweden

The graph above demonstrates the population growth of three major Swedish cites (Goteborg, Malmö, and Stockholm). As per the city of Malmö, Swedish metropolitan areas accounted for "78% of Sweden's total population increase [between the years of]1990-2018". The yellow line (Skane Ian) denotes the Skane Region and Riket is the "kingdom" or country of Sweden. Source: (translation, Malmö City, 2019b).

Appendix V

The figure below (Source: Holgersen & Malm, 2015, p. 281) lists the environmental awards the city has been awarded from 2007 to 2013. Following along the relevancy of the awards, recent nominations are detailed on Malmö's website but do not follow the same relevancy (Malmö, 2017a).

Third Greenest city in the world, 2013 (by Mother Nature Network)
Finalist for the European Green Capital, 2012 and 2013
Earth Hour Capital, 2011 (by WWF)
Third most environmentally friendly city in Europe, 2011 (study by Economist Intelligence Unit commissioned by Siemens)
First winner of the Nordic Sustainability Price, 2011 (by Idébanken)
Winner of the Intermodes Prize, 2011 (as part of Oresund Region) (by AEBR)
Honoured a seat at the Urban Best Practices Area at Expo 2010 in China
Recipient of the World Habitat Award, 2010
The World Green Building Council's BEX Award, 2009 (for best master plan, with special compliments to the Western Harbour)
'Scroll of Honour 2009' (for its 'innovative and holistic approach to becoming a 21st century eco-city') (by UN-Habitat)
Global District Energy Climate Awards, 2009
European Fleet of the Year Award from the Green Fleet Award, 2009
Honourable Recognition at the Globe Award, 2009
Fourth "greenest city in the world", 2007 (by Grist.org)
Bo01 used as "Role model" in State of the World report, 2007