

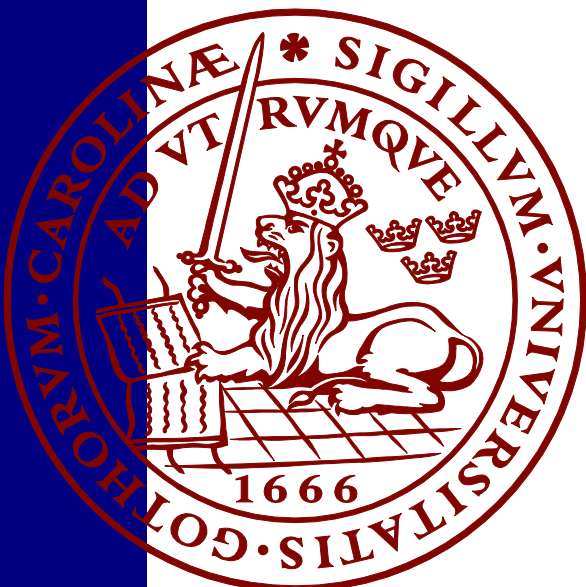
Love Thy Neighbor: Social Sustainability Assessment in Built Environments

The Case of The Greenhouse Project in Augustenborg Ecocity,
Malmö, Sweden

Reena A Q Naser

Master Thesis Series in Environmental Studies and Sustainability Science,
No 2020:018

A thesis submitted in partial fulfillment of the requirements of Lund University
International Master's Programme in Environmental Studies and Sustainability Science
(30hp/credits)



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Lund University Centre for
Sustainability Studies



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Abstract:

Although one of the three pillars of the sustainability triad beside the economic and environmental, Social Sustainability (SS) is the least studied and researched. Since its definition, measurement and operation are subject to different interpretations, SS tends to be undertheorized and sometimes overlooked. This explorative case study investigates the SS aspects of the small community of the Greenhouse Project, situated in Malmö's Augustenborg Ecocity. The latter is viewed as a sustainable landmark in terms of environment, economy, and social inclusion within a sustainable regenerated urban development. This research focuses on the non-physical intangible social aspects of sustainability in the built environment of the Greenhouse community, apart from its ecologically friendly high-tech features. The study aims to firstly assess the SS aspects in the Greenhouse project and secondly come up with SS best practices within the Greenhouse project.

To better understand the SS aspects in the microscale of the Greenhouse Project, Shirazi & Keivani's conceptual framework is employed, drawing on its soft infrastructure aspects such as equity, social inclusion, interaction, participation, safety, and livelihood. To explore the social dynamics amongst neighbors, qualitative research is performed on both actors: MKB and the Greenhouse tenants.

Study results demonstrate high levels of affinity, connectedness, and networking amongst neighbors, proving to be in line with the Nordic Housing Model concept. In conclusion, new environmentally sustainable housing developments do not need to be less friendly or sociable. Instead, they can become strong sustainable communities, places for people to live and interact while feeling a sense of belonging, well-being, and high quality of life.

Keywords: Sustainable Community, Sustainable Urban Development, Social Inclusion, Social Equity, Social Capital, Soft Infrastructure, Nordic Housing Model.

Word Count: 11,999

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Table of Contents

| | |
|---|-----------|
| 1. Introduction..... | 9 |
| 1.1. The Problem..... | 9 |
| 1.2. Relationship to Sustainability Science..... | 11 |
| 1.3. Aims and Research Questions..... | 12 |
| 1.4. Thesis Structure..... | 13 |
| 2. Setting the Scene: The Greenhouse Project in Augustenborg Ecocity..... | 14 |
| 2.1. Urban Sustainability, Urban Regeneration Developments and Ecocities..... | 14 |
| 2.2. Why Augustenborg?..... | 15 |
| 2.3. The Greenhouse..... | 17 |
| 3. Theoretical Framework..... | 19 |
| 3.1. Understanding Sustainable Communities..... | 19 |
| 3.2. Shirazi & Keivani’s Theoretical Framework (SS Triad)..... | 20 |
| 4. Methodology..... | 24 |
| 4.1. Literature Review | 24 |
| 4.2. Qualitative Research Process: Interviewing Actors from Greenhouse & MKB..... | 25 |
| 4.3. Data Interpretation..... | 27 |
| 4.4. Limitations and Challenges..... | 29 |
| 5. Results, Findings and Analysis | 29 |

| | |
|---|----|
| 5.1. Social Mix (Neighbors)..... | 29 |
| 5.2. SS Aspects (Neighboring) in the Greenhouse | 30 |
| 5.2.1. <i>Equity</i> | 31 |
| 5.2.2. <i>Democracy, Participation and Civic Society</i> | 32 |
| 5.2.3. <i>Social Inclusion</i> | 33 |
| 5.2.4. <i>Social Networking, Interaction and Community Project Support</i> | 33 |
| 5.2.5. <i>Livelihood and Sense of Place</i> | 34 |
| 5.2.6. <i>Human Well-Being</i> | 35 |
| 5.3 Threats and Challenges to SS Aspects in the Greenhouse | 35 |
| 5.3.1. <i>Safety and Security</i> | 35 |
| 5.3.2. <i>Tenants' Mobility & Stability</i> | 36 |
| 5.4. What Worked Well in the Greenhouse | 37 |
| 5.4.1. <i>Availability and Accessibility of Physical Space for Activities</i> | 37 |
| 5.4.2. <i>Speedy and Excellent Maintenance of Services & Amenities</i> | 38 |
| 5.4.3. <i>Democratic Governance Structure</i> | 38 |
| 5.4.4. <i>Community Collective Groups and Networks Supported by MKB</i> | 39 |
| 5.4.5. <i>Quality of Home, Neighborhood and Life</i> | 39 |
| 5.4.6. <i>Sense of Attachment and Belonging</i> | 40 |
| 5.5. What Did NOT Work in the Greenhouse Experience? | 41 |
| 5.5.1. <i>Lack of Integration with Augustenborg Residents</i> | 41 |

| | |
|--|-----------|
| 5.5.2. <i>Wasted Area and Misused Space</i> | 42 |
| 5.6. Lessons Learned: Room for Improvement | 43 |
| 5.6.1 <i>Highlighting the Social Aspects of the Greenhouse</i> | 43 |
| 5.6.2 <i>Improved Area Usage for more Inclusive Collective Activities</i> | 43 |
| 5.6.3. <i>Social Integration and Cohesion between Greenhouse and Augustenborg Residents</i> | 43 |
| 5.6.4. <i>Mending Existing Augustenborg Neighborhood before Constructing New Green Buildings</i> | 44 |
| 6. Discussion | 44 |
| 6.1. Interpretation of Results and Findings..... | 45 |
| 6.2. Implications of Findings | 49 |
| 6.2.1. <i>Best SS Practices in The Greenhouse</i> | 49 |
| 6.2.2. <i>Plausible Pathways</i> | 51 |
| 7. Conclusions and Future Studies | 53 |
| 8. References | 55 |
| 9. Appendices | 61 |
| 9.1. Appendix 1. Aerial View of Augustenborg Ecocity Sustainable Features – Malmö..... | 62 |
| 9.2. Appendix 2. Social Concepts Adopted in the SS Debate..... | 63 |
| 9.3. Appendix 3. Shirazi & Keivani’s Original Framework Definitions of Soft Infrastructure (Neighboring) Measures..... | 64 |
| 9.4. Appendix 4. List of Interviewees..... | 65 |

List of Names, Definitions, Institutions and Abbreviations:

BSHF: Building and Social Housing Foundation

EIA: Environmental Impact Assessment

LIP: Local Investment Program

m²: Squared Meter

Malmö Stad: Municipality of Malmö

MKB: Housing Operator and Realtor, owned by Malmö Municipality

PPP: Public Participatory Planning

SD: Sustainable Development

SS: Social Sustainability

SEA: Strategic Environmental Assessment

THE "HOUSE": Reference to The Greenhouse

WECD: World Commission on Environment and Development

List of Figures:

| | |
|---|----|
| Fig. 1. The Sustainability Triad..... | 10 |
| Fig. 2. Study Aims..... | 12 |
| Fig. 3. Study Research Questions..... | 13 |
| Fig. 4. Map of Augustenborg Ecocity in Malmö..... | 15 |
| Fig. 5. Aerial View of the Greenhouse within Augustenborg Ecocity | 17 |
| Fig. 6. Greenhouse Bi-Climatic Balcony Cultivation Garden..... | 18 |
| Fig. 7. Greenhouse 3 rd Floor Roof Garden | 18 |
| Fig. 8. Sustainable Community..... | 20 |
| Fig. 9. Traditional Ontological vs. Emerging Epistemological SS Themes..... | 21 |
| Fig. 10. SS Triad in Urban Neighborhoods | 22 |
| Fig. 11. Interviewing Process..... | 25 |
| Fig. 12. Types of Conducted Interviews | 27 |
| Fig. 13. Actors' Role in Fostering SS in the Greenhouse towards a Strong Sustainable Community..... | 47 |
| Fig. 14. SS Aspects Fostering Strong Communities in Built Environments..... | 48 |

1.Introduction

1.1. The Problem

According to the UN Habitat, over 50% of the world population lives in urban settings, with a future projection increase to around 60% by 2030, as per the New Urban Agenda¹ (Caprotti et al., 2017; Bruckner 2018). While more people settle into cities worldwide and especially in western Europe, the urbanization process is becoming more challenging. As a solution to minimize the negative impacts of urbanization, the trend to create area regenerating projects surfaced out as early as the 1970's (Caprotti et al., 2015; Joss, 2011), highly considering the socio-economic as well as the environmental wellbeing (Riccardo & De Matteis, 2011). Consequently, many Ecocity projects have emerged worldwide in the past few decades as adaptive solutions to climate change impacts and some of the subsequent alarming environmental risks (Caprotti et al., 2015; Joss, 2011).

Sustainable Development (SD) became marked following the Brundtland Report (WECD, 1987), which outlined that today's action should not compromise the future. Sustainability then was pronounced as encompassing all three environmental, economic and social dimensions, constituting what is called the "Sustainability Triad" (Dixon, 2011, p.3). Some scholars go as far as calling it the three 'E's: Economy, Ecology and Equity (Opp & Saunders, 2013). SD became a strongly active discourse in Europe, following the 1992 United Nations Earth Summit in Rio da Janeiro. (Köckler et al., 2017).

¹ UN Habitat III Conference in 2016 held in Quito adopted the NEW URBAN AGENDA and Sustainable Development Goal 11 for the first time with a global focus on cities committing to global urban policies.



Fig. 1. The Sustainability Triad (Source: Dixon, 2011, p. 3)

Social dimension, later referred to as Social Sustainability (SS), is considered the third pillar of sustainability (Colantonio, 2009; Shirazi & Keivani, 2017), yet it is subject to multiple interpretations and is given the least consideration out of the three pillars (Vallance et al., 2011; Dempsey et al, 2011) to the point of being “oversimplified and undertheorized” (Colantonio, 2009, p. 866). In this research, I study the post occupancy SS aspects in the Greenhouse Project, a building situated within the regenerated Ecocity of Augustenborg in the Southern Swedish city of Malmö. The ‘House,’ as it is called by the study participants, which was finished and inhabited in the year 2016, is the recent addition to the Augustenborg Ecocity. (MKB Fastighets AB, n.d.).

The Greenhouse is described by MKB² as “*the most sustainable building project in all of Sweden*” (MKB Fastighets AB, 2015, p. 2). Despite its highlighted technological and environmental sustainability features, SS aspects of the project had not been fully communicated to the potential tenants in the pre-occupancy stage. The reason for choosing

² MKB: Public Housing Operator and Realtor of Augustenborg and the Greenhouse, owned by Malmö Municipality.

Augustenborg Ecocity is out of personal interest in Urban Planning Development. My professional background in design and build projects, as well as engineering project management motivated me to further explore sustainable urban planning, especially the Swedish Ecocities. Although the SS aspects have always been intriguing to me, nonetheless they were non-existent in my previous practical experience, which stimulated my curiosity to investigate them further. From the outside, the Greenhouse seemed like a cold, distant and unfriendly high-tech green building therefore, motivated me to explore its social dimensions and residential politics.

1.2. Relationship to Sustainability Science

In spite of being under explored as a pillar of sustainability, much more attention has been given to SS in recent years, especially with the increasing number of urban regeneration and SD projects worldwide. Social issues in the built environment³ have long been the object of debate within many disciplines, even before the concept of Sustainable Development (SD) was coined (Shirazi & Keivani, 2019b). Global mainstreaming of SD followed the release of the Brundtland Report (WECD, 1987), which led many scholars to include the social dimensions under the umbrella of SS with the following multi-disciplinary social concepts⁴: Social Equity and Justice, Social Capital, Social Cohesion, Social Exclusion/ Inclusion, Environmental Justice, Quality of Life and Urban Livability (Shirazi & Keivani, 2019b). Despite challenges with this lack of consensus on SS in theory and operation (Shirazi & Keivani, 2017), social cohesion, capital, and inclusion as well as high quality of life are perceived as pleasant features of life. (Dempsey, 2008, 2009).

This study will only be concerned with the subjective, non-physical and intangible soft concepts of SS like sense of place, feeling of safety, social interaction and well-being (Colantonio, 2009); identity, sense of belonging, happiness and social networks (Shirazi & Keivani, 2017). Acknowledging the extent of the multidisciplinary umbrella that SS encompasses, I distance

³ Built environment: Man-made surroundings providing the setting for human activity, including buildings and parks while ranging in scale from neighborhoods to cities. They can include services and infrastructure. They form the stage for daily life activities with multiple factors like physical, spatial, and cultural. (Huston, 2018).

⁴ Refer to 9.2. Appendix 2. Social Concepts Adopted in the SS Debate (Shirazi & Keivani, 2019b).

myself from researching the conventional tangible aspects of SS related to employment, poverty, and basic needs. In addition, any comparative study of SS or social interaction, cohesion, or integration between Greenhouse tenants and Augustenborg Ecocity inhabitants is delineated as out of this research scope.

1.3. Aims and Research Questions

The first aim of the study is to assess the existing SS aspects in the Greenhouse Project, through exploration of the social dynamics among the tenants. The second aim is to formulate and recommend best SS practices in the Greenhouse for the future, based on study findings from actors' perspectives as well as the researchers' conclusions.

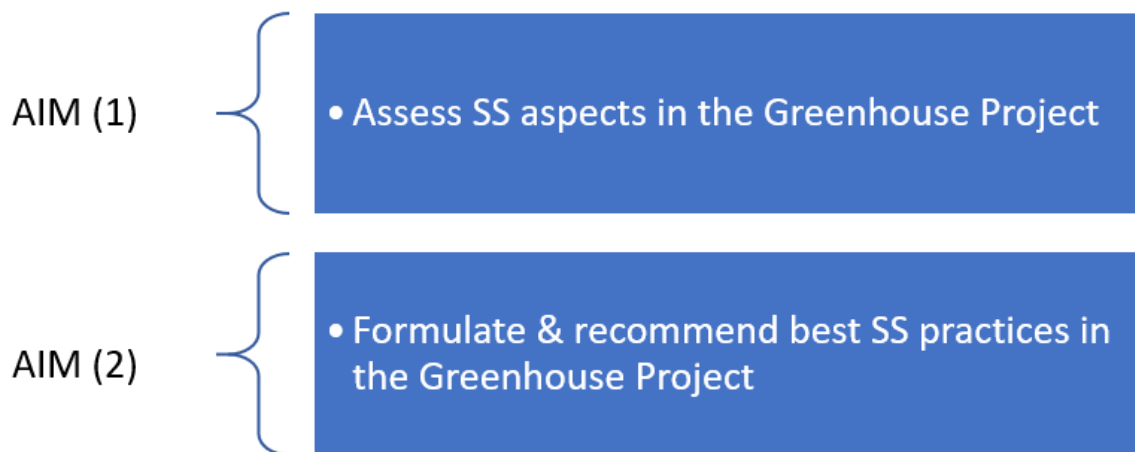


Fig. 2. Study Aims (Author's Own Illustration)

SS brings out the need to assess the unmeasurable, questioning the intangible matters and asking very subjective questions, from the experiences and perceptions of all actors. Accordingly, the following **Research Questions** should help us understand the problem and pave the way to conduct this study:

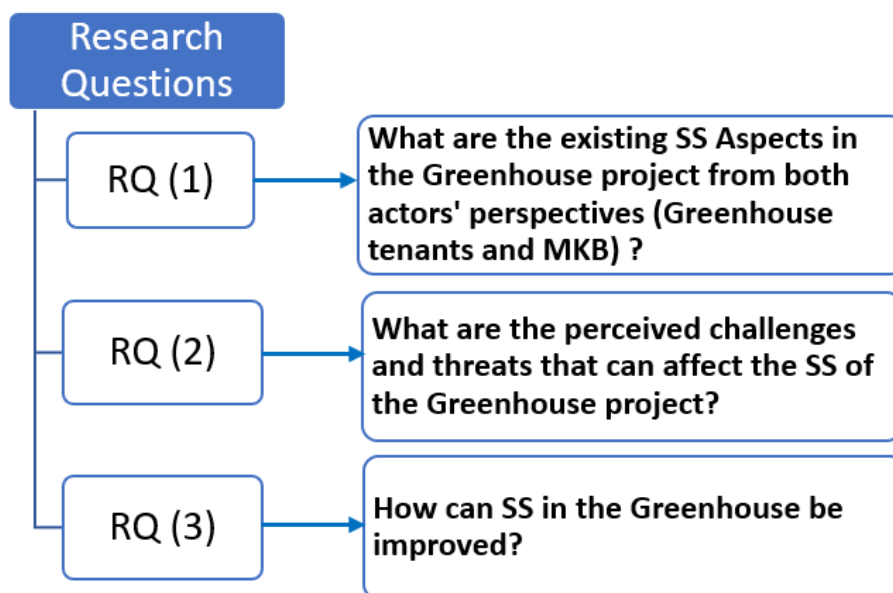


Fig. 3. Study Research Questions (Author's Own Illustration)

1.4. Thesis Structure

Beginning with problem definition and its relation to sustainability science in this **first** chapter, the **second** chapter focuses on setting the scene. Starting with exploring the evolution of Urban Sustainability, Urban Regeneration Developments and Ecocities, exhibiting the history of Augustenborg and displaying the Greenhouse Project.

The **third** chapter shows the theoretical framework to evaluate the SS aspects in the Greenhouse Project. The **fourth** chapter demonstrates the Qualitative Research Methodology in line with the Theoretical Framework.

The **fifth** chapter presents study results, findings and analysis of SS aspects in the Greenhouse, outlining the challenges and threats, success and shortcomings of SS aspects in the Greenhouse. Later, lessons learned for future improvement are offered, from actors' perspectives. The **sixth** chapter discusses findings interpretations and implications on both actors and Sustainability Science in addition to best SS practices for the Greenhouse and plausible future pathways. The **seventh** chapter concludes the study with future research potentials.

2. Setting the Scene: The Greenhouse Project in Augustenborg Ecocity

2.1. Urban Sustainability, Urban Regeneration Developments and Ecocities

The Sustainable Development (SD) concept started in the 1960's and 1970's in reaction to worldwide escalating environmental, economic and social challenges, resulting from industrialization and a drop in cities' quality of life. (Whitehead, 2003). Issued in 1987 by the World Commission on Environment and Development (WECD, 1987), The Brundtland Report is the turning point where SD becomes universally recognized (Wheeler, 2013). Since half the world population lives in urbanizations (Caprotti et al., 2015), cities are the largest natural resource consumers and biggest waste producers (Joss et al., 2015). Accordingly, urbanizations play a big role in finding solutions to face the gravity of environmental challenges (Lehmann, 2019).

For existing developments, sustainable regeneration projects started earlier in the 1960's and 1970's as a reaction within the environmental movement. In the 1990's⁵, a wave of new ecocities construction was instigated here and there in the developed world, alongside urban sustainable initiatives, as adaptive measures to combat environmental degradation, until they became a mainstream phenomenon in the 2000's (Joss et al., 2015). While Urban Regeneration relates more to already existing infrastructure that underwent environmental and economic decline (Egan et al., 2015, p.101), it usually takes a restorative redevelopment approach attempting to increase urban resilience by reconciling cities, nature, biodiversity, and ecosystems. This is especially the case when relying on re-greening to increase the natural capital and make cities healthier (Lehmann, 2019). It is believed that nature-based solutions can even re-emphasize cultural identities through a high sense of belonging. (Pellegrini & Baudry, 2014).

Ecocities incorporate innovative technologies to assist in reducing natural resource burnup as well as human waste accumulation. They often resort to smart solutions for wise water, energy, and waste management, while savoring a high quality of life within a participatory governance (Joss et al., 2015). Accordingly, the Smart City concept can be outlined as a fusion

⁵ Following the Brundtland Report in 1987 and the UN World Summit in Rio da Janeiro in 1992.

between soft and hard infrastructures.⁶ (Caragliu et al, 2011; March & Rivera- Fumaz, 2016). Nonetheless, in the past two decades, due to the gravity of the climate change impacts and severity of environmental degradation, the phenomenon of ecocity has become global and mainstream. (Joss, 2011).

2.2. Why Augustenborg?

Augustenborg, a development with over 1600 apartments, was built between 1948 and 1952 in Fosie, a neighbourhood in the south east part of Malmö (See map below). It is an Ecocity within an urban regenerated development.

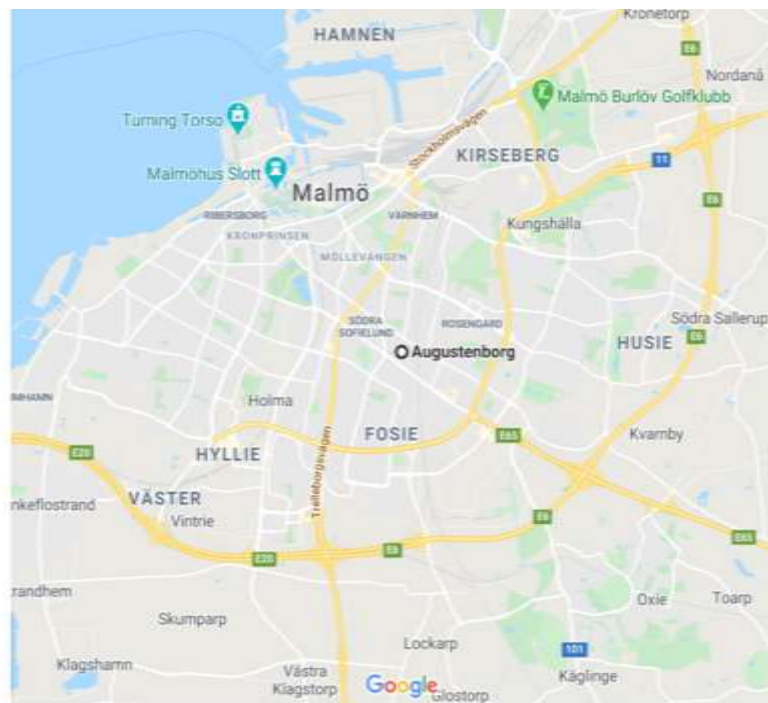


Fig. 4. Map of Augustenborg Ecocity in Malmö

(Source: Google Maps <https://www.google.se/maps/@55.5840955,12.9955681,13.07z>)

The area is an early example of “neighborhood planning” (Aunér, 2010), in line with the Nordic Housing Model. In its urban planning policies and agendas, the state⁷ adopted the Nordic

⁶ Soft and hard infrastructures will be explored in more details in chapter 3. Theoretical Framework.

⁷ Malmö Stad (Municipality) is the owner of the project. The management and operation are undertaken by the Public Housing Operator MKB.

Welfare system, typified by simple design and centered around the neighborhood concept of mixed housing (Tunström, 2019). As per the Nordic Housing Model, civic society is a key player, thus fostering local democracy and allowing for public participatory planning (PPP) (Borges et al., 2017; Ibsen & Habermann, 2005), while ensuring the inclusion of children, elderly and the disabled (Björk, 2014). In addition, the model puts a strong emphasis on area-based initiatives to nurture interaction with the built environment and reduce segregation. (Tunström et al., 2016). In terms of amenities, everything the residents need in a neighborhood is provided for from school, preschool, to business and industrial area, amongst others. (Aunér, 2010; “Ekostaden Augustenborg” [Malmö stad], n.d.).

When this area was built, it was up-to-date and attracted the attention of city planners as a good example of urban planning. However, by the end of the 1990s, Augustenborg had moved from an avant-garde neighborhood into a washed-out area in dire need for renewal. (Aunér, 2010). Consequently, it became less popular, with emerging socio-economic problems, added to its neglected maintenance and serious flooding problems. The regeneration project was eventually started in 1998. (Aunér, 2010; “Ekostaden Augustenborg” [Climate ADAPT], n.d.).

Augustenborg is one of Sweden’s biggest sustainable urban developments, sponsored by the government’s Local Investment Program (LIP), financed and operated by the public housing and operator company MKB, which is owned by the City of Malmö (“Ekostaden Augustenborg” [Malmö stad], n.d.). From the beginning of the regeneration development, it aimed to create a sense of social inclusion and cohesion. Augustenborg’s environmental regeneration boasts a unique open stormwater drainage system, green roofs, greenhouses, and green outdoors spaces (“Ekostaden Augustenborg, winner 2010”, n.d.). Today, an Ecocity with environmentally friendly solutions, is still an ongoing test area for Environmental Impact Assessment⁸ (EIA), seeking innovative environmental solutions, tested, and developed together with the residents. Perceived as a successful project encompassing ecological, economic and social sustainability (“Ekostaden Augustenborg, winner 2010”, n.d.), it was accoladed the World Habitat Award by the Building and Social Housing Foundation in 2010 (BSHF, 2010), described as one of the longest European regeneration projects.

⁸ Refer to 9.1 Appendix 1. Aerial Views of Augustenborg Ecocity Sustainable Features – Malmö

2.3. The Greenhouse



Fig. 5. Aerial View of the Greenhouse within Augustenborg Ecocity (Source: MKB Fastighets AB, 2018)

The Greenhouse Project was conceived out of a need for more housing units. Finished in 2016, it was built on the same parcel which previously housed the Augustenborg central coal fuel heating house. According to MKB, The Greenhouse is considered one of Sweden's most sustainable building projects ("En ekologisk höjdare i ...", n.d.). It houses 56 apartments of 2 and 3 bedrooms in the tall building, 4 and 5 bedrooms in the lower housing part. There are 12 apartments rented out to agriculture major students from SLU, aiming to enhance the social mix of tenants, as well as integrate mutual hands on experience between students and the residents. The Greenhouse's unique idea is based on the ability to cultivate one's own garden within the city apartment space. Added to that are the environmentally friendly solutions in energy and water saving, recycling technology, easy cycling paths and the ability to reduce consumption, amongst other green features. ("En ekologisk höjdare i ...", n.d.; MKB Fastighets AB, 2015). In the construction phase of this project, sustainable building materials were used. The Greenhouse apartments have 20m² balconies with 11m² of gardening area to

accommodate bi-climatic cultivation, extending the period of gardening. (MKB Fastighets AB, 2015, p. 3).



Fig. 6. Greenhouse Bi-Climatic Balcony Cultivation Garden (Courtesy of A. Timotej)

The 3rd floor roof terrace hosts a roof garden of approximately 200m², with a dome-shaped greenhouse that acts as an exotic crop nursery and a gathering point for neighbors. The 14th floor also offers opportunities for growing and cultivation. (MKB Fastighets AB, 2015, p. 2).



Fig. 7. Greenhouse 3rd Floor Roof Garden (Source: MKB Fastighets AB, n.d.)

The building apartments are equipped with e-meters, for individual consumption calculation and billing of hot water and electricity, also connected to the building's collective waste management sorting, laundry room and carpooling facilities (MKB Fastighets AB, 2015, p. 2). The building is energy passive and tenants can self-generate their own solar and wind produced electricity at considerably reasonable rates. All these technologies can be conducive

to conscientious environmental consumption behavior of water and energy (MKB Fastighets AB, 2015, p. 7).

In the basement lies the bicycle storage, as well as car-pooling and bicycle pooling facilities, available for reservation. One interesting aspect about the Greenhouse basement is that it only hosts 15 car parking spots, for environmental nudging to reduce car dependency. There is also a hydroponic cultivation shelf for a group growing activity. In addition, there is a bike kitchen with tools and instructions for bike fixing purposes.

3. Theoretical Framework

As a “concept in chaos” (Vallance et al, 2011, p. 342) the many interpretations of SS lead me to present a theoretical framework that will analyze this exceptional, explorative yet simultaneously descriptive case study⁹, with the objective of answering the research questions and concluding this research in relation to SS. However, before resorting to the theoretical framework, I need to establish the Greenhouse Project’s relation to the concept of sustainable community.

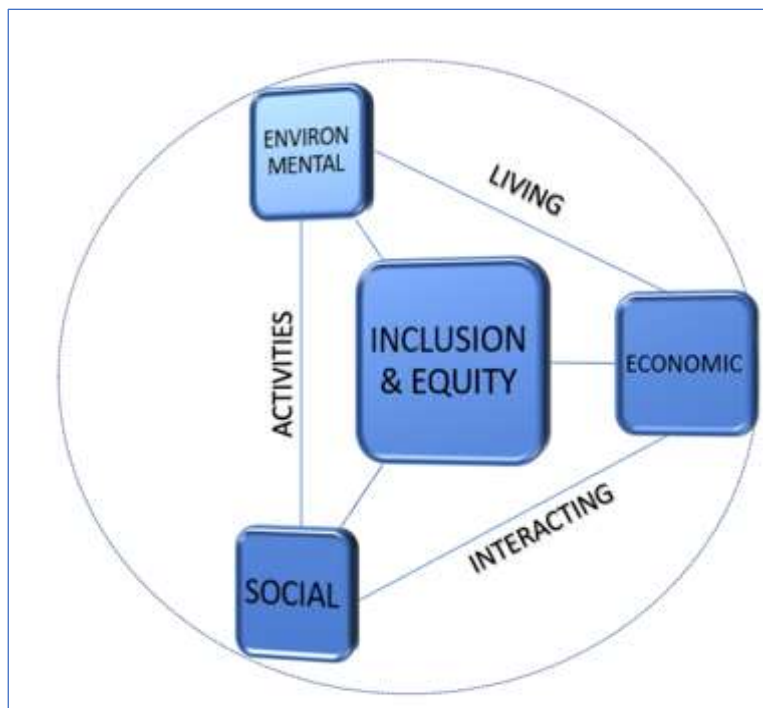
3.1. Understanding Sustainable Communities

In an urban setting, SS aspects of the built environment are best understood as divided into physical and non-physical categories (Dempsey et al., 2011; Woodcraft & Dixon, 2013). In the physical aspects, the social dimension relates to the neighborhood development in its quality of space, construction, facilities, amenities, and environment. The non-physical features relate to subjective¹⁰ aspects of the sustainable neighborhood like, social capital or interaction, inclusion or exclusion, justice, cohesion, safety, network, sense of community, participation and more.

⁹ According to Yin (2014), the descriptive part of a case study is concerned with providing thorough contextualized description of certain phenomenon, which in this case is the SS aspects.

¹⁰ Refer to 9.2 Appendix 2. Social Concepts Adopted in the SS Debate, for better clarification.

Sustainable communities are defined as accommodating long term human relations and activities based on equity and inclusion, without compromising the environmental, economic, or social features. They are places where people like to live and work (Dempsey et al., 2011, p. 290). Supported by features related to social equity and justice, the ‘sustainable community’ concept overlaps with that of ‘social sustainability.’ Sustainable communities meet all their needs and are generally sensitive to their environment, while contributing to a high quality of life (Dempsey et al., 2011). According to the Bristol Accord¹¹ (UK Presidency, 2005), sustainable communities are active, inclusive, safe, well planned, built, and managed, environmentally sensitive and offer equality and good service to all.



*Fig. 8. Sustainable Community
(Author's Own Illustration, Inspired by Dempsey et al., 2011, p. 290)*

3.2. Shirazi & Keivani's Theoretical Framework (SS Triad)

There has recently been a definite shift in SS key themes evolving from older traditional ontologies such as employment, poverty and basic needs towards emerging modern

¹¹ Sustainable European Communities draw on EU Initiatives such as Agenda 21, The Bristol Accord and The Aalborg Charter.

epistemologies of more intangible, less measurable themes such as identity, sense of place, happiness and social networks (Colantonio, 2009, p. 869). The move from hard to soft aspects, mirrors changing trends in social needs, while still facing challenges in theorizing and operating the SS aspects (Shirazi & Keivani, 2017, p. 1526; Boström, 2012, p. 3).

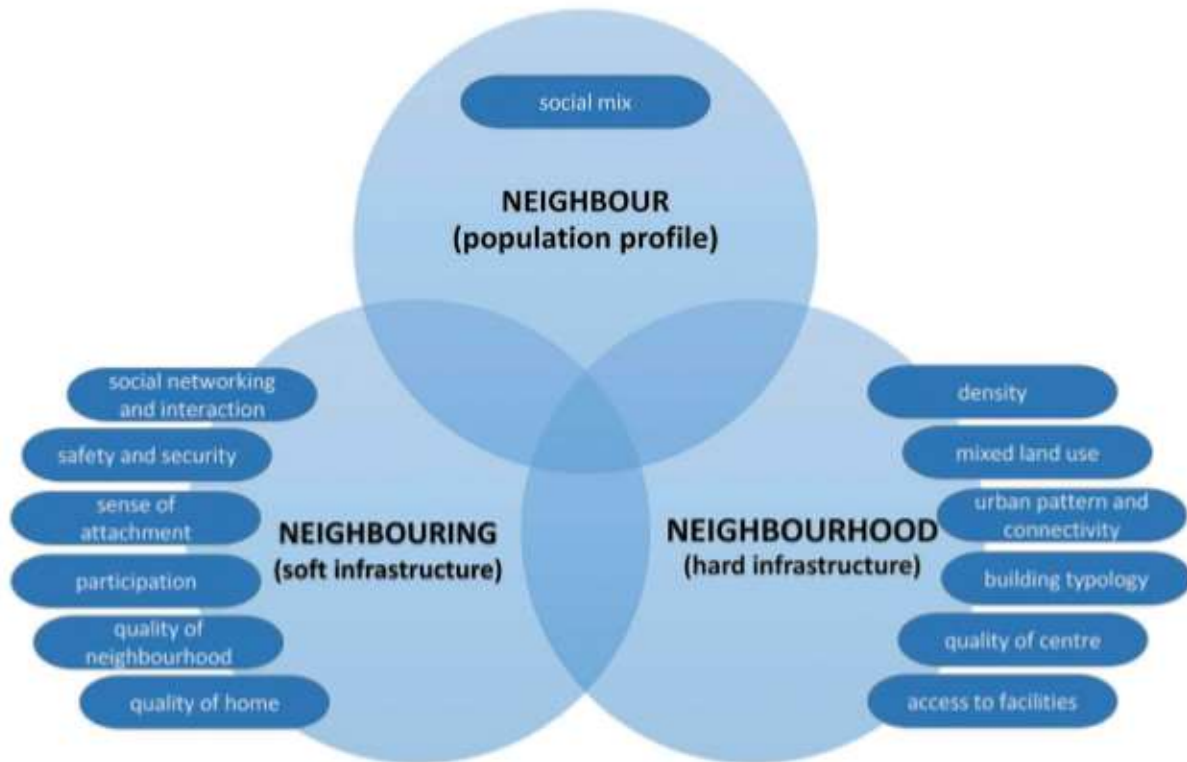


Fig. 9. Traditional Ontological vs. Emerging Epistemological SS Themes (Adapted from Colantonio, 2009, p. 873)

This study will only engage in the emerging epistemological SS definitions, by applying the Shirazi & Keivani (2019a) framework to assess the SS aspects within the Greenhouse project and consequently answer the research questions and study aims.¹² Lack of consensus on SS definition gives researchers flexibility in employing their relevant framework and indicators (Shirazi & Keivani, 2017). I choose the Shirazi & Keivani theoretical framework, which pivots on meta-analysis methodology that is comprehensive in evaluating the SS. Their framework devises the SS tripartite called SS Triad, to assess SS in urban neighborhoods. Based on the 3 following pillars: **Hard (neighborhood)** and **soft (neighboring)** infrastructures of the community, along with the social mix (**neighbors**). Another important factor in their

¹² Refer to part 1.3 Aims and Research Questions for Fig. 2. Study Aims and Fig. 3. Study Research Questions.

framework application is the scale, where in this study, it is related to the micro, local level of the Greenhouse. The below diagram best describes their framework (Shirazi & Keivani, 2019a):



*Fig. 10. SS Triad in Urban Neighborhoods
(Extracted from: Shirazi & Keivani, 2019a, p. 453)*

In the Greenhouse study, I put more emphasis on the soft infrastructure (neighboring) aspects as well as the social mix (neighbors), for relevance. Hard infrastructure (neighborhood) is not particularly pertinent to this research since its factors have already been accounted for within the Augustenborg Ecocity. The study will accordingly be mostly centered in the Neighbors and Neighboring pillars.

- a) **Neighbors:** is the profile of the people living in the neighborhood, also referred to as the social mix, identified as individuals, families and collectively.

The social mix refers to the diversity of socio-economic, cultural, ethnic, and household features of the neighborhood (Galster and Friedrichs, 2015). However, this study does not investigate demographic measures but instead, concentrates on the dynamics amongst the current Greenhouse tenants. For a long time, neighbors had been overlooked in SS studies,

while being a very essential constituent of the analysis in the SS debate (Shirazi & Keivani, 2019a).

b) **Neighboring**¹³ (Soft Infrastructure): entails the following aspects related to interaction amongst neighbors and their perceptions about their social environment. This pillar is alternately referred to as Social Capital.¹⁴

- **Social Networking & Interaction** entail social activities with the neighbors between two or more individuals. They involve verbal (conversation, debate, discussion) and non-verbal interaction (facial expressions, body language and gestures).¹⁵
- **Safety & Security** feeling secure, which is affected by threats and challenges
- **Sense of Attachment & belonging** refer to people's affinity towards their neighbors and sense of place towards their built environment.
- **Participation & democracy** relate to the involvement in activities with neighbors.
- **Quality of Greenhouse neighborhood** is the degree of satisfaction with the built environment and the neighborhood.
- **Quality of home** is the degree of satisfaction with both physical and non-physical qualities of their home.

c) **Neighborhood** (Hard Infrastructure): Although it is situated within the Augustenborg Ecocity, the Greenhouse is uniquely contained as an independent entity. Accordingly, most of the urban features such as street layouts, transportation and mixed land use considerations have already been accounted for within the development. All Greenhouse inhabitants have access to all Ecocity facilities, like the central square and all the services available to the rest of Augustenborg inhabitants. According to Dempsey et al. (2011), some researchers distinguish between neighborhood and community. In this research, *the Greenhouse building, and its spatial amenities will hereafter be identified as the Neighborhood. The community will hereafter refer to the Greenhouse*

¹³ Refer to 9.3. Appendix 3. Shirazi & Keivani's Original Framework Definitions of Soft Infrastructure (Neighboring) Measures.

¹⁴ Refer to 9.2. Appendix 2. Social Concepts Adopted in the SS Debate.

¹⁵ Experimental psychological research has unfolded new ways of human interactions, focusing on the sequence of events during social interaction, monitoring body language, gestures, etc. (Argyle, 2017).

neighbors, their neighborhood (building and facilities) and their neighboring social capital.

4. Methodology

According to Shirazi & Keivani (2019a), SS is comprised of soft and hard infrastructures and any SS study must be a combination of both quantitative and qualitative methods to be fully grasped in both physical (objective/ hard) and non-physical (subjective/ soft) factors. In my case study, I will only focus on the soft infrastructure, as the physical and hard infrastructure is irrelevant. Consequently, the research is qualitatively based, delving into the subjective matters, entailing interviewing relevant respondents from the two main actors: Greenhouse Project tenants and Public Housing Property Management MKB.

The methodology follows Shirazi & Keivani's (2019a) framework to assess SS aspects in the Greenhouse community, aiming to answer the research questions. Qualitative data is collected and constructed through 4 in depth semi-structured interviews with MKB officials, 1 introductory informal interview succeeded by another in-depth semi-structured interview with 1 Greenhouse couple. In addition to 1 focus group session composed of 7 participants from the Greenhouse residents, constituting 6 households.¹⁶ Data is accumulated, later categorized, analyzed, and interpreted into results and findings, leading to conclusions.

4.1. Literature Review

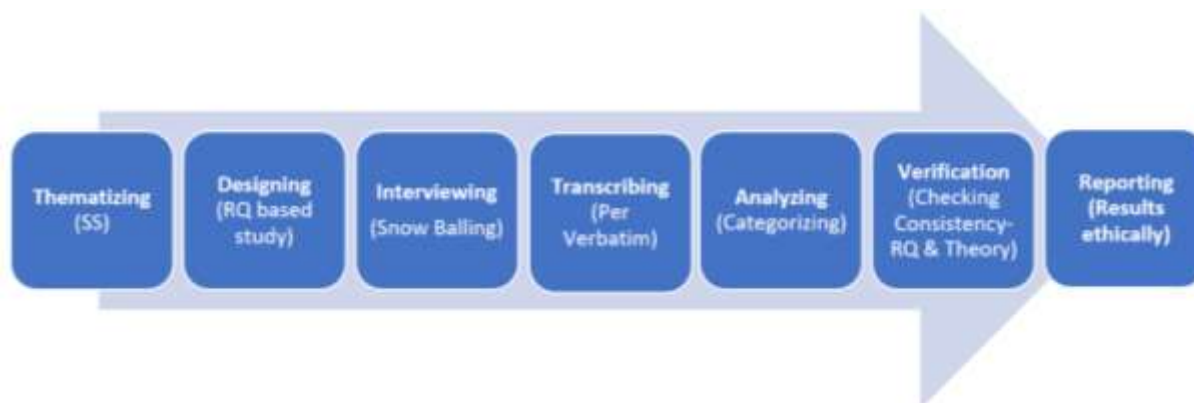
The first step before starting the qualitative research is to conduct a thorough literature review about the Greenhouse Project, Augustenborg Ecocity, Urban Sustainable Developments, Urban Regeneration Projects and Ecocities. Information is obtained from secondary data resources and literature through LUBsearch, Google Scholar and Academia search engines. Useful information about MKB policies and their sustainability visions, Greenhouse and Augustenborg historical background is obtained digitally from MKB's Strategic Sustainability Project Manager.

¹⁶ Forming approximately 9% of the total households.

4.2. Qualitative Research Process: Interviewing Actors¹⁷ from Greenhouse & MKB¹⁸

Research methodology is conducted in line with Tracy (2010, p. 839) where the qualitative research is based on: “(a) worthy topic, (b) rich rigor, (c) sincerity, (d) credibility, (e) resonance, (f) significant contribution, (g) ethics, and (h) meaningful coherence.”

I closely follow Kvale’s (2007, p. 18) qualitative research methodology process in: (1) **Thematizing**, in this case is SS, (2) **Designing** research questions based on the theoretical framework, (3) **Interviewing** process mainly achieved through snow-bowling, (4) **Transcribing** done per verbatim, (5) **Analyzing** by categorizing first the interview contents, (6) **Verification** of findings by checking for consistency of results from both actors and (7) **Reporting** where results, findings and analysis are drafted ethically and coherently.



*Fig. 11. Interviewing Process
(Author’s Own Illustration Based on Kvale, 2007, p. 18)*

Following the flow of discussion during the interviews, I sometimes deviate from the written questionnaires and allow for respondents’ elaboration. (Cohen & Crabtree, 2006a). The interviews are conducted in the following manner (Tracy 2010; Booth et al. 2016; Byrne, 2016):

- Two in-depth semi-structured interviews with MKB officers, Social Life Developer and Area Responsible/Real Estate Manager. These two Interviews snow-balled into the following others, through leads on potential interviewees. Questions to interviewees were based on the initial research questions set at that time (Kvale, 2007).

¹⁷ Refer to 9.4. Appendix 4. List of Interviewees.

¹⁸ DISCLAIMER: Greenhouse tenants and MKB here refer only to respondents interviewed as actors from both sides and only stand for the interviewees in their person, not their company nor entity. Obtained information represents their individual opinions, experiences, perceptions, and observations.

- One introductory informal interview (Cohen & Crabtree, 2006b) with Greenhouse couple A. & O. Timotej. I was received in their apartment and graciously given a guided tour around the Greenhouse. Through observation, a preliminary understanding of the Greenhouse Project specifics was obtained (Cohen & Crabtree, 2006b). The couple volunteered to organize a focus group the following week.
- One Focus Group session with 7 Greenhouse Project tenants, selected by the Tomotejs and consisting of the most socially active and available neighbors within the community. The session was very dynamic, engaging, and beneficial in providing significant detailed information from respondents' interaction about the lifestyle, social dynamics, and sense of community in the Greenhouse. (Cohen & Crabtree, 2006c). The session also shed light on MKB's valuable involvement in fostering the 'House' 's social networks. However, being active members of the neighborhood might have caused bias towards more positive outcomes.
- In-depth semi-structured interview with MKB's Strategic Sustainability Project Manager. Full details were captured then about the role of MKB in enhancing the SS of the Greenhouse Project.
- In-depth semi-structured interview with A. & O. Timotej couple from the Greenhouse, related to sense of community within the 'House'. The couple detailed the nature of the neighbors' social networking, in addition to their future aspirations for SS at the Greenhouse. Without their assistance, this qualitative research would not have been possible.
- In depth online (zoom) semi-structured interview with MKB Sustainability Project Manager who shared pertinent information about MKB's efforts in incorporating SS from the beginning of the project and their direct involvement with the Greenhouse tenants.

The interviewing process is conducted according to Byrne (2016), starting with presenting myself and my scope, showing official documentation from LU attesting to my student status. Later, respondents' signatures on the informed consent forms were obtained. Only 2 respondents wished to remain anonymous, 2 objected to being photographed, while all respondents unanimously consented to being voice recorded during the interviews.

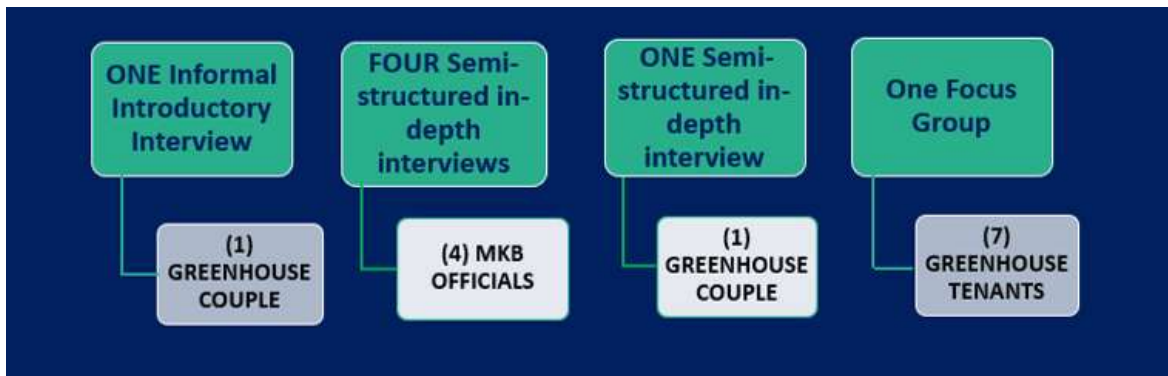


Fig. 12. Types of Conducted Interviews
 (Author's Selection Based on Cohen & Crabtree, 2006a, 2006b, 2006c)

4.3. Data Interpretation

As per Byrne (2016) and Kvale (2007), qualitative interview questions are prepared and developed progressively, followed by per verbatim transcription, totaling 6 transcriptions. Consequently, the information is categorized in excel sheet, considering the theoretical framework while aiming to answer the Research Questions. The objective is to gain situated knowledge (Kvale, 2007) related to the nature and importance of the SS aspects from both actors' perspectives. In line with the interview questionnaires, the final accumulated categorization is as follows:

- Main actors in the Project.
- Social variety and mix of tenants.
- Profile of Greenhouse tenants.
- Community stability/turn over.
- Renting and queuing process.
- Types of accommodation at the Greenhouse.
- Rent in Greenhouse in comparison to that in Augustenborg.

Questions about Social Mix & Tenants Profile (Neighbors)

- Nature of existing SS aspects in the Greenhouse.
- Social dynamics with the old Augustenborg residents.
- Nature of involvement of all actors in SS, from their respective perspectives.
- Participation in collective groups.
- Social Networks in community/social interaction.
- Communication mode amongst neighbors.
- Democracy and inclusion in decision making process.
- The importance of spatial existence to perform activities.

Questions about Social Capital (Neighboring) (RQ1/ Aim 1)

- Safety and security.
- Threats & challenges.

Questions about Threats & Challenges to SS (RQ2)

- Sense of place, belonging & attachment.
- Well-being of Greenhouse residents: feeling good, happy, comfortable, and healthy.
- Quality of the Greenhouse neighborhood.
- Quality of life in the Greenhouse.
- Successes & shortcomings of the Greenhouse SS aspects.
- MKB maintenance of services and facilities.

Questions about Positive & Negative soft SS aspects (RQ1 / RQ3)

- Contribution of all actors to the longevity and continuum of the SS aspects.
- Enhancers of SS: What would respondents like to see to enhance SS and inclusion.
- Room for improvement & lessons learned from actors' perspectives.

Questions about Lessons Learned & Actors Roles in improving SS. (RQ3/ Aim 2)

The analysis is done in a bricolage manner (Kvale, 2007), bouncing back and forth between dialogue and discursive process, while relying on readings of the interviewees' subjective matters and perceptions of SS. This eventually leads to conclusions, recommendations, and future study areas to build upon this research.

4.4. Limitations and Challenges

One of the major challenges is the lack of proficiency in English for some respondents, and my modest knowledge in Swedish, causing a potential limitation for misinterpretation of some data. Another challenge is the Corona Virus pandemic while calling for social distancing, causing delays in some interviews and becoming an additional stress factor. In addition, finding people from Augustenborg inhabitants to interview was difficult to facilitate.

Being an exceptional case study entails certain specificities whereas findings can be potentially difficult to generalize.

5. Results, Findings and Analysis

Applying the Shirazi & Keivani (2019a) SS Theoretical Framework through conducted qualitative research yielded the following results, reflecting both actors' perspectives.

5.1. Social Mix (Neighbors)

It is important to understand who the tenants of the Greenhouse Project are. They range from single, couples to small families, big families, up to agriculture students from SLU. (A. & O., Interview 2). People move to Augustenborg specifically to live in the Greenhouse project, for their interest in green living, some out of a desire to sell their big house and move into an apartment, yet with the benefits of owning a garden. Tenants positively consider themselves as being a heterogeneous multi-cultural community. (A., Interview 2). MKB recognize the diversity in families, babies, young and old couples, moving in from Malmö and outside of it. (F., interview 5). While MKB does not have exact statistics on Greenhouse tenants' profile,

they observe them having better educational background than the Augustenborg residents, with possibly higher socio-economic standards (A., interview 1).¹⁹

The majority of tenants are employed and acknowledge that their rent exceeds that of the same size apartment in Augustenborg. They also identify paying more per m² at the Greenhouse than in other places in Malmö. (X2, Interview 4). However, tenants in the bigger apartments are perceived to pay less for the same squared meters. Compared to other new housing projects in Malmö, their rent is still considered reasonable (X1, Interview 4). MKB recognize that rent in the Greenhouse is 2/3 higher than the same size apartment in Augustenborg yet; they feel that tenants get their value for money with all the special features in the 'House.' (F., interview 5).

In terms of rental selection procedure, both MKB and Greenhouse tenants declare that there is no specific queue for the Greenhouse, but people have to sign up via the digital Boplatsyd platform to stay in that queue. However, prior to that, prospective tenants are obliged to consent to a 'Green Contract' before becoming eligible for the rental queue. Through the Green Contract, people become introduced to the project, agree to grow their garden, and consent to participating in research, studies and tours to visitors. Unless they sign it, they cannot be placed in Boplatsyd queuing line, to consequently obtain a first hand rental contract. (M., interview 3). Although the Green Contract is not binding, MKB keep close tabs on tenants' balconies, pushing for greening. The tenants declare that many people are interested in living in the Greenhouse and that the rental procedure is fairly uncomplicated. (X1, Interview4).

5.2. SS Aspects (Neighboring) in the Greenhouse

Unfolding the SS aspects at the Greenhouse via qualitative research yielded the following results, while *answering the first research question RQ (1) and attaining the first Aim (1)*.

¹⁹ Observation made because the rent in the Greenhouse is higher than in Augustenborg for the same size apartment.

5.2.1. Equity

Considered to be the backbone of a socially sustainable community, it is concerned with social and environmental inclusion (Dempsey et al., 2011).²⁰ As a social concept adopted in the SS debate²¹, equity implies equal access to services, activities and amenities (Barton, 2000; Burton 2000). An equitable society is one that is free from discrimination or people's exclusion from any economic, political or social activity (Ratcliffe, 2000). In the Greenhouse, equity is evidently present whereas the tenants send out public invitations to all weekly and monthly activities, gatherings and meetings (Interview 4). The active members also form a welcoming committee to invite the new residents to their activities. (A., Interview 6; F., Interview 5).

Everybody in the Greenhouse has access to all 'House' facilities and can participate in any community activity, as well as the Facebook page. Inclusive spaces are also available and accessible to all tenants. For example, the Green Room on the ground floor is a multi-purpose room built by MKB initially to hold lectures and presentations to visitors. Later; MKB offered it to the Greenhouse residents for their own social functions.²² Keys were given to some people, while granting all residents the right to utilize the space. (M. & A., Interview 4). The Roof Garden is open to all Greenhouse tenants, including residing students. The 14th floor Nursery and deck are also accessible by all tenants. (A. & O., Interview 2).

MKB extend public invitations to all Augustenborg inhabitants, including the Greenhouse residents for its yearly meetings and the yearly 'Augustenborg Ecocity Day.' MKB equally circulate questionnaires every year to all Ecocity residents inquiring about ways to improve. (A., Interview 1).

Equality is achieved in the rental process as all prospective Greenhouse dwellers have to equally go through the same procedures. (A., Interview 1; M., Interview 3). In fact, the keys to

²⁰ Refer to 3. Theoretical Framework, Fig. 8. Sustainable Community.

²¹ Refer to 9.2. Appendix 2. Social Concepts Adopted in the SS Debate.

²² For example, birthdays, gatherings, dinners, etc..). MKB keep extra sets of keys, should they need to facilitate tenants' access.

the apartments were simultaneously handed over to tenants on the same day (R., Interview 7).

5.2.2. Democracy, Participation and Civic Society

One of the SS aspects MKB apparently pull through in the 'House' is its democratic and participatory administration, where their staff is always available. Greenhouse tenants perceive MKB's involvement in the Greenhouse activities as effective and commend their openness to residents' suggestions and requests. Tenants also acknowledge the democratic role MKB play in honoring tenants' participation. MKB representatives, on their own account get involved and take initiative. They are physically present, willing to participate, hanging around, asking tenants how things are and lending a hand beyond their working hours. The tenants feel that MKB care about them and about the project. (Interview 4; R., Interview 7).

"MKB has been on our side all the time. We've been discussing things with them, organizing things with them." (A., Interview 6).

MKB representatives confess not being experts on all activities, but express humbly their willingness to learn and work on projects alongside the tenants²³. They are willing to support the Greenhouse tenants with their initiatives.

"If we want to change something, we should do it together with them." (M., Interview 4).

"Then I also ask them if they also have ideas for workshops [...] please tell me and I can help you arrange for that." (F., Interview 5).

"They felt that we were a company that was listening to them. They get the service..." (R., Interview 7).

Regarding activities and projects, MKB support the Greenhouse projects morally, physically & financially. They even initiate such projects like the bee farming project, they find the experts and send interested participants on a 6 month paid course (F., Interview 5).

"We were honest together, and we are not experts here [...] I think any idea that has come up, if it's doable then we have done it." (F., Interview 5).

²³ Possibly attributed to the Swedish cultural and social norm of 'Lagom,' a concept of being low key and modest.

“So, I think it was both ways. We take good care of their ideas, but we put in MKB’s ideas as well. So, it was a little bit collaboration between them.” (R., Interview7).

5.2.3. Social Inclusion

MKB believe that neighbors in the Greenhouse are very inclusive to each other and that most people living there like the togetherness.

“Most people living there, they like this togetherness. I think that’s why they move there.” (M., Interview 3).

For the Greenhouse residents, the initiated activities are very inclusive and well liked. Tenants attribute a lot of the inclusive efforts to MKB’s officials. They point out that the most active neighbors suggest, organize, plan activities and invite everybody through the Facebook page or by placing posters in the elevator. Activities might emerge spontaneously or can be organized. For example, Sunday morning breakfast/ fika²⁴ started casually yet later became a weekly ritual. Inclusion is found favorable when it happens in a subtle and smooth way, seemingly voluntary, not compulsory. (X1, Interview 4).

“A lot of credit should go to MKB [...] for Freda and Robert who are hired to be for social inclusion. They really kick started a lot of things, especially in the beginning...” (L., Interview 4).

New comers are immediately welcome and invited to join. The gestures are always appreciated by all tenants, including the least active ones, who like to be invited as they feel included, despite their inconsistent or rare participation.

5.2.4. Social Networking, Interaction and Community Project Support

Social networking at the Greenhouse can take a formal or informal shape, in many cases, initiated by the tenants, like the aforementioned Sunday morning gatherings. When self initiated however, the activities need to be maintained throughout. In general, many people favor ‘bite size commitment’ as opposed to long term commitment activities. (X2, Interview 4).

“Someone has to take that initiative and keep it going.” (X2, Interview 4).

²⁴ Swedish term for Coffee Break, entails small talk socialization.

“...I think it’s super fascinating to watch groups evolve and how they form and how I feel when I take part in them and what the norms are and how they develop.” (L., Interview 4).

MKB Sustainability staff put a lot of thought into the social interaction theme, they start and encourage collective group projects, yet they realize it is a two-way track:

“So, we can’t make it work if the people don’t want to do this together [...] the first thing for us to do is to make people want to be here.” (F., Interview 5).

Although the tenants have the luxury of starting their own projects, MKB is fully supportive. For example, MKB have recently provided cloth for the shopping bag sewing project. They also provide seeds and soil for planting as well as appoint assistance from the Green Roof experts to help tenants with gardening endeavors (interview 4). Some of the longer-term group projects at the Greenhouse sponsored by MKB include cycling, bee keeping & hydroponic group. In addition, collective growing and planting event takes place twice a year, which is somehow ceremonial and is usually culminated with the physical participation of MKB representatives. In addition, MKB is currently working on a green project with the Augustenborg school to help students learn about the Ecocity and the Greenhouse. (F., Interview 5).

“We let them build whatever groups they liked, and they could use the budget if they wanted....” (F., Interview 5).

5.2.5. Livelihood and Sense of Place

People in the Greenhouse are happy to be living there, belonging to the Greenhouse community and having such affinity. They are also proud of Augustenborg. When inside the Ecocity, they feel part of the Greenhouse project, while when outside, they feel and say they are from Augustenborg. (O., Interview 4). MKB are proud of the Greenhouse, which has been a showcase for many years, where people come from all over the world to learn about it and about the Ecocity. MKB are convinced that all of Augustenborg inhabitants are also proud of the Greenhouse.

“I think I’m satisfied. I’m very happy and so we are just here and that’s nice.” (O., Interview 6).

“I made an evaluation with all of the tenants and the result is that people are more satisfied with their social sustainability in the ‘House’ and the environmental solutions. So, we are really proud of this because we think it is key.” (F., Interview 5).

5.2.6. Human Well-Being

Cleanliness, neatness and upkeeping related to the building and facilities (neighborhood), social inclusion, social networks and trust amongst the tenants, in addition to the high quality of life in the apartment and in the ‘neighborhood’ attribute to being sources of happiness, satisfaction, sense of attachment and well being to the tenants.

“Happy to be part of the house, yes, I think. They shouldn’t stay if they are not happy to live there.” (F., Interview 5).

5.3 Threats and Challenges to SS Aspects in the Greenhouse

The threats at the Greenhouse vary, rated differently by the tenants, some are physical and actual, while others are more psychological or sentimental. Identifying these threats and challenges *answers the second research question RQ (2).*

5.3.1. Safety and Security

Greenhouse respondents rate the threats as ranging from youth hanging out in the foyer²⁵ or on the staircase to explore the ‘House’, up to break-ins and thefts of electric wagons from the garage. The youngsters hanging out and about the Greenhouse smoking or driving by fast in motorbikes are perceived as a nuisance. To some, Augustenborg school is not considered ideally safe, with some polemic stories taking place. While several thefts take place, the Greenhouse tenants feel that these incidents happen sporadically and in waves.

For the sentimental threats, some tenants consider that having unkind people moving into the ‘House’ may constitute a threat disrupting the harmony of their active likeable group (L. Interview 4). Others fear that people close to them might leave the Greenhouse (A., Interview 4). In general, Greenhouse tenants feel the need to watch out for new unfamiliar faces hanging around the ‘House’ yet do not feel particularly alarmed (J., Interview 4), especially the older

²⁵ Building entrance hallway.

tenants, who neither stay out late, nor do they have small children to worry about in the neighborhood.

“When we are inside and locked out, we feel safe. But you always have to watch which people are coming into the ‘House’ ...” (O., Interview 6).

“Because of the break ins [...] we kind of have to be suspicious of and aware of what’s going on in the ‘House’.....” (X2, Interview 4).

“I think now we’re talking about these Corona times I feel more safe living in this house than in the previous places I’ve been living in.” (J., Interview 4).

As for MKB, they acknowledge the existence of problems in Augustenborg, but they are trying hard with reinforced police Rimfrost²⁶, additional street lamps and better policies to overcome the problems. (A., Interview 1). Upon breaking into the Greenhouse, MKB installed cameras in some areas and limited the entrance to the Greenhouse to only one while intensifying the vigilant rounds.

“The Garage door, it doesn’t close at the same time. It takes some seconds, so some people have come into the garage and stolen things maybe ... that is a threat...” (M., Interview 3).

According to Area Responsible and Real Estate Manager, people leading and dominating the social scene at the Greenhouse can threaten the social dynamics by inhibiting some tenants from participating in collective activities. MKB acknowledge that there are safety related mishappenings in Augustenborg and the Greenhouse, but similar incidents also happen elsewhere in Malmö. To some MKB officials, night time can seemingly appear less safe than day time. However, despite the safety and security threats, MKB do not wish to transform neither the Greenhouse nor Augustenborg into a ‘gated community.’ (R., Interview 7).

5.3.2. Tenants’ Mobility and Stability

When asked about the tenants’ mobility, the participants respond differently. Greenhouse tenants perceive the turn-over as high, especially lately, where 3 households moved out. However, they recognize that the reasons are never attributed to the Greenhouse, but to personal considerations. Some tenants’ families have outgrown the apartments, others moved

²⁶ Swedish for Police operations to combat violence amongst gangsters

out due to work relocation, another tenant was too busy at work to attend to her balcony garden, while one family moved out for financial reasons. However, it is unanimously declared that the bigger apartments in the lower part of the Greenhouse witness more stability and less mobility (Interview 4). MKB officials however declare that the turnover at the Greenhouse is similar to all their other housings, accounting for only 10% of occupancy. They attribute Greenhouse tenants' perceptions being elevated to their possible attachment to people moving out.

"More turnover than I expected [...] It's still quite a lot of people moving all the time [...] I'm more worried that somebody from this group would leave... It's small enough to be very fragile for people moving out." (L., Interview 4).

"So many people have moved, but if you ask the one working with the Greenhouse, he said it's not very much. People stay longer there than in other places." (M., Interview 3).

5.4. What Worked Well in the Greenhouse:

The following are positive aspects of SS in the Greenhouse Project, perceived from both actors' perspectives, Greenhouse tenants' and MKB's. *These functioning SS aspects are related to the first research question RQ (1) and the first Aim (1).*

5.4.1. Availability and Accessibility of Physical Space for Activities

A big emphasis is put on space provision to perform activities in the 'House'. An example is the Green Room, which is a multi-purpose room for tenants' individual and collective social activities from weekly meetings, to monthly Potluck dinners, added to informal sporadic gatherings. It is even considered as an extra living room outside tenants' apartments.

"Where should you meet your neighbor? [...] I think that the Green Room is really, really important for the house." (R., Interview 7).

"It's like an extended Living Room." (Interview 4).

However, tenants also acknowledge the importance of the architectural features as well as the location of inclusive spaces. The Green Room, being located on the ground floor with its transparent glass full height windows is a great example of a well-designed, well-situated, and visible space.

“Things that I think are very important is the architecture [...] this space which is often used as a meeting place at night and these large windows [...] when you walk down, it’s like you’re inside here because the effect is really transparent.” (X1, Interview 4).

“I pass it with my bike, and I see that somebody is here then I’m reminded [...] there is something happening here.” (L., Interview 4).

There are plenty more places for tenants of different age groups and interests to meet, like the basement, laundry room, terrace garden and 14th floor nursery and deck. All places are easily and equally accessible by all tenants.

5.4.2. Speedy and Excellent Maintenance of Services and Amenities

According to the Greenhouse tenants, MKB are quick to respond and follow through with tenants’ complaints. Residents recognize the importance of their project to MKB, especially at the beginning when the ‘House’ was always full of press representatives, MKB was keen on having everything intact. Tenants speculate that the thorough attention and service rendered to the Greenhouse, are not particularly available to all other MKB housing tenants, attributed to the popularity of the Greenhouse project as a showcase. (A., Interview 4). On their part, MKB take very seriously the maintenance and service issues of the Greenhouse, by attempting to respond to complaints and performing regular checkups. In return, the Augustenborg flats get maintained upon request. (A., Interview1).

“When we moved to MKB and said something is broken, they came.” (M., Interview 4).

5.4.3. Democratic Governance Structure

The Greenhouse tenants have the liberty to engage in social networking of their liking. Many projects start out being self-initiated and are materialized with the help of MKB, morally, physically, and financially. The Facebook page started by MKB, was later handed over to the Greenhouse tenants to organize and manage. MKB’s democratic management increases the tenants’ sense of ownership, attachment and belonging to the ‘House’ and the neighbors.

This aspect shows us that the Nordic Housing Model based on democratic participation (PPP), has been attained in the Greenhouse post-occupancy phase.

5.4.4. Community Collective Groups and Networks Supported by MKB

The possibility to take part in area-based initiatives is elevated at the Greenhouse, where there are multiple collective groups meeting regularly, bringing people together. Shorter term activities are more favorable for being less committing. Interestingly, it is highly perceived that the same people always participate in most activities. In addition, the dedication and effort exerted by the organizing tenants are foreseen as essential successful ingredients to maintaining the continuity of such activities and the cohesion of the groups.

“We have a thing called a potluck dinner, every month [...] We meet each other in the laundry rooms, so you actually do get to interact with each other and for me that feels inclusive.” (X2., Interview 4).

While many gatherings and meetings are also self-initiated by the residents, MKB hold yearly public meetings for the entire Augustenborg residents. MKB is keen on getting people together inside the Greenhouse and try to help in any way possible. The Greenhouse tenants are perceived by MKB as cooperative initiators, non-complaining and open to suggestions.

“I think they feel very much included. That is my opinion, and a lot thanks to the people living there.” (M., Interview 3).

“We want people’s heart in the House.” (R., Interview 7).

5.4.5. Quality of Home, Neighborhood²⁷ and Life

MKB recognize that the Greenhouse Project is special. The ‘House’ provides its tenants a sense of community, aside from its extremely comfortable high-tech, environmentally friendly characteristics. The apartments offer many features, normally more associated with private villas, not apartments.

“It is like having all the advantages and extras of a house available in an apartment.” (A., Interview 2).

In general, the feeling of well being, satisfaction and happiness with the high quality of life is what seem to prevail amongst the Greenhouse tenants. People feel trust, inclusion and affinity

²⁷ Neighborhood in this study is a reference to the Greenhouse Project building and amenities, with no connection to the rest of Augustenborg Ecocity.

that also bring about a sense of well being. Some tenants express that they have become so used to the good life in the Greenhouse that they take it for granted and are only reminded of its special qualities by their visitors. (O. & A., Interview 6).

“Sense of communities is a prime reason.” (L., Interview 4).

“High quality of life.” (M., Interview 4).

“Green lifestyle.” (O., Interview 4).

Even with the fact that all people are renting and not owning the apartments, MKB transmit to the Greenhouse tenants the feeling of ownership. MKB realize that most people at the Greenhouse are happy, proud, feel good and love being there. They also recognize the importance of the Greenhouse project and attempt to make things work out, by attending carefully to the tenants’ needs; treating them somehow like V.I.P’s (R., Interview 7).

“It’s your house, you’re the expert in this house. We’re just owning it and we will help you out [...] as much as we can.” (R., Interview 7).

5.4.6. Sense of Attachment and Belonging

People like living in the ‘House’. They come to Augustenborg to live the Greenhouse experience, while for the same rent they can live elsewhere. While the Ecocity is brought to the people already living in Augustenborg, for the Greenhouse it is different, people willingly move into it. (X1, Interview 4). It is even reflected in the fact that whoever moves away, does not necessarily do so because of life in the Greenhouse, but for other individual circumstances. Most of the tenants feel a sense of ownership and inclusion. Most of these feelings stem from the excellent rapport, affinity, and networking amongst the neighbors.

“I think that the trust is actually made by very small things [...] It’s not big things happening [...] but it’s the small things being done all the time I think which make you feel that you’re part of something.” (A., Interview 6).

“It’s more about feeling like you’re part of a community rather than an apartment in a building.” (X2, Interview 4).

“... I think most of the people living here feel an ownership for the place that they are part of this place. Instead of just a place where you’re living and sleeping at night.” (O., Interview 4).

“...but feeling if there is anything, I could ask somebody. If I need something, I could ask somebody...” (A., Interview 4).

In summary, the Greenhouse residents are proud of the project, MKB is also proud and the same is said about the Augustenborg residents.

“I think people that have been staying and also living in Augustenborg for a long time, I think they are proud of it now [...] MKB is proud of Greenhouse. We are very proud of this building and of its whole way, the concept.” (M. Interview 3).

5.5. What Did NOT Work in the Greenhouse Experience?

Some features are perceived to malfunction, which can negatively impact the SS aspects in the Greenhouse. When mended or improved, from the actors' viewpoints, these aspects can enhance the livelihood and well-being of the Greenhouse experience. *Identifying these features can better answer the third research question RQ (3) and attain the second Aim (2).*

5.5.1. Lack of Integration with Augustenborg Residents

Participants point out the noticeable exclusion of any interaction between Greenhouse and Augustenborg inhabitants. The strong social cohesion amongst the Greenhouse neighbors can have a downside, as it can be discriminatory and exclusive (Ratcliffe, 2000), leading to seclusion and isolation from the Augustenborg inhabitants. The distancing is perceived as two sided. For the Greenhouse residents, being self satisfied within the comfort of their community, affects the prospects of expanding the social cohesion & social inclusion to their Augustenborg neighbors.

“ I think we are our own community in the Augustenborg Ecocity [...] We are truly separated in our own building [...] of course we would like to have activities in common with the Augustenborg residents, it will be nice.” (J., Interview 4).

“There could be more activities that try to bring people together to meet each other [...] I thought I was moving Ekostaden in Augustenborg where the whole place was more of a community.” (X2, Interview 4.)

“The people living in this house are more important people to me than people living outside the house. It takes time to make this work, how do we do this?” (A., Interview 4).

The other side of the coin is the Augustenborg residents; where some may feel disdain as this tall edifice obstructs the sun from reaching the adjacent shorter buildings. (A., Interview 2).

Another reason can be that the lot was a noisy messy construction site for some time (J., Interview 4). Tenants also recognize the likelihood that Augustenborg residents are busy with their own lives and can potentially not be interested in associating with the Greenhouse people (J., Interview 4). It is also possible that some Augustenborg inhabitants may feel that the Greenhouse residents are favored by MKB with better facilities and services. However when asked, the Greenhouse tenants mention their genuine interest in interacting with the Augustenborg residents, which before moving into the Ecocity they thought of it as a given (Interview 4).

MKB do acknowledge that at the beginning, Augustenborg inhabitants could have had hard feelings towards the Greenhouse, driving MKB to include the Greenhouse residents in all Augustenborg related meetings.

“MKB does invite Greenhouse residents to all the big general meetings related to Augustenborg [...] MKB asks us to attend.” (Interview 4).

When MKB send out yearly surveys to Augustenborg Ecocity residents, inquiring about what people’s requirements are, Augustenborg residents show no particular interest and very few of them generally respond (A., Interview 1). Meanwhile, Greenhouse tenants mostly reply, with considerably positive responses. (F., Interview 5). This demonstrates how weak the sense of attachment is for Augustenborg residents towards their Ecocity.

5.5.2. Wasted Area and Misused Space

It is noticed that the 14th floor of the Greenhouse building has a lot of wasted space, which architecturally could have been put to better use to bring people together (X1, Interview 4). The space created for planting is inefficient, not having enough ventilation to grow plants, especially during the winter. Balconies in the 14th floor apartments could have been replaced by a sauna (X1, Interview 4) or guestrooms for tenants’ guests (A., Interview 4). Another area is thought to be misused is the Greenhouse ground floor space, rented out to a Gym, when potentially it was planned to host a theater. Had they had a theater or a cultural space there, it could have become a hub for the entire Ecocity to interact (A. & M., Interview 4).

5.6. Lessons Learned: Room for improvement

The following are recommendations by interviewees from the Greenhouse and MKB, which can be considered to improve on the existing SS aspects in the Greenhouse thus, *answering the third research question RQ (3) and leading to fulfilling the second Aim (2)*.

5.6.1. Highlighting the Social Aspects of the Greenhouse

Greenhouse tenants express that prior to moving in, the environmental aspects overshadowed the social ones. MKB's marketing is mostly directed towards the green features of the project, while the tenants are pleasantly surprised to experience the prominent social aspects of the Greenhouse. They feel that the social is almost a by-product of the environmental aspect.

"Here the social aspect is a byproduct to the greenhouse aspect." (X1, Interview 4).

Tenants suggest that MKB draft a parallel 'Social Contract', along the 'Green Contract.' (Interview 4). Not that the contracts are binding, however; they set an idea for tenants about the project's standards and expectations. Accordingly, the social aspect can be better highlighted in the project, from the beginning.

5.6.2. Improved Area Usage for more Inclusive Collective Activities

As pointed out by many Greenhouse tenants, some spaces in the Greenhouse are not very practical for their intended purposes and can therefore be used more effectively for collective activities.

5.6.3. Social Integration and Cohesion between Greenhouse and Augustenborg Residents

The Greenhouse tenants feel that MKB can put more effort in integrating the Greenhouse residents with those of Augustenborg, by creating more mutual activities. They do express interest in interacting with the rest of Augustenborg residents. Greenhouse tenants feel that MKB as a formal authoritarian actor, can effectively organize events and activities for the entire Augustenborg Ecocity. This might give Augustenborg residents an incentive to participate in such activities and projects, being more formally structured. (Interview 4).

For better integration prospects with Augustenborg residents, some Greenhouse tenants suggest creating a cultural hub to become a gathering and interacting space for the entire Ecocity. While touring the Greenhouse in my informal introductory interview, from the 14th floor terrace, A. (Interview 2) indicated the likelihood of expanding their gardening project outside the Greenhouse, to incorporate an area close to the pre-school yard. This will be beneficial to involve the children's parents from Augustenborg in participating in such a community project thus, extending the scale of social networking beyond the Greenhouse neighborhood.

MKB do a good job incorporating hubs in the central square of Augustenborg however, some projects are more successful than others, but their attempts are still ongoing till this day (R., Interview 7).

5.6.4. Mending Existing Augustenborg Neighborhood before Constructing New Green Buildings

As opinionated by MKB Sustainability Project Manager (Interview 7), MKB are better off working on improving the Neighborhood, Neighbors and Neighboring constituents within Augustenborg, first and foremost. The outcomes of doing so are thought to be far more rewarding to the entire Ecocity community. Working on improving a larger scale of the neighborhood rather than situating a high-tech green building amongst people's houses who cannot afford to live in it, can be more equitable, inclusive, and socially sustainable (R., Interview 7).

In addition to being less discriminating, such efforts can create a better sense of equity, justice, inclusion, therefore instilling a sense of belonging and attachment which lead to increased safety and security.

6. Discussion

In this chapter, I will further elaborate on the findings and analyze them from my interpretations of the empirical results. *This will help answer the third research question RQ (3) and the second Aim (2).*

6.1. Interpretation of Results and Findings

HOMOGENOUS COMMUNITY

One thing that unites the Greenhouse tenants, in spite of their different family sizes, professions and social status, is their willingness to partake into the green lifestyle experience. Seemingly, the majority feel equally and simultaneously very well-treated by MKB.

Although the Greenhouse tenants consider themselves ethnically diverse, they somehow are perceived by MKB as socio-economically homogenous. Research about homogeneity and heterogeneity of neighborhoods is somehow fragmented, however being homogenous is potentially perceived as a motivation to enhance social interaction and fortify social cohesion. Neighbors' engagement in informal socialization can boost neighborly trust and promote further social interaction, leading to increased social cohesion in the neighborhood (Letki, 2008). However, the high level of social cohesion amongst the Greenhouse tenants has a downside, as it tends to be discriminatory and exclusive (Ratcliffe, 2000), therefore distancing them from the Augustenborg inhabitants.

THE OUTSHADOWED 'SOCIAL'

Surprisingly enough, while MKB eclipse the social aspects of the Greenhouse by highlighting the environmental and economic ones, this aspect is the most satisfying in the Greenhouse experience. This is an interesting finding, being non-reflective of the theoretical challenges portrayed in the SS literature. In fact, researchers consider that one big reason for SS being undertheorized is the fact of being outshined by the economic and environmental pillars (Dillard et al., 2009), which in the Greenhouse case, proves to be quite the contrary.

SUCCESS STORY

Significant outcome to highlight in this study is the important role of both actors,²⁸ marking a success story. As a result of mutual efforts between MKB & Greenhouse tenants, in the microscale of the Greenhouse, the social interaction and cohesion is elevated. Malmö

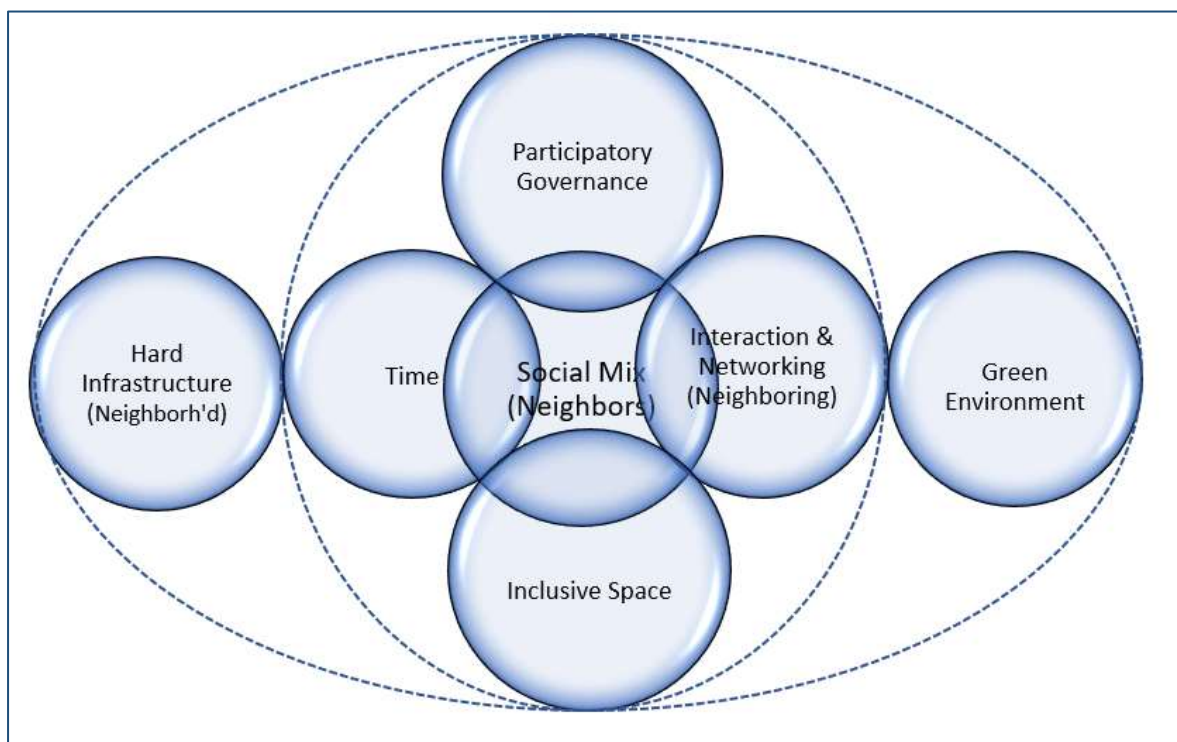
²⁸ Refer to Fig. 13. Actors' Role in Fostering SS in the Greenhouse towards a Strong Sustainable Community.

Municipality is the owner of MKB, yet the governance structure is participatory, in line with the Nordic Neighborhood planning, based on PPP. (Tunström, 2019). All the above demonstrate the strong SS aspects in the Greenhouse, conforming with the previously established definition of a socially strong and sustainable community. (Dempsey et al., 2011).



Fig. 13. Actors' Role in Fostering SS in the Greenhouse towards a Strong Sustainable Community (Author's Own Interpretation)

It is evident to me how essential the dimensions of **Place (Space)**, **Time** and **People (Actors)**, **Social Networking and Interaction** are towards attainment of SS. Applying the Shirazi and Keivani's (2019a) theoretical framework to the Greenhouse works effectively in demonstrating the social strength of this community. The outcome is that people (neighbors), are an exceptionally important factor, engaging in interactive social networks (neighboring) that increase trust, which according to Letki (2008) fosters social cohesion. Interaction calls for a physical place to occur, however not just any place. Public spaces in neighborhoods do not necessarily guarantee enhanced social capital and interaction, unless they are inclusive and meaning making (Dempsey, 2008), in this case catering to collective activities. Time factor is essential, as it takes time to build trust and affinity amongst neighbors. Simultaneously, participatory governance structure adds to the success of SS. I envision the interrelated strong community of the Greenhouse as follows:



*Fig. 14. SS Aspects Fostering Strong Communities in Built Environments
(Author's Own Visualization, Inspired by Woodcraft & Dixon, 2013)*

This concludes the answers to the first research question RQ (1) and the first Aim (1).

THREATS & CHALLENGES

By clarifying the features threatening SS aspects of the Greenhouse, *the second research question RQ (2) is answered*. The existing threats as outlined by both actors are physical and psychological, which may lead to changing the soft infrastructure aspects of the SS. This might result in an imbalance within the SS dynamics amongst neighbors, or worse yet, increasing the mobility and affecting the stability of the Greenhouse social mix. However, as pronounced by MKB, it is not favorable to have 'gated communities' to maintain safety in the 'House'. Threatening factors therefore need to be considered for future advancement beyond these challenges.²⁹

END NOTE

While both actors summarize the successes and shortcomings of the Greenhouse Project, they both propose suggestions towards future improvement in the SS aspects of the Greenhouse and Augustenborg Ecocity. Some of the most prominent suggestions by the Greenhouse tenants are integration of the Augustenborg inhabitants with them and mending the existing Ecocity.

6.2. Implications of Findings

The findings lead us to best practice recommendations and future pathways. *In this chapter I answer the third research question RQ (3) and fulfill the second Aim (2).*

6.2.1. Best SS Practices in The Greenhouse

OUTSHINING THE 'SOCIAL' IN SUSTAINABILITY

According to (Boström, 2012) sustainability originated out of environmental and conservational interests, undermining the social dimension within the SD framing. Therefore, in many SD applications, the scales can tip off towards environmental aspects, overshadowing

²⁹ Refer to 6.2.1 Best SS Practices in the Greenhouse, for detailed elaboration.

the social ones. Moreover, SD has been institutionalized to the extent of establishing separate “environmental” versus “social” sectors. (Boström, 2012, p.9).

In this context, MKB need to highlight the Social aspect of the Greenhouse for prospective tenants to know what to expect. By incorporating SS in their vision, MKB can pronounce it clearly in their mission statement, marketing strategies, advertising campaigns as well as in their rental process. This can be accomplished by including a ‘Social Contract’ in addition to the ‘Green Contract.’

RE-ASSESSING EXISTING SS ASPECTS

Being concerned with the microscale of the small Greenhouse community, this study comes across as a success story. However, to take it one step further, we need to question whether this success is attributed to the operational scale being fairly small, contained and manageable? or that the people (social mix) are more homogenous, especially socio-economically? or that their networks and activities are based on mutual interests?

Re-assessment of SS aspects is necessary for monitoring and controlling existing sustainable communities and urban developments (Shirazi & Keivani, 2017). The assessment Framework can also help compare which neighborhoods are more socially sustainable. This provides urban designers and planners the possibility of enhancing existing developments while designing for future ones (Shirazi & Keivani, 2019a).

SAFETY AND SECURITY FIRST

To ensure the physical safety in the Ecocity, MKB need to work with the Augustenborg inhabitants. By solving their social problems, inhabitants can obtain a sense of place and belonging, leading to higher feelings of wellbeing. When they are satisfied and happy, there can be less neighborhood problems. Some practical suggestions include creating activities for the youth to help them defer from turning to mischief, such as the ‘Augustenborg Basketball’ or ‘Football’ teams. Another suggestion is opening art and crafts workshops, or even income generating projects for the inhabitants, like ‘The Augustenborg Honey’. Possibly creating or re-activating a Neighborhood Council, in line with the Nordic Housing Model, can help ensure

democratic representation. For the psychological threats, to guarantee meaningful democratic tenants' participation, activity organization in the Greenhouse can take a rotative pattern, eliminating domination of some people over others.

MAINTAINING INCLUSION, EQUITY AND LOCAL DEMOCRACY³⁰

SS in the Greenhouse Project is one that is undertaken by the municipality and represented by MKB, which in Sweden is considered a positive aspect (Tunström, 2019). MKB's constant support and assistance with area-based initiatives, even when conceptualized by the Greenhouse tenants, is a practical example of conscientious public planning towards enhanced social inclusion, equity, and local democracy. The other actors are the Greenhouse tenants who actively practice their democratic privileges (Tunström, 2019), continuously working on collective networking and inclusion in their community.

6.2.2. Plausible Pathways

TRANSFER OF RESEARCH AND BODY OF KNOWLEDGE

While SS research should be ongoing, constant updating needs to be considered, due to the dynamic nature of SS. Academics, researchers and scientists need to undertake SS studies seriously and push forward towards the diffusion of this field. It is possible to transfer the body of knowledge found in the Greenhouse study to other similar sustainable urban communities, for comparison reasons. In addition, identifying successful models of SS can help in their future implementation (Shirazi & Keivani, 2017).

Following Shirazi & Keivani's (2019a) recommendations, SS study can incorporate quantitative research, in addition to the qualitative, exploring both hard and soft infrastructure of the entire Augustenborg Ecocity. Although it is not always effective to employ quantitative research, it might be advantageous to use this qualitative methodology and later transform the results into quantifiable measures.

³⁰ Refer to Fig. 13. Actors' Role in Fostering SS in the Greenhouse towards a Strong Sustainable Community.

INCLUDING THE 'S' IN SD

SS should be a vital part of any SD work within the public and corporate sectors. Assimilation of SS should be in all urban development planning, policies, and strategies from inception of the design planning phase, up to project implementation, as an integral part and not a by-product. However, considering the heavy reliance of SS on definitions, scale, context, place, time, and people as essential ingredients, it is important to carefully analyze these aspects and research for best implementation methods.

Haase et al. (2017) perceive that in urban development planning, progressively integrating social inclusion into SD planning can be achieved through **Sustainability Appraisal** and **Strategic Environmental Assessment (SEA)**.

SS ON THE UPSCALE

Another plausible pathway is integrating the Augustenborg Ecocity with the Greenhouse, in terms of SS. In principle, this step can be positively perceived, as heterogeneity is favored to homogeneity in the larger neighborhoods, especially towards disadvantaged groups. The existing polemic groups in Augustenborg can highly benefit from mixing with advantaged groups such as the Greenhouse's, concluding to a cohesive experience (Galster & Friedrichs, 2015). However, Shirazi & Keivani (2019a) warn us that studies of SS aspects are context, scale, and case specific. Accordingly, ambitious projections towards extending the social dimension beyond the Greenhouse boundaries is challenging to the geographical spread and scale. (Shirazi & Keivani, 2019b). There is a possibility that attempts to transfer the same body of knowledge from the Greenhouse are impeded, thus leading to its failure. (Griego, 2015). To incorporate the Augustenborg Ecocity theoretically, we need to re-establish the SS definitions and indicators to match the new scale and geographical breadth. Operationally, a revisit of the framework is essential, especially that the local microscale factor can potentially lose its significance and validity upon upscaling (Yoo & Lee, 2016).

7. Conclusions and Future Studies

In addition to the lack of universal consensus on its definition, SS is the least explored out of the 3 sustainability pillars. In this study, SS aspects in the Greenhouse community are assessed using the Shirazi & Keivani (2019a) Framework. The outcome demonstrates that the project fosters high levels of SS aspects like social equity, inclusion, democracy, networking, sense of belonging and human well being, qualifying it to be labelled a strong community. This success is attributed to a two-way track, with efforts exerted from both actors. MKB's democratic conduct nurtures ongoing participatory governance and supports area-based initiatives. In addition, they carefully attend to the needs of their tenants, keeping the Greenhouse fully maintained. MKB 'walk' the Nordic Housing Model 'talk'. The 'neighbors' being involved with their 'neighboring' behaviors foster trust, affinity, sense of belonging added to a common interest in green living and social interaction.

However, outlining the threats and challenges to SS aspects in the Greenhouse Project by both actors, MKB and the Greenhouse tenants play a role in changing the SS aspects within the community. However, lessons learned acquired from both actors can improve its SS aspects for it to become exemplar in assessing, planning, and implementing, not only as an eco-friendly project, but also as a socially sustainable community. In conclusion, green design can be friendly, comfortable, community based, providing high quality of life, on environmental, economic, and social levels.

In the future, urban planning strategies and policies should be revisited to incorporate SS studies as an integral part, when designing or regenerating sustainable developments. Future possibilities to effectively engage multiple collaborators and researchers from academia, science and the corporate sector is not only essential, but also beneficial. The exchange of study results on national and regional levels can also assist in pinpointing common SS aspects, which can be effectively reproduced if scale, frameworks, and indicators are revised.

The relationship between Augustenborg inhabitants and the Greenhouse tenants in terms of social dynamics, although mentioned, yet is not fully explored in this study. Accordingly, social

capital and interaction, integration, and cohesiveness amongst Greenhouse and Augustenborg inhabitants can become significant substance for future SS research and implementation.

With the recent global outbreak of the Corona Virus pandemic, where social distancing is highly recommended, it will be significantly interesting to research how SS dynamics materialize amongst the Greenhouse tenants in such times of crisis. Will SS become a virtual or digital concept in the future? That is worth investigating!

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9. Appendices

Index

9.1. Appendix 1. Aerial View of Augustenborg Ecocity Sustainable Features – Malmö.

9.2. Appendix 2. Social Concepts Adopted in the SS Debate.

9.3. Appendix 3. Shirazi & Keivani's Original Framework Definitions of Soft Infrastructure (Neighboring) Measures.

9.4. Appendix 4. List of Interviewees.

9.1. Appendix 1. Aerial View of Augustenborg Ecocity Sustainable Features – Malmö



Source : <https://beta.ecourse.se/course/ekostadens-klassrum/c/verkstaden//explore-ekostaden/>

9.2. Appendix 2. Social Concepts Adopted in the SS Debate (Extracted and Re-adapted from: Shirazi & Keivani, 2019b, p.4-7)

| SOCIAL CONCEPTS ADOPTED IN THE SS DEBATE | |
|--|---|
| SOCIAL CONCEPT | INTERPRETATION |
| Social Equity & Social Justice (old feature of planning since themed 20 th century (Yitachi & Hedgcock, 1993). formalize ethical ground for establishing SS (Cuhill, 2010) | Equity : related to intragenerational (for the least advantaged in the society) and intergenerational (ensuring fair treatment to future generations) aspects of fairness and equality Justice : (Harvey, 2003; 1998) Distributional justice, fairness of outcome and fairness of process of distribution. |
| Social Capital (less tangible) Used extensively in the 20 th century by researchers, academics, international organisms and policy makers (World Bank, 1998). EU policies were affected by Putnam's concepts of social capital (Marzi et al, 2010) | Has to do with the relations amongst people (Coleman, 1988) Consist of 3 parts: 1. Obligation and expectation (based on trust & worthwhile gives power to a community). 2. Information channels (through social relations information is provided to facilitate actions). 3. Social Norms (provision of benefits to individuals, families and groups in the community). |
| Social Cohesion : Long subject of quest amongst psychologists (Friedlin, 2004) | Refers to the force that holds individuals within a group together. Associated with social interaction, social networks, sense of belonging and involvement in the community (Faman, 2010). |
| Social Exclusion Was first used in France in the 1870's referring to marginalized groups excluded from social benefits, then expanded to be used in EU policies with a more extensive meaning (Pieron, 2010) | Process over time that leads certain individuals, people, groups from resources that allow them to participate in social economic and political activities in the society (Pieron, 2012, p. 12). Political exclusion : is another aspect related to decision making process (Davoudi & Alkntson, 1999) and also non-participatory in many normal and basic societal activities (Turk et al, 1999) |
| Environmental Justice | -Public actions not causing any disproportionate disadvantage to any group in the society (Agreman and B. Evans, 2004). -Any procedures that deal with Distributional inequalities (Faber & McCarthy, 2003). -Environmental problems should not be incurred only on the poor and more vulnerable (Agreman et al, 2003, p. 11). -Deals with questions of distribution related to gender, race and class. |
| Quality of Life | -Who benefits from it and who gets negative environmental burden (Boston, 2012). -F42-Refers to the good and satisfactory character of people's lives (Scajal, 1980). -Environmental problems should not be incurred only on the poor and more vulnerable (Agreman et al, 2003, p. 11). -Deals with questions of distribution related to gender, race and class. |
| Attractive idea since the 1930's (Massam, 2002), was incorporated in research only in the 1960's (Schwester & Fisher, 1985) | -The ability to adapt a lifestyle (willing to individual's needs and wants (Karen et al, 1990). -Ability to achieve a satisfactory social situation to the individual's best physical capacity (Lamendola & Pellegrini, 1973, p. 457). |
| Urban Inequality | - Umbrella term covering a wide range of fields and concepts: education, Physical and mental health, financial prosperity, happiness, liberty, living standard, participation, environmental quality, urban services & Housing (Sezag elDin et al, 2013). -Depends on objective factors of people's lives, related to the environment, as well as subjective factors (Dissart & Deller, 2000). |
| Dominant Urban Discourse debate since the 1960's (Kajal, 2011) | -Refers to environmental characteristics that make the living space attractive to live, work and invest in. -Refers to attributes about place, with scale ranging from the dwelling, into neighborhood, up to the city and region, in a way that contributes to humans' well-being (Newson, 2012, p. 82). - Encompasses elements such as: home, neighborhood, metropolitan area which contribute to: safety, welfare, health, convenience, mobility, economic opportunity and recreation (Wuchic, 1999, p. 7) |
| | IMPLICATION IN SS |
| | Equity : indicates equal access to services (horizontal equity) as per (Kay, 2005), as well as access to political and economic opportunities, requiring elimination of any socioeconomic and legal barriers According to Putnam et al (1993): <ul style="list-style-type: none"> Trust, norms and networks are features that improve societal efficiency. Has Bridging/Inclusive qualities: looking outwards of the community to bridge others outside the circle from different social communities into the insiders. (Putnam, 200, p. 42) Bonding/Exclusive qualities: strengthening the community |
| | Markets of poor social cohesion in any society are: <ul style="list-style-type: none"> High crime rate, unemployment, organized crime, elevated crime rate, low standards of living All those lead to social exclusion, social disorder, low moral values and social injustice. |
| | Very wide subject and rather controversial with many interpretations. Can cover wide subjects like: unemployment, low income, lack of skills or education, poor housing, lack of health care, high crime rate (Social Exclusion Unit, 1998). Poverty isn't one of the aspects as exclusion can happen amongst people who are not poor (Barry, 2002). |
| | -Agreman and B. Evans (2004, p. 160) link the "just sustainability" to sustainable development, promoting "an equal concern with equity, justice and governance on one part and environmental on the other part." |
| | -Recently, more weight was put on the subjective factors as they concern people's own internal perceptions and satisfaction with aspects of their lives (Moons et al, 2006). -The subjectivity implies that this might not be static but changing. -Also, believed by policy makers to be measurable through the right sociocultural indicators that can guarantee the quality of life enhancement (Dennis et al, 1993; Massam 2002; Soleimani et al, 2014) |
| | Markers of poor social cohesion in any society are: <ul style="list-style-type: none"> High crime rate, unemployment, organized crime, elevated crime rate, low standards of living All those lead to social exclusion, social disorder, low moral values and social injustice. |
| | -Goes beyond the physical characteristics and reflect: quality of life, well-being, satisfaction with their needs (de Haan et al, 2014). |
| | - Degree of satisfaction of people with their objective and subjective factors of their environments (Southwood, 2003) |

9.3. Appendix 3. Shirazi & Keivani's Original Framework Definitions of Soft Infrastructure (Neighboring) Measures

(Source: Shirazi & Keivani, 2019a, p.463)

Table 2. Measuring 'neighbouring'; indicators and measures.

| Indicators | Measures |
|-----------------------------------|---|
| Social networking and interaction | <ul style="list-style-type: none"> ● Number of neighbours known by name ● Frequency of meeting neighbours ● Number of friends in the neighbourhood ● Number of neighbours frequently visited ● Asking help from neighbours ● Exchange of help and support with neighbours |
| Safety and security | <ul style="list-style-type: none"> ● Feeling of safety in daytime ● Feeling of safety after dark ● Safety of open spaces ● Children safety on the streets ● Safety of pavements and sidewalks ● Being victim of crime ● Presence of police at the neighbourhood |
| Sense of attachment | <ul style="list-style-type: none"> ● Feeling of neighbourhood attachment ● Neighbourhood proud ● Feeling of being at home in the neighbourhood ● Missing neighbourhood while away ● Desirability of neighbourhood ● Desire to leave the neighbourhood |
| Participation | <ul style="list-style-type: none"> ● Knowing community-based organisations ● Membership in community organisations ● Participation in religious activities ● Being involved by local authorities ● Level of respond to local authorities ● Knowing neighbourhood problems |
| Quality of neighbourhood | <ul style="list-style-type: none"> ● Perception of building crowding ● Perception of population crowding ● Satisfaction with noise pollution/neighbours/cleanliness of neighbourhood/street lighting/maintenance of public spaces/neighbourhood reputation/traffic congestion |
| Quality of home | <ul style="list-style-type: none"> ● Satisfaction with home in terms of privacy/noise/room size/room number/parking ● Desire to move out ● Reason for moving |

9.4. Appendix 4. List of Interviewees

| 9.4. Appendix 4: List of Interviewees | | | | | | |
|---------------------------------------|--|--|---------------------------|---|--------------------|--|
| Actor | Job Title | Interviews Date & Place | Interview Sequence Number | Interviews Type & Duration | Citation Reference | Contribution /Notes |
| MKB | Bosocial Utvecklare (Social Life Developer) | Augustenborg MKB office, on Thursday 27 of February, 2020 @ 10:00 a.m. | 1 | Semi-Structured In-Depth Interview (55 minutes) | (A., Interview 1) | * Forwarded leads for Greenhouse tenant Agneta Timofei to meet and help arrange Focus Group & contacts for MKB Area Responsible and Strategic Sustainability Project Manager |
| Greenhouse Project | Resident | Monday 02 March 2020 @ 11:00 a.m. in their 7th floor apartment | 2 | Introductory Informal Interview (50 minutes) | (A., Interview 2) | Informative first interview and tour of the Greenhouse. Arranged Focus Group for following week. Key research figures |
| Greenhouse Project | Resident | Monday 02 March 2020 @ 11:00 a.m. in their 7th floor apartment | 2 | Introductory Informal Interview (50 minutes) | (O., Interview 2) | Informative first interview and tour of the Greenhouse. Arranged Focus Group for following week. Key research figures |
| MKB | Fastlignet Förvaltare (Real Estate Manager) | MKB Office in Augustenborg on Thursday 05 March 2020 @14:00 | 3 | Semi-Structured In-Depth Interview (55 minutes) | (M., Interview 3) | *Overlooking and managing the whole area. Preferred me to MKB Sustainability Project Manager. |
| Greenhouse Project | Resident | Green Room on Tuesday 10 March 2020 @ 19:00 p.m. | 4 | Focus Group (37 minutes) | (X1., Interview 4) | Detailed session about all social dynamics, residential politics & neighbouring aspects of the Greenhouse, also about MKB governance & role in promoting SS, etc.. |
| Greenhouse Project | Resident | Green Room on Tuesday 10 March 2020 @ 19:00 p.m. | 4 | Focus Group (37 minutes) | (M., Interview 4) | Ditto |
| Greenhouse Project | Resident | Green Room on Tuesday 10 March 2020 @ 19:00 p.m. | 4 | Focus Group (37 minutes) | (U., Interview 4) | Ditto |
| Greenhouse Project | Resident | Green Room on Tuesday 10 March 2020 @ 19:00 p.m. | 4 | Focus Group (37 minutes) | (K2., Interview 4) | Ditto |
| Greenhouse Project | Resident | Green Room on Tuesday 10 March 2020 @ 19:00 p.m. | 4 | Focus Group (37 minutes) | (L., Interview 4) | Ditto |
| Greenhouse Project | Resident | Green Room on Tuesday 10 March 2020 @ 19:00 p.m. | 4 | Focus Group (37 minutes) | (A., Interview 4) | Ditto |
| Greenhouse Project | Resident | Green Room on Tuesday 10 March 2020 @ 19:00 p.m. | 4 | Focus Group (37 minutes) | (O., Interview 4) | Ditto |
| Greenhouse Project | Resident | Green Room on Tuesday 10 March 2020 @ 19:00 p.m. | 4 | Focus Group (37 minutes) | (Interview 4) | Ditto |
| MKB | Strategisk Projektledare Hållbarhet (Strategic Sustainability Project Manager) | MKB Office in Augustenborg on Friday 13 March 2020 @ 14:00 | 5 | Semi-structured In-Depth Interview (55 minutes) | (F., Interview 5) | * Forwarded digital historical material about both Augustenborg & Greenhouse *Thoroughly knowledgeable with MKB's SS vision & policy. |
| Greenhouse Project | Resident | Friday 13 March 2020 @ 15:30 in their apartment on 7th Floor | 6 | Semi-structured In-Depth Interview (91 minutes) | (A., Interview 6) | Detailed Questions about the Greenhouse dynamics & gatherings details. |
| Greenhouse Project | Resident | Friday 13 March 2020 @ 15:30 in their apartment on 7th Floor | 6 | Semi-structured In-Depth Interview (91 minutes) | (O., Interview 6) | Detailed Questions about the Greenhouse dynamics & gatherings details. |
| MKB | Projektledare Hållbarhet (Sustainability Project Manager) | Thursday 26 March 2020 @ 10:00 a.m. via Zoom | 7 | Semi-structured In-Depth Interview (90 minutes) | (R., Interview 7) | Has thorough knowledge of both Augustenborg Ecology & the Greenhouse in terms of history, area, statistics and community interaction dynamics. |