FLOATHUB!
mobile living in the 21st century
Re-imagining housing in the quest for freedom

DANIELA LAMARTINE / Laboratory of Sustainable Architectural Production

FLOATCLUB - Receptions Desk - Acquire Membership & Information
PIER - Energy Supplier
PIER - Seabed
FLOATHOUSE - Residency on Water
EVENT - Enjoy shows and learn about a life on water
RECYCLEBOAT - Waste being recycled and re-used
INFOTOWER - Upcoming events and activities
FLOATING FACTORY - Construction Workshop

FLOATHUB! - Mobil boende på 2000-talet
Ett nytt boende i strävan efter frihet
FLOATHUB!
Re-imagining housing in the quest for freedom
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DEDICATION

For those who wish to live mobile or those passionate of a lifestyle of nomadic means.
Sweden is experiencing a national housing shortage. The housing market has created a financial inequality between generations and as a result, homeownership has become unachievable for many. Citizens who have become tired of the situation have found their solution in the mobile dwelling. With the main motivation of freedom this thesis examines the role of the mobile dwelling and those who strive for mobile lifestyles, while discussing whether it is a viable way of living as it is constantly challenged.

The focus has been on investigating the challenges of living mobile, as the dwelling does not address the broader challenge of long-term financial security. Also, as the long-term residency is constantly challenged by its location through legislation it contributes to the already vulnerable situation.

The project concentrates on mobile living on water in the context of Stockholm, where I argue that its water as an asset has not yet been fully explored. The covered case studies have demonstrated the challenges of long-term residency for mobile dwellers have been overcome through different steps of actions, which in turn has contributed to the freedom of mobility.

This project proposes that in keeping the benefits of mobile living and re-imagining a framework, mobile residents using their own assets and know-how, can through a collective action become developers themselves. Focus is given to the achievement of long-term financial and residential security and as a result, the mobile dwelling becomes more than a temporary solution.

**Key words:**
Housing Shortage, Millennials, Nomad, Mobility, Mobile dwelling, Living on water, Sedentary, Flexible/Rigid
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Furthermore, I would also like to thank all those who contributed through the participation of interviews used for case studies for this research project. Without their participation the validation of the project would not have been the same.

Finally, I must express my profound gratitude to my parents and to my partner for providing me with unfailing support and continuous encouragement. Moreover, my partner for introducing me to a mobile lifestyle on water. This accomplishment would not have been possible without them.

Thank you.
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INTRODUCTION

Sweden is currently experiencing a national housing shortage. The lack of affordable housing and long housing queue has shaped the housing crisis of the 21st century. Excluded millennials who have become tired of the situation have like myself turned away to find own solutions; challenging the traditional ways of living.

As a young adult I have been struggling to find an accommodation in the city of Stockholm. However, this all changed as my partner and I bought a sailboat for a minimal amount of money. This was our first step towards ownership and independency; a way of owning without being burdened with loans and debt. For the first time, we could call something our own home. Today people are willing to live smaller and more mobile as seen in trending Tiny house movement. Exhibiting itself as tiny houses, trailers, reshaped vehicles and houseboats it contains the quality of mobility with the main motivation of freedom.

Utopian visions such as Ron Herrons Walking City, Yona Friedmans Villa Spatiale, or even Constant Nieuwenhuys’ imaginary city concept of New Babylon, are some examples of the nomadic ideas of 1960s that shared the motivation of freedom. The visions involved the city being flexible and able to respond to individual needs and desires. Through its flexibility it could empower each citizen. These visions were never truly achieved, but maybe now it is possible to come closer.

The purpose of this thesis is to increase the understanding on how the mobile dwelling is relevant today and its relation to freedom. Through case studies and conducted interviews of mobile dwellers, I discuss whether the mobile dwelling is an affordable alternative as I relate it to our current housing system. I will also discuss the many difficulties of living mobile, as it is constantly being challenged through legislations and regulations.

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The main research question of the thesis is:

**How can the mobile dwelling take a bigger societal role in addressing the 21st century Swedish housing crisis, where long-term financial security is substituted for freedom?**

Working with this thesis I have asked questions like, how can we create a new framework to obtain a home? Can we take the benefits from living mobile? And more importantly, can we use the vulnerability of the situation to create financial and residential security through a collective action?

The thesis is divided in five parts. The first part deals with the background of the project and is divided in three sections. Each section focuses on the overall understanding of the role and lifestyle the mobile dwelling offers in Western Society and relates it to the housing crisis and issues that emerge, which supports the design phase of the project. The second part deals with the context of Stockholm in exploring mobility and residency on water. This chapter looks into case studies and relates to the issues described in the background that supports both the design phase and strategy of the project. The third part analyses the housing system and alternative ways of financing with the aim to shape the proposal. The fourth part focuses on the local context of Stockholm and the specific implementation strategies to be used in the project. The fifth part deals with the design phase and focuses on the local implementation on my chosen site.

The limitations of the study will be the into depth analysis and design proposal on an architectural scale in the context of Stockholm. The solution is not seen to solve the housing crisis, but instead demonstrate possibilities. The focus will be in the physicality, social and economic aspects of the existing conditions.

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The Tiny House Movement (also known as the "small house movement") is a description for the architectural and social movement that encourages living in small homes. The tiny house trend began as a social movement in the United States in the 1990s. The movement is emphasized by its environmental and financial concerns, and the desire of the achievement of freedom.
BACKGROUND

PART 01

Housing - a continuing emergency
PART 02
The role of mobile dwellings in Western society

PART 03
The modern nomad - A new commodity of life
HOUSING- A CONTINUING EMERGENCY
1.1 Overview

Sweden's population is currently suffering from a national housing shortage as there is a lack of housing in 255 out of 290 municipalities. This can be seen through the long housing queue that exists in many municipalities and also on the high housing prices we are facing today. As an example, the average time before obtaining a rental apartment was ten years in Stockholm 2017.

Sweden's goal is to build over 710 000 accommodations each year in order to meet the housing needs by 2025. However, according to analysts of the Swedish authority Boverket, the housing shortage cannot be solved through a building boom. Instead, they state that the current situation is more about an inefficient utilization of existing housing stock.

The architects Tatjna Schneider and Jeremy Till touch on the same topic as they refer to a situation of "built-in obsolescence". In a journal they state, “...the housing sector is building in obsolescence through inflexibility [...] Inflexibility means that once the users’ needs change, as inevitably they do, the occupants have no choice but to move. This keeps the housing market in a state of permanent demand.”

Authorities argues that the solution lies in reforms to increase the residents’ mobility within the housing market so existing accommodations can be used more efficiently. But as these reforms requires change of regulations, taxes and subsidies, it becomes a vulnerable political issue. Consequently, it has become difficult for society to respond to citizens housing needs. This section will deal with the challenges Sweden's citizens are facing, especially millennials.
1.2 The Swedish Housing System

The Swedish plan monopoly means that it is the municipalities that decide how, when and where to build. However, the municipality can only point out areas where housing is needed but cannot determine what kind of housing it is, nor the costs. Instead, the current housing supply is dominated by large speculative developers which primary interest is to be profitable thus contributing to the rising housing prices.9

The process of obtaining homes today is risky and complex as we rely on large companies who buy land, borrow, engage contractors and build mass housing for citizens, usually sold at market rate. Ownership today is often based on heavy indebtedness as you are expected to be able to invest a large amount of money. From an economic standpoint, residents generally agree that homeownership is the most prominent means of building wealth and the main entrance to the housing market and motivates the risk.10

Within the Swedish housing supply, it is the municipal housing companies that has the task of providing a “sustainable and affordable housing for all” known as Allmännyttan.11 However, the rental sector in Sweden has decreased from 110,189 to 72,054 during the last 10 years due to the sell-out of Allmännyttan.12 According to Stockholm City the motives were to “give the opportunity for tenants to own their accommodation” and therefore strengthen their vulnerable situation.13

Policymakers has despite of a household’s economic circumstances, supported homeownership as an important means of building wealth. In other municipalities the sell-out was done to provide financial space to release capital for new production.14 This process has created a mistrust and insecurity for those who are looking for an affordable home.

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11 Allmännytan is a municipal housing company throughout Sweden, with the task of providing sustainable and affordable housing for all in form of tenancy.
1.3 The Generation Gap

Today there are 213,000 involuntary young adults in Sweden unable to live on their own, which is the highest rate ever.15 A report conducted by the tenant association Hyresgästföreningen demonstrates an increasing number of young adults in insecure housing situations. Moving between friends or staying under uncertain housing contracts has become a part of their everyday life. The time it takes to collect capital for the acquisition of an apartment seems like a far-fetched dream for most, including myself. Instead the rental accommodation has become the most demanded form of housing as it makes the step into society easier.16

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16 Ibid.
1.4 Co-housing & citizen initiative

Throughout history, the need of construction of housing has been practised as a private matter mainly for profit. However, there has been other intuitive form of housing development before. The first major state housing policy initiative occurred in 1904 when the Swedish state created opportunities for the working class to take state-owned home loans called *Egnahemslån* as a way to improve living conditions. This shaped *Egnahemsrörelsen* that aimed to encourage the working class to acquire a self-built home and was quite successful. 17

The support of state loan and subsidies also allowed citizens to shape cooperative housing that is dominant today, known as a tenant ownership co-op. Over the years the co-operatives have acted as a response to periods of housing shortages that contributed to the vulnerability of tenants. 18 Co-operatives are organized and operated to benefit its members where the main goal is to give its members influence to control their situation. Through collective building a housing co-op can provide good housing to large groups in society. Unnecessary costs would be cut off and instead give room for quality and increased standards. The profits made was accumulated by residents themselves, rather than distributed to private landlords. One of the most well-known co-operatives is HSB who focused in improving the conditions through infrastructural use such as common laundry facilities. 19

Nowadays the cooperative housing is known as condominium association. Residents buy their tenant’s right to approximately half the price of the real estate value. The association takes a collective loan for the rest of the purchase price of the construction. 20

The purpose of the system was to shift the financing to residents rather than constructors. The system has worked well from the point of view of Swedish state, builders and banks, but has been on the expense of the residents. As members leave, they sell their equity share to new members, but the loan remains within the collective. In this way, people can earn a limited equity stake in value of their home.

In cities like Stockholm or Gothenburg with high land values, housing price inflation has become an issue. The restrictions on the sale price of members’ limited equity stakes were removed by government deregulation of the housing co-op sector in the 1980s. This allowed the value of occupancy rights to float in a free market for member’s equity stakes. For lower-income people it means they can no longer afford to join a tenant ownership.

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18 Ibid.
Fig. 3 Housing prices development 1986 - 2014, Sweden
(Source: rikatillsammans.se, Jan Bolmeson, 2015)
The housing market favours ownership over rental contracts, as it is seen as a private investment that will increase over time. This creates inequalities, as not everyone can afford to invest in obtaining an ownership depending on their class and background. It becomes unrealistic for groups of society to accommodate to the current housing market in order to follow previous generations. This creates a financial inequality between generations shaping a generation gap. Instead of relying on speculative developers or last resort options which shapes the most vulnerable, we need new viable ways in which people can better meet their housing needs.
2.1 Overview

We are in need for affordable housing to better meet citizens housing needs. Looking back in history, the mobile dwelling has sought to answer these questions in the past. This section will therefore look at the historic context of the mobile dwelling and how societal conditions has affected its role today.
2.2 The role of mobile dwellings in Western society

Authorities have had a varied role when it comes to mobile dwellings. In 1905 the San Francisco Earthquake and Fire marked the first use of mobile housing in modern sense.\textsuperscript{21} At the time authorities provided mobile dwellings as aid housing, but as the camps closed, many refugees kept their houses resulting in homeownership for low-income families. As a result, the mobile dwelling was perceived of being a necessity for the poor and vulnerable.

Over the years, governments and architects have been at the basis of new living environments when housing shortages have been difficult. The construction of new urban environment highlighted its interest on sedentary settlements as the common idea of a home represented something stable and connected to territory. (See example Figure 6.).

Even so, the demand of housing has led architects on their pursuit to be transformative and challenging the role of architecture. One of them was the architect Buckminster Fuller who believed in the power of design could improve the human condition.\textsuperscript{22} Fullers design the Dymaxion House represented one of the first examples of a mobile and self-sufficient housing. It was meant to fulfill all the basic needs of life at a low cost with universal applicability. Also, it offered solutions to management of resources as the house could be adapted to any location to use resources found on site, similarly to the lifestyle of the cultural nomads. Even though Fuller achieved wide publicity through articles of the architectural journal T-Square/ SHELTER, only two prototypes were built.

\textsuperscript{21} Cameron Sinclair and Stohr Kate; Design Like You Give A Damn, Architectural Responses to Humanitarian Crises, United Kingdom: Kingdom Press, 2006.
\textsuperscript{22} Ibid.
According to the report UNECE/EUROSTAT of housing typologies in Europe, the mobile dwelling stands in the category as a non-conventional housing unit that is not designed for habitation. Solomon 3
Also it links the mobile dwelling of being temporary, containing inadequate living conditions that is inhabited by the homeless. 4

Still, in recent years governments continue to use both trailers and mobile homes to victims of natural disasters and housing shortages. In the U.S authorities state the use of mobile dwellings being “a temporary intermediate long-term shelter, until they can repair, rebuild or solve their permanent, long term needs”. The mobile dwelling is being encouraged as a solution towards temporary housing shortages rather than as an accepted housing typology. As comfort is compromised in favour of mobility, who would want to live mobile?

References:

Fig.6 The changing role of the architect & Urban occurrences
Diagram by author. Assembly of authors research.
CHAPTER 02/ The role of mobile dwellings in Western society
Considering the cultural nomads, their surrounding was used as a resource that was open to everyone and did not focus on ownership or the abstract concept of right of usage. Instead, mobility acted as an organizing principal of their survival allowing the nomads to adapt to different conditions, whether environmental, economic or other. The nomads’ identity and security lay in what they brought with them and the relationships with others on the route.\(^{26}\)

For instance, the Sámi’s traditional building cot was characterized by recycling and made in different materials depending on time and place. Likewise, the Roma people have for centuries been able to sustain themselves through their handcraft and expertise on crafts, music and other, where they frequently travelled for new goods to sell.\(^{27}\)

But as different governments have been critical towards groups that were displacing themselves from a settled and civilized society, there has been situations where the state has discouraged and challenged nomadic groups. Europe is probably the most intolerant towards nomadic groups.\(^{28}\)

For instance, the exclusion of Roma people was a legitimated measure in several municipalities throughout Sweden in the first half of the 20th century.\(^{29}\) Local authorities have over the years been discouraged from providing sites for Roma people in order limit the possibilities of their nomadic living patterns. It was later on as societies have dealt with nomadic groups through acts of assimilation in order to accommodate them within the system’s verifiable framework, as they were seen as victims of their traditional lifestyle.\(^{30}\)


\(^{27}\) Ibid., 421.

\(^{28}\) Ibid..


CHAPTER 02 / The role of mobile dwellings in Western society

Fig. 7 Cultural nomads
(Diagram by author. Assembly of authors research.)
The influence is also reflected legally. Living mobile became a part of a larger political project in order to create the modern citizen in a civilised sedentary lifestyle.\textsuperscript{31} Tourism and the desire to detach yourself from society has encouraged the preservation of alternative simpler lifestyles into a leisure landscape, where the need of external services to support the lifestyle became restricted to sites of recreation, found in such as marinas and campsites.\textsuperscript{32} While geographical mobility is appreciated in terms of freedom, the long-term residency has consequently been challenged by prejudicial zoning, building agencies and legislations.

\begin{itemize}
\item \textsuperscript{32} Høyer Leivinstad, Hege. \textit{Lives on Wheels, Caravan Homes in Contemporary Europe}, PhD diss., Stockholm University, 2015, 82.
\end{itemize}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{fig8}
\caption{Sizes of mobile dwellings when applying to regulations}
\end{figure}

Based on the \textit{Swedish Allemansrätten} (public right of access) gives us the limited right to stay on land or water for a short period period of time, even though land or water is owned by someone else. However, the land should not be subjected to any significant inconvenience or damage on the property or violate the privacy of the home. According to SFS 1975:1313 Terrängkörninglag- trailers are classified as vehicles making mobility limited as it needs to apply to Traffic regulations. Source: Naturvårdsverket & Länsstyrelsen
Fig. 9 Residential mobility and need of external services
(Assembly of authors research)
The mobile dwelling has both been used as a solution to continuous housing crises but also responded to individual needs. However, as the mobile dwelling has been associated as a shelter for the homeless and vulnerable cultural mobile groups of society, it has contributed to the social stigmas today. Consequently, the long-term use has become challenged instead of seeing its potential.

**SOCIAL STIGMAS**
The association of vulnerable and cultural groups of society has maintained the social stigmas.
While the mobile dwelling has served its role as housing for vulnerable groups in society, it has continuously been associated with being a necessity. However, according to the social anthropologist Hege Høyer Leivinstad who has studied the permanent living in caravans and motorhomes, the majority of those who have chosen to live in mobile homes in the US, have a higher income and education than the average American. She also states that the growing use of mobile dwellings in Europe from lower middle class and working-class Europeans are rather related to issues concerning lifestyle changes than an economical restrain. 33

3.2 Between ‘necessity and ‘choice’

Of those who choose to live in mobile dwellings, the landscape geographer J.B. Jackson, sees that the importance of the inhabitation lies in the realization of freedom, as he states “the freedom from burdensome emotional ties with the environment, freedom from communal responsibilities, freedom from the tyranny of the traditional home and its possessions; the freedom from belonging to a tight knit social order; and above all, the freedom to move to somewhere else.” Jackson considers the “freedom from” as an escape from societal problems where the physical mobility becomes important, as it becomes a necessity of a withdrawal from immobility both physically and socially.

But the realization of freedom is rather related to the values the recreational trailer had as it first appeared in America by the 1950’s. According to the professor of environmental design Allan D. Wallis, the travel trailer developed through the establishment of leisure and holidays for the working-class. It represented a return to nature and offered an escape from geographical boundaries that limited social opportunities of a neighbourhood or town. It thus rejected the constraints of a fixed community. Instead it represented values of individuality and freedom through mobility and strived for a classless society.

These values become clear in Leivestads’ research of the caravanners as they express social life being inaccessible in the urban environment and that in their view, the rigidity of the city is problematic. Also, they carried conflicted relations to “the nation state, to politics and to what they see as a loss of morality in their neighbourhoods caused by economic crisis and immigration.” Instead the search of a community is provided by the camping site they can no longer find at home. The sharing of land, time, skills and other resources are being described as important assets that contribute to the values of their mobile lifestyle.

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CHAPTER 03/ The modern nomad - A new commodity of life

CARAVANNERS

Local Network

CARAVAN/RV
Catalouge from industries

SELF-REALIZATION, AUTONOMY, COMMUNITY
3.3 Creative solutions

During recent years there has been a shed of light in public media how young adults have found their own creative ways of accommodating themselves. E.g. in London many young adults are fleeing the escalating property prices, as they have risen by 86% since 2009.\textsuperscript{37} Instead, young adults have turned to houseboat owning seen on Regent’s Canal. Moving every two weeks due to regulations, it has become an attractive alternative in order to reduce the monthly expenses. One of those residents is Matthew Winters who states that living on a houseboat has advanced his acting career due to the many possibilities it offered. He also states that it includes the decision making of a new lifestyle. “That feeling when you move house and a fresh start — you get that every two weeks!”\textsuperscript{38} Even though the dwelling requires constant maintenance and is seen as a part time job, knowledge and collective support is being exchanged which help shape the boating community.

Christoffer is another example of a modern mobile dweller as he has built his own bike-house of 3m\textsuperscript{2} located in Stockholm. It is parked on a street outside his bicycle shop. “Is it a house? Is it a vehicle? Is it a bicycle? The confusion doesn’t make it easy to determine into the regulative framework.” he said.\textsuperscript{39} However, he states that its use is often challenged. Safety is an issue since the accommodation is particularly vulnerable to intruders and other dangers. It is also dependent on external services, thus challenging its mobility. Self-sufficiency remains an ideal where the complementing site infrastructure is at times strictly necessary to the very functioning of the mobile dwelling. According to Christoffer, the bike-house still offers a cheaper way of living, brings freedom through its mobility and in the relief of ownership. Investments can instead be made to leisure time, experiences and social life.

The creative solutions are being revealed as living mobile within society means the necessity to bypass building codes. The reasons are merely financial. Residents of mobile dwellings state, when compared to renting or buying the mobile dwelling offers a more affordable way of living. Being loose property, they are not obligated to taxes, high costs or be heavy indebted. However, like most manufactured products, the dwelling becomes a depreciable asset that lose values over time.

Jackson further explains this, as he sees the mobile house as temporary when people are looking for that next step to something more permanent and long-lasting; “the low-cost dwelling for the future —lacking in solidity, lacking permanence, lacking in charm, but inexpensive, convenient and mobile”.\textsuperscript{40} However, as people are choosing this lifestyle his view becomes disputable.

\textsuperscript{38} Ibid.
\textsuperscript{39} Christoffer, Owner of bike-house. Individual interview, Stockholm, 2017-10-17.
\textsuperscript{40} Jackson, John Brinckerhoff, Discovering the Vernacular Landscape, New Haven and London: Yale University Press, 1984, 100.
MODERN NOMAD

The notion of home is in constant change including more than the basic need of 'shelter'

AUTONOMY, FREEDOM, OPPORTUNITIES
CHAPTER 03/ The modern nomad- A new commodity of life

Bikehouse

"The freedom to be able to sleep where you want". I can park wherever I want, in the forest, a lake.
Christoffer "Nubbe" Svensson, Stockholm

Nässjö House trailer

Self-built house on a trailer, did not see the need to adjust to the housing shortage.
Lina Spåls, Nässjö

Houseboats

Young adults moving to houseboats.
London

Fig. 10 Mobile dwellers
(Assembly of authors research)
Living mobile is no longer bound to a certain group of people as it was before. In the cases brought forward in this chapter demonstrates how users value the mobile lifestyle, but the main reasons differ. In one hand the cases of mobile dwelling represent a conscious choice to an alternative lifestyle where the term “freedom from” is being brought forward through mobility. On the other hand, it has taken a role in responding to issues of the current housing market. Instead it stands for freedom from societies compulsions that force people into insecure accommodations with high costs.

Even so, the standard between the different households cannot be compared in the request of affordability or in their value system that may provide a long-term financial or residential security, making the sustenance within regulations a questionable way of living. Instead, both the economic and social vulnerability creates a precarious situation that is still dominant. Therefore the location becomes even more important as it provides values to the lifestyle.

LOCATION

The location is important as it provides values to the lifestyle.
CONTEXT
4.1 Overview

The location is important to mobile dwellers as it provides values to the mobile lifestyle. As being mobile is challenged by restrictions and regulations of each location, I decided to look at water, as the freedom of mobility is less restricted on water than on land. Based on my overall experience on living on water (since the acquisition of a sailboat) mobility on water is already an integral part of Stockholm’s culture. Stockholm has always been a city with a close connection to the water. The water surrounding the city made communication and operations possible with the rest of the world and is one of the main reasons to the city’s growth. Therefore, the marine operations have always been an important asset to the city. However, I argue that the water as an asset has not been fully explored to meet its full potential.

This section will look at the possibilities for mobility on water. Restrictions become more evident when applying length of time to the equation, as you are not normally allowed to stay within one place for an indefinite amount of time. Still, people have made residency on water possible, both through their occupancy and in their achievement of legal status.

I have localized four different situations in Stockholm where people have found ways of living for an extended amount of time on water. Through conducted interviews and site visits I explored the following: What made living on boats possible? What stages are required before it becomes legal? What are the possibilities and issues?
4.2 Legalities on Water

Over the years, Stockholm’s inhabitants have resorted to boats, barges and half-old wrecks when housing shortages have been difficult. During the 1980s it became illegal to live permanently on a boat in Stockholm. Ever since, living on a boat has been a grey zone.

According to the Swedish tax agency Skatteverket, a houseboat is considered to be loose property. If it is not fixed to land in such a way that it cannot be relocated easily, it does not count as a building or real estate nor requiring a building permit. However, Boverket has assessed that the permanent use of boat as dwelling leads to classification of a building, which in turn requires building permits. But the boundaries have been difficult to define as there is no time limit on how long you can spend time on the boat before it counts as a dwelling.

Today there is wide range of people living on water. The board of Stockholms Hamn AB acknowledges that in practice, approximately 400 households live unofficially permanently on their boats in Stockholm.

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43 Ibid.
This right gives us the limited right to stay on land or water for a short period of time, even though land or water is owned by someone else. However, the land should not be subjected to any significant inconvenience or damage on the property or violate the privacy of the home. (Source: Naturvårdsverket och Länsstyrelsen.)

Boat clubs and marinas offer temporary spots for guests to moore for payment. Facilities and services are provided where they offer WC/-Shower, Kitchen, restaurants and workshop.

Seasonal residency is as a part of the recreational status and does not require building permits. The seasonal activity for boat harbors is between April - October. (Source: Boverket (B5013-1450 / 97))

Seasonal residency is often faced with extensive bureaucratic obstacles. The unofficial accommodation is stated to bring consequences to the environment as recreational boats don't fulfill the sanitary regulations of permanent residency.

Boat residency is often faced with extensive bureaucratic obstacles. The unofficial accommodation is stated to bring consequences to the environment as recreational boats don't fulfill the sanitary regulations of permanent residency.

One of the biggest obstacles is that you are not allowed to register the boat as primary residency as you need to be registered to a property and requires a building permit. Even so, long-term residency on water has been made possible in the achievement of legal status.

Stockholms Hamn provides emptying stations for waste disposal in order to avoid environmental pollution.
The municipal organization Stockholms Hamnar allows boat residency on berths through agreements if the ship is considered to add value to the cityscape and fulfills their list of requirements. But in practice they are not allowed to be registered as residency and are not legal.

If there is no owner registered on the boat, there is no possibility to contact the owner. Therefore, the city cannot remove moored boats as doing so could make them responsible for acquisitive crime. Also, if you moor to a location with uncertain ownership contracts it becomes difficult to challenge.

**ASSOCIATIONS INFORMAL**

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**LEGAL GREY ZONES**

The case studies demonstrate associations have taken steps to become legal and extend the seasonal status. Making agreements with the municipality allows the long-term berth with the conditions on making a non-environmental damage.

**OCCUPATION**

Heroes of the Oilbridge

**TIME**

**OCCUPANCY**

**SHORT TERM**

**SEASONAL**

**SITE IMPLEMENTATION**

**CASE STUDIES ON WATER**
The municipal organization Stockholms Hamnar allows boat residency on berths through agreements if the ship is considered to add value to the cityscape and fulfills their list of requirements. But in practice they are not allowed to be registered as residency and is not legal.

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The case studies demonstrate associations have taken steps to become legal and extend the seasonal status. Making agreements with the municipality allows the long-term berth with the conditions on making a non-environmental damage.

ASSOCIATIONS INFORMAL

Årstaviken
Bällstaviken
Riddarfjärden
Saltsjön

PAMPAS MARINA

LEGAL STATUS

RESIDENCY

AGREEMENT

ASSOCIATION

ÅRSTAVIKEN

SOLNA SKEPPSFÖRENING

LEGAL STATUS

RESIDENCY

ILLEGAL STATUS

2.

1.

GREY ZONE

LEGAL RESIDENCY

RESIDENCY

LEGAL STATUS

RESIDENCY

AGREEMENT

ASSOCIATION

SÖDRA MÅLARSTRAND

LEGAL STATUS

RESIDENCY

ILLEGAL STATUS

1.

2.

3.

4.

5.

6.

7.

8.

9.

SEASONAL

SHORT TERM

RESIDENCY

TIME

OCCUPANCY

OCCUPATION

RESIDENCY ON WATER
4.3 Case Study - Pirate Harbour

One of those informal dwellers is Lasse who has lived for 8 years on his boat. He is moored on what is commonly known as the Pirate Harbour, which is an old abandoned oil pier that connects to the mainland through a bridge on the bay Årstaviken. It was used to supply oil to the hospital Södersjukhuset from other ships, but in 1996 the hospital stopped using oil.

Through an interview I had the pleasure to meet Lasse who, like many shares the story of the insecurities of the housing market. Before moving to his boat, he dwelled on secondary contracts. But as the lease was suddenly withdrawn he had to move out. “… then I had nowhere to go. It was going to take too long and be too expensive to buy something, so I took the boat instead.” Lasse said. 

The boat is 25 meters long and was fully equipped and restored for habitation. However, as he was searching for a place to locate himself legally, he wasn’t allowed to stay on surrounding docks or harbours with the argument of it being an “emergency dock for other boats”. In the end he found the oil pier and as soon as he moored here, more people followed.

Together with four other boat-owners they share the space of the pier together. He states, “Everyone is welcome!”. Above the entrance there is a wooden sign carved Heroes of the Oil Bridge, where just a couple of years ago Lasse created the informal association.

But as the cluster of boats has retracted attention of by passers, public discourses have focused extensively on the negative impacts on the local area. The informal dwellers are being seen as environmental polluters that discharge sewage and fuel into the water, and being unknown, they disrupt the space. Consequently, the municipality has received a lot of complaints and have been encouraged to deal with the situation.

According to the municipality the boats have moored illegally without consent. But the combination between the uncertainties of ownership of the oil pier due to many old contracts, the occupation has been difficult to challenge. As there is no owner registered for the passenger boats, there is no possibility to contact the owner. Therefore, the city cannot remove the moored boats as doing so could make them responsible for acquisitive crime. Even so, the disturbance of occupancy makes the boat residents in continuous jeopardy of being re-located. In January 2018 the municipality decided to demolish the pier due to the compilation of complaints from pass-byers.

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44 Lasse; resident on the Pirate Harbour. Individual Interview, Stockholm, 2018-02-06
Fig. 12 View of entrance to the oil pier. Photograph by author.

Fig. 13 Process of residency. Diagram by author. Assembly of authors research.
4.4 Case Study- Bällstaviken

On a different bay in Bällstaviken, lies a formal association called Solna Skeppsförening. There are four boats attached to a common flatboat. The union was shaped in 1997 with seven members inscribed and the location was made possible through an agreement with the municipality.

One of the members is Josefin who lives on the boat together with her husband and two children approximately 40% of their time. They use it as a secondary residence close to the city, where the only thing keeping them from living in the boat long-term is the illegal status. They bought themselves a spot into the association and has partly lived here for three years. Before that they moored illegally together with other boat owners in the bay Skurusundet, but as the bay became a part of a construction site, several boat owners had to move and find a new location. “We were looking a lot after other places to moor when we moved from Nacka, but it was incredibly difficult. And with two little children we didn’t want to be moored anywhere where we could be told to move. We want our home, a home insurance, we want the security. Knowing that it works. Then we found this place.” Josefin explains in the interview.46

In the agreement the location provides a site for houseboats for recreational use. One of the agreements include to not make any environmental damage and instead promote a qualitative boat environment. Within the association the purpose is to promote members financial interests by operating a pier for the members boats. Members participate into shaping and maintaining their community, discussing everything from a combustion toilet and how to make it safer on the bridge.

In the end of the interview she continues, “It seems good to just raise the question in why we are so narrow-minded in society… we sort of produce problems of something that is not a problem. It’s really sad. I have a dream that when my children grow up they will have the opportunity to choose this lifestyle… Not that they are being limited because someone has set up dumb rules.”

46 Josefin, member of Solna Skeppsförening, Individual interview, Stockholm 2018-02-08
Gathered people shared of interest
An agreement
Arrangement of agreements and location with municipality
The shaping of a cooperation

Fig. 14 Entrance to the moored boats
Photograph by author

Fig. 15 Process of residency
Diagram by author. Assembly of authors research.
4.5 Case Study - Pampas Marina

There are boat residents who have achieved legal status. The privately-owned marina Pampas Marina, was the first one in Sweden that allowed a legal long-term residency on water aside with several businesses and restaurants in the same location. After allowing berth of boats since 1997, the marina started out a four-year negotiation with the municipality which eventually ended up allowing long-term residency on boats in the marina. Thereafter it has acted as a role model that has influenced other municipalities in acknowledging the official residency on boats.
Fig.16- Process of residency  Diagram by author.
Assembly of authors research.

Fig.17- Aquavilla moored houseboats
Photograph by Janerik Henriksson / TT, SVT
4.6 Case Study- Södra Mälarstrand

The same is acknowledged in the bay Södra Mälarstrand where long-term residency on water came true in 2011.

Björn is one of the boat residents of Södra Mälarstrand and was a part of the struggle of making residency on boats legal. He has lived on his current boat Viking since 1997. He described the area at the time being unkempt with no water connections nor waste management. He described the situation extensively primitive but still pleasant.

The formation of the association Södra Mälarsstrands Förening lead to the delegation and responsibility of the management of the dock to the association. “We decided which boats were supposed to be here, we looked at everything, electricity meters, water, we inspected the ships to see if they were seaworthy and reported to Stockholms Harbor AB. So, they had more or less delegated the management of the dock to us.” Björn explains.  

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47 Asplund, Björn, boat resident, Individual interview, 2018- 02-07
Fig.18 Björn on his boat Viking
Photograph by author.

Fig.19 View from the bedroom
Photograph by author.
The same year, together with the politician Lena Adelsohn Liljeroth, a motion was sent to politicians to allow boats to be used as a legal residence with the main argument of “ships and boats of all kinds are an important asset to the city image”. But as the motion continued to expand it was stated that to get a berth space in Stockholm the boat-owners had several criteria to fulfil.

One of them was that the boat must have a ship-like silhouette to contribute to the overall surrounding. Furthermore, it became evident that one of the main reasons to why it is difficult to acknowledge the legality, is waste issues usually not being solved and coordinated between different institutions. The extensive responsibility between the institutions requires the area to be changed through the detail-plan. This would allow boats to connect to municipal infrastructure to receive water and sewage management, insurance solutions, public registration for residents and building permits made possible.

Moreover, allowing legal status requires the boat being a real estate. This is made possible if the detail plan indicates that a water area may be used for permanent residence on houseboats. While the process of changing the detail-plan can take several years to accomplish the main reason was to avoid increasing costs to the city.

In 2011, 12 years later, the first contracts were signed. According to the politician Tomas Rudin, he expresses the time length of investigative work due to a lack of political will. Even so, the City Council decided in 2008 to conduct a pilot project called Bo på Båt (Residency on Boats). Today it is the only pilot-project allowing residency on boats in Stockholm which covers only 25 boats. As a part of the implementation, leases were signed directly with the boat owners located on site.

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49 Ibid.
50 Rudin, Tomas, Motion av Tomas Rudin (S) om utvidgat pilotprojekt Bo på Båt, Vattenvillor, Dnr 309-306-2013, 2013
However, even though the interest of the project has been great, there has been a high financial threshold. According to Björn, every boater must make an investment of 35 000 – 100 000 SEK in order to achieve the criteria's in order to be approved. These costs are centralized in installations of sewerage, electricity, water to municipal connections and aesthetics. Also, the threshold has led to the assigned boat-spaces not been fully occupied. Consequently, this has led to the argument that the interest or demand has been small, thus limited the expansion of the pilot project Bo på Båt.  

53 Castwall, Johan, Cars, Henrik, Motion (2013:22) om utvidgat pilotprojekt Bo på Båt, Vattenvillor, Stockholms Standshus AB, Dnr 2013/3.2.2/69 , 2013
The different case studies demonstrate the same desires of living on water. However, there is a lack of resource and organization between the different boat communities. The achievement of legal residency requires certain commitment, time and organisation. At Pampas Marina and Södra Mälarstrand the main issues have been to solve the requirements for waste disposal and sewage. But the huge individual investments have created a huge threshold for boat users at Södra Mälarstrand. The lack of occupancy is then misleading as it is seen as lack of commitment and interest thus restricting the expansion of the project Bo på Båt. Therefore, there is a need to demonstrate the interest and commitment in order to make the threshold possible.

On the Pirate Harbour, the boat residents are in continuous jeopardy of being re-located despite being identified as a loophole as the legal status of boat residency is still limited to the possibility to moor to a specific location. Therefore, an agreement between municipalities and actors may allow the long-term occupancy on a location in exchange of maintenance of the area.
5.1 Overview

These case studies have demonstrated processes where long-term residency has been made possible. However, there is a need to enable an organization that can benefit the wider mobile community in achieving long-term security both residential and financially. This section will compare different housing systems and look at alternative ways of organizing and financing.
5.2 Boat vs. Housing systems

Comparing housing typologies, I identified three main ownership systems. They consist of full ownership, partly ownership and leasing.

The long-term acquisition of rental contracts is the least beneficial for the tenant as it has the highest accommodation cost, despite size and household. 54 Rental contracts are instead seen as an economical trap as it does not bring any increase in value for the tenant, as it is the landlord who has taken the financial risk and maintenance costs. The regular payment of living costs goes to someone else rather than being re-invested to the resident. The only risk for the tenant is the notice period of three months. Today, the rental apartment median costs is at 5386 SEK per month. 55

For condominiums it is a different story. The median price of monthly costs is at 5295 SEK. 56 However, as ownership is usually achieved through a loan, the resident has taken a heavy-debt where a combination of interest rate, monthly fees for maintenance is not included in the equation. Also, the accumulation for the down payment needed to take a loan can take several years to achieve. Still, you only partly own your apartment as it the association who owns the real estate. It is only in a long-term scenario, the sale of the condominium with raised property prices you achieve the reward.

The villas median cost is 6250 SEK a month.57 It is the more expensive housing form with the combination of heavy-debt ownership, maintenance and repair costs. In this model the resident has full ownership. Still, it is the same as for condominiums as it is in the long-term scenario through a sale achieve profit.

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55 Ibid.
56 Ibid.
57 Ibid.
HOW LONG DOES IT TAKE TO PAY OFF THE BOAT?

MONTHLY COSTS
CONDOMINIUM: 5295
VILLA: 6295
BOAT: (WINTER) 4011 (SUMMER) :2373
RENTAL: 5386
INHERENT: 5295

(SOURCE: SCB, Calculations on boat-residency based on long-term living on Årstavikens Seglingsällskap)

Fig.22 Financial comparisons
Diagram by author. Assembly of authors research.
Therefore, the acquisition of a boat becomes distinctive. Like most manufactured products, the long-term use does not give a long-term financial security. The mobile dwelling is loose property as it is not attached to land and therefore becomes a depreciable asset that lose value over time. When buying, you achieve ownership much faster than the other examples, whether it is a loan or paid directly. Therefore, I compare the economical difference with only the rental apartment. Either way, it is seen as a tangible asset to keep or sell after. Maintenance and repair costs are the costliest and in the same level as the villa. Still, when compared to rental contracts the payment of living costs could instead be invested to the asset and user.

In this comparison I took my boat as an example. For instance, the acquisition of the boat was in total 39 000 SEK from the second-hand market. If the boat would be paid off saying 4% like the condominium (combined interest rate and mortgages) it would take two years before the boat is paid off and monthly costs reduced to the average of 3037 SEK each month (including maintenance, repair and location costs based on the boat-club Årstavikens Segelsällskap). The difference between living costs between rental contracts and the boat would then be at a difference of 2348,5 SEK, which means 28 182 SEK in total/year, that could be reinvested to achieve the needed infrastructure to support the mobile lifestyle.

The calculations are based on individual households. In the process of entering the housing market I use myself as an example and in the acquisition of my boat.
5.3 Shared ownership & equity models

The question is whether the existing housing system can be made affordable both in the short and long run. Therefore, a system of a sustainable homeownership which supports wealth-building opportunities and affordability to a wider group is at focus. The interest has been directed towards shared equity and ownership models that diverge from the traditional real estate ideology. According to an evaluation of homeownership programs conducted by the Urban Institute in the US, shared equity models can effectively promote long-term affordable homeownership opportunities, in strong and weak housing markets. 59

The investigation of such models led me to approaches of co-housing such as Baugruppen (in English builder group) and Community Land Trust (CLT). These models share co-operative structures that enable governance and stewardship of important assets to their communities, such as self-built homes while maintaining affordability. However, the distinction of governance differs. In the co-housing model it is a limited group of people that finances their common needs through a collective pooling of their finances. The CLT on the other hand is community-led and directed to a wider community, focusing on both the existing community and future generations. 60 The CLT’s are characterized by two principles. First, permanent affordability is achieved through control of land, such as resale formulas that limit the appreciation a homeowner may claim on the individual investment. Secondly, long-term stewardship focuses on the preservation of an affordable resource, by a non-profit and for the community. This combined makes the CLT a more valid model to further pursue. 61

60 Ibid.
5.4 Reference Projects

Church Grove Project (RUSS)

The Rural Urban Synthesis Society (RUSS) works through a CLT and has together with the local council created a community driven housing project containing 33 affordable homes at Church Grove in Lewisham, London.

The neighbourhood aims at reducing the communities’ costs in order to achieve affordability through self-built housing and the establishment of a social economy. For instance the community also manages important assets such as food production.

There are nine different equity models within the project where you either share equity or ownership. E.g, in the shared equity, RUSS owns 20% with a shared ownership where tenants buy a minimum of 25% and rent the rest of the property, until residents can afford to buy more. Furthermore, applicants have opportunities to contribute in other ways; for example, administrative work. This makes each member seen as an asset. The same system can be used for the project, as different memberships enable the contribution of time and participation to benefit the community.

Wikihousing

The Wikihouse is a UK-based non-profit foundation that has developed an open-source construction set which allows anyone to design, share, produce and assemble their own house. Facing the housing crisis in the UK, the organization has focused on a concept of housing without debt. They demonstrate that the same house on the same site can cost as much as one third less when self-built by citizens themselves thus empowering them.

This is done through digital CNC technology and a shared platform. The components are locally manufactured, made out of plywood, cut by CNC machines and then fit together. This system may empower the boat community with tools as they can build their needs easily and be assembled in days or weeks, depending on their performance and precision. This makes it an affordable building alternative that I will use for the project.

6.1 Overview

Through my proposal I wish to enable both long-term financial security and residency by using the same policy framework and equity model of the CLT. In this way, the proposal engages with the boating community, future dwellers and city, allowing a mobile lifestyle for a long-term scenario. In my proposal a modern movement of *Hembyggsrörelse* is made possible as citizens can become developers themselves through a set of tools, using CNC technology.
6.2 FLOAT TRUST!

In the project I suggest an equity model that is slightly different but works both with the principles of the CLT and co-housing models, which I call Float Trust. The Float Trust focuses on sharing of infrastructures users would not be able to afford. Using the capital that could be re-invested (when comparing housing systems), residents are able to invest in affordability together.

The governance has a co-operative structure. As the needed infrastructure is directed to the boating community rather than the overall public, investments are made through pooling of resources and membership shares. The model also shares the same policies of the CLT in how to work with the wider community, as it engages with the city. The infrastructure becomes available for future users but benefits the boating community. For each invested infrastructure, it enables affordability, allowing a resilient, self-sufficient and affordable community. I see that residents become empowered through the equal access of resources the Float Trust offers. This will also facilitate long-term mobile residency on water.

As the project takes place on water, the stewardship of land of the CLT is instead replaced on the investment of floating infrastructures. This allows long-term affordability on behalf of the mobile community.

Continuously, the Float Trust receives responsibility of different sites by the municipality, with the conditions on making a non-environmental damage.

It has also the mission to ensure that the development is managed in the best way, but all members are jointly responsible. To achieve membership, you purchase an equity share. Together with the pooled membership shares and funds, it opens up the possibility for investors and sponsors to invest. The money is put in a kick-box that can collectively grow over time with an interest rate. Those who wish to use the necessary services, actively support the development, as the membership pays for the operating fees.

Using this model enables equity capital and to achieve long-term financial security for its members. Every member is seen as an asset where the contribution of time becomes valuable. The existence of resources within the community and activities enables an economy where any surplus generated is recycled to the community. Vital activities are: production, recycling and vending. When leaving the Float Trust, members receive their deposit back and an individual surplus of what has been growing collectively over the years.
CROWDSOURCING FUNDING

INTERESTED MOBILE COMMUNITY

MEMBERSHIP
Members pool their money as member equity.

FLOAT TRUST

MONEY TO BE RE-INVESTED

CONSTRUCTION OF NEEDS
to achieve affordability and support the mobile lifestyle

SHARED KICKBOX THAT GROWS OVER TIME

PLATFORMS ENABLE & INVITE

CHAPTER 06/ PROPOSAL
6.3 Urban Implementation Strategy

In order to make shape the **Float Trust**, an urban strategy is first implemented. The strategy includes a citizen-led approach that consists of three parts; shaping a network between existing boat communities, the establishment of a network of reliance (in order to allow long-term residency) and to promote a new housing system that allows long-term financial security. The framework is divided in different steps.

As there is a lack of resource and organization within existing boat communities, the first step is to create a network to involve both users and stakeholders. This is done by using the **Float Trust** main infrastructural unit **Floating Factory** that applies workshops in existing boating communities, using CNC technology. The self-building gives future residents a sense of ownership and influence. Also, residents will be involved in design and construction from the outset, with guidance from architects. This phase allows future residents to meet their neighbours, and ultimately undertake collective management and maintenance.
The workshop becomes a platform that connects both existing boat communities, boat associations and future boat dwellers. The shaping of a network and growth of interest allows the second step which includes to enable a shared vision. This will facilitate a negotiation and agreement with the municipality in the use of location. Referring to the initiative as a pilot project, called Float Hub it will allow long-term residency while preserving the values of freedom. Establishing these steps, citizens can use their own assets and through a collective action become developers themselves through the Float Trust.

Now citizens can become members and invest in the development. This allows a collaboration with local actors, policy makers, academics and industry professionals to work with. In this case the collaboration starts with the art hall and contemporary lab Färgfabriken. Supporting the Float Trust you can offer your time, resources, and become an integral member of the team. The Float Trust receives responsibility of an existing location, with the conditions on making a non-environmental damage. Now the development can start. In my proposal the site for implementation is located at the Pirate Harbour.
If the houseboat is to be permanently moored at a pier, building permits are required and in many cases also exemptions from the coastal protection regulations. These regulations can be overseen if the location is made public and contributes to the surrounding.

(Boverket, Plan- och bygglag (2010:900) 4 kap 17 §)

Property where mooring of boats is included in the municipalities detail plan allows the inscription of residency to be used as long-term residency.

(Pampas Marina, Nacka Strand)
7.1 Overview

The design phase of the project demonstrates the possibilities of a flexible programming that is responsive to future conditions. The main idea is to maintain the flexibility and mobility through a catalogue of typologies that benefits the community. The aim is to showcase a scenario and materialising the outcomes of the flexible programming, rather than one definitive design proposal.
7.2 Local Implementation Strategy

The implementation strategy begins on the Pirate Harbour. It is already a well-known location where the illegal occupation has been intensified by social stigmas and the negative impacts of locals. This makes it a strategic site of implementation as it can improve the existing conditions and enable a new relationship between land and water. With the use of the Floating Factory, each step of the implementation on site is achieved through the Float Trust.
NEW PIER - ENERGY SUPPLIER
A new pier is built using the existing pier as the main structure. The pier is the main relation to land. It is also an energy supplier where future units may plug-in. A concrete covered pontoon filled with EPS provides a frost-protected place for pipes used for services on the inside. The injected tubes work as collectors of energy from the surrounding water. Through a heat pump it generates overflow heat and cold that can be used for all floating typologies.

INFORMATION TOWER
An Information Tower and Observation Tower is constructed and added, spreading information to passbyers of the upcoming activities and events.
2. FLOAT-CLUB

The **Float Club** is constructed and the first members can moore. This space shares common facilities and management of services with its members who manages the site. Social communal living spaces gives a sense of belonging and community. During the time, the **Recycle Boat** is built up.

3. RECYCLE BOAT

**COMPOST TOWER**

Members start recycling. The **Floating Factory** takes advantage of the recycled material that can be used for further construction.

**AGRI-HUB**

Aquaponic greenhouses enable production of food.

Feed one family. An exchange is done with the **Recycle Boat** as members use the compost in order to grow their own food.

**RESTAURANT**

A mobile restaurant allows a social and economical exchange between those living on land and on water. The abundance of the greenhouse is then collected and used in the restaurant, generating an income to the **Float Trust**.

**FOOD!**

be used to reduce members costs; foodmarkets or personal use.
FLOAT CLUB

common facilities and management of services with its members who manages the site. Social communal living spaces gives a sense of belonging and community. During the time, the Recycle Boat is built up.

2. FLOAT-CLUB

COMPOST TOWER

Members construct a digester for compost. It takes up to one year before members can start growing food.

RECYCLE BOAT

Floating Factory takes advantage of the recycled material that can be used for further construction.

3. RECYCLE BOAT

FOOD!

be used to reduce members costs; foodmarkets or personal use.

AGRI-HUB

Aquaponic greenhouses enable production of food. The size covers a volume to feed one family. An exchange is done with the Recycle Boat as members use the compost in order to grow their own food.

5. RESTAURANT

The production of food can be used to reduce members costs; foodmarkets or personal use.

FOOD!

A mobile restaurant allows a social and economical exchange between those living on land and on water. The abundance of the greenhouse is then collected and used in the restaurant, generating an income to the Float Trust.
Now the Floathub is completed and has its big opening inviting the public. Full ownership has been transferred to the Float Trust and is ready to be replicated on other locations.

### EVENT
Construction of public spaces enables events, demonstrates a life on water and its opportunities. These spaces establishes a wider relationship between those living on land and water, with the aim at changing social stigmas. Visitors become participants that contributes to the Float Trust.

*Added typologies;*
Open Squares, Public, Platforms, Shops, Theatre, Flexhall, Sauna
From this phase, the entire complex is a process of becoming resilient and self-sufficient in order to achieve affordability. The users demonstrate that they are in no need of municipal systems, nor developers as they can deal with the issues on their own.
7.3 The Functional Program

The aim of the program is to provide the necessary parts in order to make the boat community self-sufficient. Each typology generates values to the community and acts as a generator that enables affordability and possibilities.

All typologies are technically mobile, but it is only the Floating Factory, Recycle Hub and Restaurant-Boat that are mobile by own force, as they create a network of reliance between communities.
FLOAT CLUB


RESTAURANT BOAT

FLOATING FACTORY

1. Production space & CNC printer
2. Material Storage
3. Storage

FLOAT HOUSE

1. Bedroom
2. WC & Shower
3. Living room
4. Kitchen
5. Driver’s seat
6. Storage

GROUND LEVEL 1:150
7.4 Building Process

The main idea is to allow users to use a flexible system in order to modify and costume future needs using CNC technology. The structure of spaces is easily constructed through the Floating Factory, allowing residents a future on water.

The first step is the construction of floating platforms that works as foundations, which are built up of pontoons. Using the minimal measurement of 4<12 meters allows the platforms to be seen as hulls and can be registered as ships. This has the advantage to be considered property as you can pledge or apply for a loan according to the Swedish Sjölagen. However, registrations are costly and obligatory if they exceed <15 m. Therefore, working with several platform sizes members can expand or add needed infrastructure according to needs of the community and activities. Since all platforms are mobile they become flexible and can be put together in order to shape public and additional spaces if needed.

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64 SFS 1891:35 Sjölag
**RECYCLE BOAT**

The RecyleBoat collects material that can be re-used for further construction. For instance, newspapers are recycled to insulation. Plastic is also recycled and used as polycarbonate sheets for other constructions.

**CNC SYSTEM**

Each typology is uses the Wikihouse building system WREN. This construction is used as it is flexible and modular can easily be self-assembled. The components are locally manufactured, made out of plywood and cut by CNC machines.
My study has identified that due to the limitations of the housing market and the growing generation gap, the mobile dwelling has started to play a more significant role in our urban society. Consequently, the mobile dwelling has evolved. The study has also identified the role of the mobile dwelling in the 21st century, demonstrating freedom in a landscape of possibilities, free from compulsions of society. However, unable to solve the financial inequalities of the housing market, the mobile dwelling does not go beyond a temporary solution in today's society.

Through my proposal I argue that the solution lies in bringing back creativity and playfulness through a different housing system, that is not about capital accumulation but rather about shared equity. The strategy of my project aims to deal with the identified challenges of long-term residency and financial inequalities for mobile dwellers. The strategy uses nomadic means as a way to keep the positive qualities of freedom through mobility, important factors being: community formation, self-governance, sharing of assets, knowledge and in achieving affordability. In my project it is produced by the boating community in a programmatic and architectural idea that connects with the city. In this way, a network of reliance and exchanges strengthens the mobile community through the proposed typologies. Therefore, the enabling of a framework of mobile infrastructure may allow the mobile dwelling to become more than a temporary solution.

In the end, I hope that the study may contribute to the understanding and exploration in how to allow the mobile lifestyle to take a bigger position in society, whether it is about being mobile on water or land. For future studies, the exploration and application of combined CLT models can be made to the context as it has not yet been explored in Sweden.
Process sketches

Float Hub!
ACADEMIC DISSERTATION


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WEBPAGES


VIDEO
