

# **Prototypical Low-Impact Housing for Mumbai's expanding Middle-Income Group: Lessons from European Cohousing**

Swapnil Rohidas Kangankar

Kangankar.swapnil@gmail.com

Supervisor: Dr. Michael LaFond

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## **Statement of Authenticity**

This thesis contains no material which has been accepted for the award of any other degree or diploma in any institution and to the best of my knowledge and belief, the research contains no material previously published or written by another person, except where due references have been made in the text of the thesis.

Signed

Swapnil Rohidas Kangankar

Berlin, 1<sup>st</sup> Feb 2017

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## **Abbreviations**

CIDCO- City and Industrial Development Corporation

EWS- Economically Weaker Section- INR 25,000 and below (Monthly income)

FSI/FAR- Floor space index / Floor area ratio

HIG- High income group- INR 75,000 and above (Monthly income)

HUDCO- Housing and Urban Development Corporation

INR- Indian National Rupee

ISHUP- Interest Subsidy Scheme for Housing the Urban poor

JNNURM- Jawaharlal Nehru National Urban Renewal Mission

LIG- Low Income Group- INR 25,000- 50,000 (Monthly income)

MCGM- Municipal Corporation of Greater Mumbai

MHUPA- Ministry of Housing and Urban Poverty Alleviation

MIG- Middle Income group- INR 50,000- 75,000 (Monthly income)

MMR- Mumbai Metropolitan Region

MMRDA- Mumbai Metropolitan Regional Development Authority

MoHUPA- Ministry of Housing and Urban Poverty Alleviation

MoUD- Ministry of Urban Development

NAREDCO- National Real Estate Development Council

NBO- National Buildings Organisation

NCAER- National Council of Applied Economic Research

NHB- National Housing Bank

RBI- Reserve Bank of India

RRY- Rajiv Rinn Yojana

ULB- Urban Local Body

## **Abstract**

*With one of the fastest growing economies and most densely inhabited spaces on the planet, Mumbai is home to a ballooning middle class that is spirited and aspires to match the likes of the Shanghais and New Yorks of the world. However, owing to policy flaws, non-prioritisation of affordable housing and lack of alternative models of development, its middle class resides in extremely precarious and unaffordable houses. Housing in Mumbai is largely being provided by private developers with most of their projects being high-end luxury apartments for higher returns on their investment as against middle or low income group housing. With little involvement from the state, the city is experiencing a huge shortage in the affordable housing segment for middle as well as low-income groups.*

*Mumbai's annual income to housing costs is the highest in India. Mumbai being the most financially attractive city of India, the concern is not so much the financial capabilities of its citizens to own a house but that the cost of houses exceeds far beyond the acceptable limits of owning a house anywhere in the world. Expert opinions reviewed during the course of this thesis revealed that unwarranted developer profit margins and exorbitant land costs are the biggest culprits amongst a myriad of other aspects responsible in driving the housing costs in the city. If these undesired developments are not curbed with long-term solutions, Mumbai stands at a big risk of turning into an even more segregated city with a far higher number of people with perfectly legal status and respectable jobs being forced to live in undesirable and stressful conditions.*

*The intent of this thesis is to create a framework aimed towards housing that would be more affordable than what is currently offered in the market, with an added impetus on social robustness and environmental sustainability. Hence, cohousing, a form of development which is resident-led, non-speculative and potentially energy conscious, all without the involvement of a private developer, emerges as a pragmatic prototype to offer at least partial solutions to the current housing crisis in Mumbai.*

*This research begins with an analysis of cohousing development in various European countries and is reinforced by expert interviews and case studies from Berlin, Amsterdam and London. This is followed by an analysis of the inadequacies in Mumbai's cooperative housing sector as well as a review of the role of the Indian government and various financial institutions of India. The issue of addressing affordable land is dealt with by studying the untapped potential of the large underused Portland tracts of Mumbai. Subsequently, his thesis reveals that, in order to offer an alternative housing model, such cohousing will need support by providing land at subsidized rates, eliminating the involvement of a private developer, invigorating the sedated construction pace, and creating a promotional platform for cohousing awareness and group formation.*

## Key Terms

**Private Developer-** In the context of this thesis, a private developer is an entity who develops housing projects by investing capital sourced from financial institutions primarily with the intention of profit generation through sale of housing units.

**Contractor-** A contractor is an entity who is in charge of constructing a building on the basis of documents provided by the architects for a fixed remuneration paid by the client, usually on the basis of construction cost.

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# 1 Introduction

## 1.1 Understanding Low-Impact

Low-Impact in the context of this thesis refers to a type of development which aims at ***relatively low-cost housing*** whose development, management and spatial attributes provides a platform for strong community development leading to ***lower levels of societal isolation and fragmentation*** among its residents and ***lower levels of environmental impact*** due to adoption of sustainable construction practices and efficient management of residential spaces. The primary focus of this thesis is developing an affordable housing model, while the social and environmental aspects are viewed as positive outcomes of an affordable community-led housing development.

## 1.2 Background

“Bombay is the future of urban civilization on the planet. God help us”(Mehta, 2004).

Mumbai, formerly known as Bombay is the financial capital of India. It is one of the most populous cities in world and has a staggering density of approximately 31,000 inhabitants per square kilometre. Mumbai accounts for slightly above 6% of India’s GDP and is home to all the major financial, manufacturing and educational institutions of India (Clark and Moonen, 2014). Owing to these factors, Mumbai has always been looked at as a hub for opportunities and has attracted people from all over the country. This continuous high influx of people, combined with an aging infrastructure, uncondusive development policies and a natural territorial limitation has seriously crippled the carrying capacity of Mumbai. This is especially evident in the housing sector.

Currently, about 41.84% of Mumbai’s citizens reside in slums in extremely dire circumstances, while only 4% of the total population live in houses which have more than four rooms (Population census of India, 2011). The per-capita consumption of space in Mumbai is 4m<sup>2</sup> while on the other side a similarly dense Shanghai consumes 35 m<sup>2</sup> per person (Bertaud, 2011). On surveying the financial aspects, a study conducted by Bloomberg View reveals that an average earning citizen of Mumbai will take approximately 3 centuries to purchase a 100 m<sup>2</sup> house in a prime neighbourhood (Thakur and Tan, 2012). This acute disparity has been primarily due to ineffective housing policies laid down by the state, an artificial shortage of land and one of the world’s most restricted Floor Space Index (FSI) policies. Further to this, the current housing provision in Mumbai is primarily through private developers who typically target the higher end of the economic spectrum, in spite of the large unsold inventory of flats. A study done by Liases Foras- a prominent Real Estate research firm in India reveals that it would take approximately 52 months for Mumbai to clear its current (2016) unsold inventory (Mahrotri, 2016). Thus, considering the above, the middle-income residents of Mumbai either choose to live in slums close to

the city centre or in relatively better apartments but extremely far away from the city. In most cases people choose to live in slums owing to better urban infrastructure and economic prospects. Shirish Patel, one of India's leading figures in urban planning and research states that, throughout the years, Mumbai has readily provided jobs but never a place where an average earner can afford a decent place to stay. In the year 2005, Mumbai had 81 police inspectors and 4,413 police constables living in slums. There could be not be a more striking instance wherein the city entrusts people with perfectly legal jobs of protecting the judicial system but does not provide them with legal, affordable houses to live in (Shirish Patel, 2005).

### **1.3 Middle-income group in Mumbai**

In his book, *How India Earns, Spends and Saves: Unmasking the Real India*, Rajesh Shukla states that the Indian middle class has doubled over the last decade from 5.7 per cent in 2001/02 to 12.8 per cent in 2009/10. This equates to 28.4 million households with a total of 153 million people (Shukla, 2010).

As per a study conducted by a popular statistical website Worldometers, the current median age of India is just 26.9 years (Worldometers, 2016), while a study conducted by Prof. Kaushik Basu from the Cornell University estimates that, India has more than 50% of its population below the age of 25 and more than 65% below the age of 35 (Basu, 2007). The rapid economic growth post economic liberalisation of the 1990's, higher quality of education, increased purchasing powers and growing trends towards nuclear families has fuelled an emerging middle class in the city. The growing inclination of the city's focus towards the service sector has led to the growth of job opportunities which has attracted several aspiring young professionals from all over the country, adding on to the middle-income category of the city. However, in spite of it being one of the most financially attractive destinations in the country, its housing market is still way beyond the reach of an average earner. The middle-income group in Mumbai can be broadly classified in two different categories, first, the ones who have been living in the city for decades with an extended family and access to some sort of ancestral property in the city. And the second, mostly single aspirants who arrive in the city for a better life. The first group typically has it slightly easier when it comes to purchasing new property. This is because a new house is typically bought by selling the old property and deploying finances from all the earning members of the family. The newly migrated, in spite of decently paying jobs, face the strongest hurdles due to non-availability of any such resources.

### **1.4 Cohousing**

Historical situations of housing crisis have witnessed numerous reform movements over the past few centuries. These were the utopian projects of early industrialisation period, cooperatives of the late 19<sup>th</sup> century and the community land trusts of the past few decades. In recent times, cohousing has emerged as an alternative housing model and has been instrumental in providing relatively affordable and socially enriched housing in Europe as well as in the USA and Canada. Mumbai has been

going through its housing crisis for several decades and is ready for a reform. In this scenario, cohousing could prove significant in providing the necessary reforms that would target affordability, community-development and participation for the housing sector in Mumbai (LaFond Interview, 13.01.2017).

As per Maximillian Vollmer (Deputy Project management, housing project groups, Social neighbourhoods, public relations) from *Netzwerkagentur GenerationWohnen, Berlin*, cohousing could be defined as all forms of community orientated housing where people come together to live in self governed communities consisting of private living areas as well as shared spaces (Vollmer Interview, 24.08.2016). Although the rise of cohousing can be traced back to a variety of factors in different countries, essentially it involves a group of people joining together to pool their resources in order to achieve objectives which would be extremely difficult to achieve if carried out individually. In cohousing, the users are the clients as well as the developer. As per Christoph Schmidt, architect of the R50 cohousing project in Berlin, non-involvement of a private developer, sharing of common spaces and the effective utilization of the mental capital of the group goes a long way in developing a relatively affordable housing model (Schmidt Interview, 13.09.2016).

Cohousing is sometimes confused with cooperatives, however, it differs from the cooperative model in a way that, the cooperative is the owner of the house and the residents are renters, further, their isn't always an emphasis on sharing of space and resources. The cohousing model can enable the residents to be owners rather than renters, a criterion which is extremely critical in the cultural context of India and provides a setting for a far higher degree of social contact and development owing to its management and spatial structure.

### **1.5 Limitation**

One possible limitation of the cohousing model in India with regards to the financial capabilities of its occupants is that, cohousing as a model, given the current conditions, would most efficiently cater to middle-income groups than the economically weaker sections of the society. This is due to the fact that cohousing calls for a sizeable amount of financial resources and capital borrowing capabilities. However, since it can cost approximately 15-20% lower than that of a similarly developed house built with similar standards, it is termed as a relative affordability housing model.

### **1.6 Significance of research**

Since Mumbai has an ageing and non-conforming infrastructure, it is important that alternative models of development are given serious considerations to fill out the gaps left behind by conventional models of development. Citizen-led models of development could prove to be crucial because they can reduce the onus from the already strained government by conferring the citizens a critical role in the planning and development process. This would lead to housing which is built as per the

requirements of the people who would actually live there, instead of houses being built on standard assumptions of people's requirements.

This research also assumes further importance because India is undergoing rapid urbanisation. In 2011, approximately 31% of India lived in cities as compared to 28% in 2001 (Population census of India, 2011). A successful cohousing model in Mumbai could open up pathways for similar developments and emerge as a prototype which can be replicated all across the country.

## 1.7 Hypothesis

Thus, in view of the above, ***this research argues that cohousing can be developed in Mumbai as an alternative model of low-impact development by reducing the dependency on private developers through a framework of supportive financial institutions, networking platforms and mechanisms to access land at affordable rates.***

## 1.8 Aim

- To study cohousing in Europe and understand the under-pinning elements which has led to its development in the past few decades.
- To study the housing sector in Mumbai and identify the causes for unaffordability and elements that would hinder the development of cohousing.
- Apply the learnings from the European context to the Indian context in order to provide relatively affordable, socially robust and environmentally sustainable housing for the middle-income group in the city.

## 1.9 Research Questions

Keeping in mind the above concerns and aims, the primary research question could be formulated as

- **How can cohousing concepts be transferred from the European context to Mumbai in order to achieve relatively affordable, socially robust and environmentally sustainable housing?**

The primary question can be complimented with few other sub-questions which are as follows

- **What are the factors that assist in the initiation and development of cohousing in Europe?**
- **What steps can be taken to ensure a successful implementation of cohousing in Mumbai?**
- **In which ways could mixed-use strategies be implemented in order to develop the cohousing sector in Mumbai?**

## 2 Research Methodology

### 2.1 Approach

The research of this thesis is carried out through both, qualitative as well as quantitative research. The qualitative analysis is critical for this research because cohousing as a process and outcome relies heavily on the motivation and endeavour of the people involved in the project. Qualitative analysis is the ideal approach to gain critical insight into the aspirations, demands and future expectations. An understanding of this sort provides key results which explain what people desire, how a group is formed, the factors that hold a group together or how the financial or legal structure are decided, etc. A quantitative analysis on the other hand provides the research with data pertaining to ideal construction periods, built costs, affordability, sustainability, etc. all of which are extremely important to be understood in order to successfully transfer the model from Europe to Mumbai.

The thesis is mainly divided in two parts. Part one is studying the European model of cohousing which is achieved through literature reviews, analysis of case studies and interviews with relevant experts. Part two focuses on analysing the cooperative housing sector of Mumbai, this is achieved mainly through literature review and interviews. The combination of literature review and interviews assists in providing greater clarity and wider perspective on the chosen field of research. In addition to this, where literature helps in understanding the history, trends and development of cohousing over a wider geographical area and time span, the interviews and case studies are critical in providing an intimate understanding of the functioning of cohousing and its associated elements.

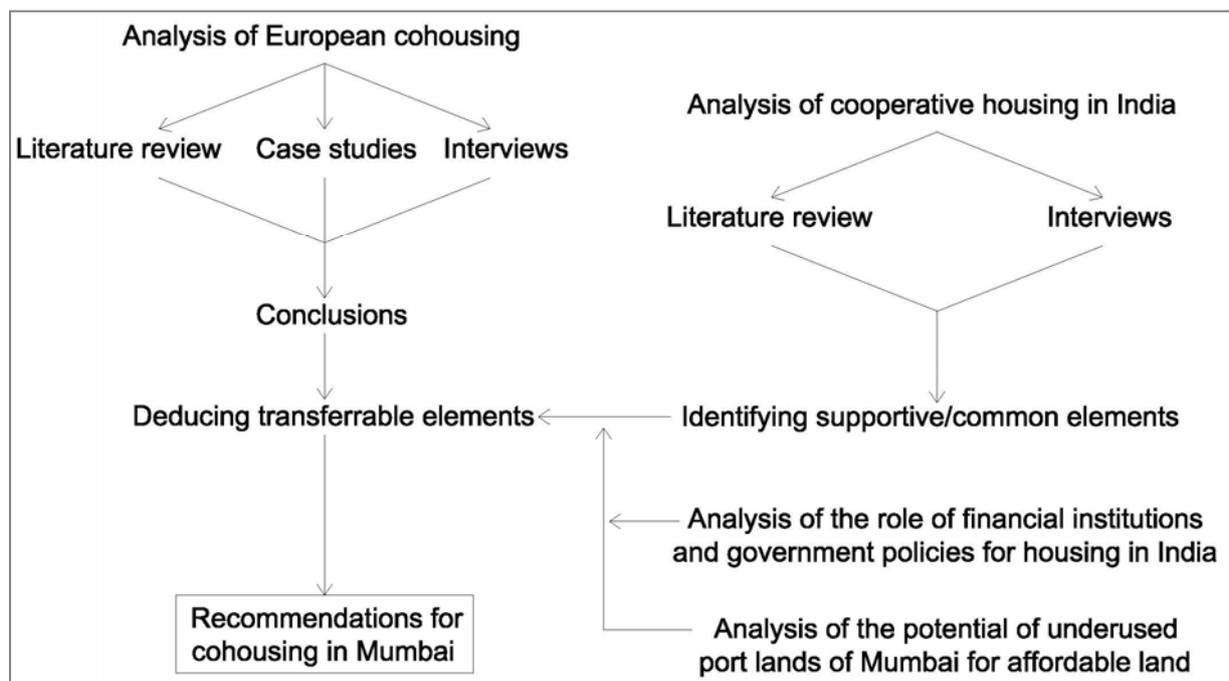


Figure 1- Research diagram

Source- Self elaboration

## **2.2 Literature review**

Primary objective of the literature review was to understand the history and development, positive and negative effects, current status and future trends of cohousing. The literature is focused mainly around the German, Dutch and English context to understand the European cohousing model. Additional emphasis on Germany was also due to the fact that a substantial database of German literature was available with the TU Berlin and the author's internship opportunity at the id22: Institute for Creative Sustainability.

## **2.3 Case Studies**

The research analyses five cohousing projects, two of which are in Berlin, one from Hamburg, one from Amsterdam and one from London. The two projects from Berlin are known as Spreefeld and R50, the one from Amsterdam is known as Vrijburcht, the one from Hamburg is known as Baugemeinschaft Hafenliebe and last one from London is from an organisation known as Coin Street Community Builders. Similar to the literature review, case study analysis was done to understand cohousing trends and mechanisms across Europe. Where Germany and the Netherlands have been pioneers of cohousing models for the past few decades, The United Kingdom has recently been one of the hotspots of cohousing development. Although each of the case studies display a high degree of resident participation, they differ in their legal and financial structure, forms of ownership, mixed-use development, initiation process, role of state and financial institutions, etc. The main objective of carrying out this analysis was to understand the supportive framework that has helped in the successful implementation of these projects. Case study representatives were contacted through the author's internship at id22: Institute for Creative Sustainability.

## **2.4 Interviews**

The interviews were carried out mostly in Berlin and in Mumbai with experts from the fields of urban research, architecture, project management and finance. The interviews helped tremendously in providing additional understanding of the practical realities along with an understanding of the personal motivations and experiences of the people involved in cohousing. The interviewees in Berlin were contacted through the author's internship at id22: Institute for Creative Sustainability while the interviewees in Mumbai were contacted through personal contacts.

## **2.5 Thesis structure**

- 1) **Introduction-** Introduction to the topic, research objectives and research questions.
- 2) **Research Methodology-** Research structure, modes of data collection and limitations of research.
- 3) **Literature Review-** History, evolution and development trends of cohousing in Europe.

- 4) **Supportive Framework for Cohousing Development-** Understanding the legal, financial and housing development policies prevalent in Germany.
- 5) **Group Formation, Education, Networking-** Understanding the group formation process along with the various other factors that assist in cohousing development.
- 6) **Case Study-** Analysis of case studies from four different European cities. The case study conclusions form a critical part of the recommendations to be made for Mumbai.
- 7) **Mumbai-** A brief background about the city of Mumbai.
- 8) **Cooperative Housing in Mumbai-** A brief understanding of the cooperative housing sector of Mumbai.
- 9) **Understanding Affordability-** Understanding the definitions of affordability in the context of India and the factors that have resulted in unaffordability.
- 10) **Housing Development Policies in India-** Understanding the housing development policies as well as the role of the governing bodies in Mumbai.
- 11) **Financial Institutions in India-** Understanding the role of financial institutions in India with regards to housing development.
- 12) **Strategy for Affordable Housing-** Analysis of the underused port lands as a potential site for the pilot cohousing project. Developing a tentative comparison model to test the affordability of a cohousing project against a developer-led project.
- 13) **Transferability-** An analysis of the whether the supportive elements from Europe can be transferred to the Indian context and the various challenges that would be encountered in the process.
- 14) **Recommendations-** Recommendations made for developing cohousing in Mumbai based on findings from all the above chapters.

## 2.6 Limitations

Although the primary intent of this thesis is to target affordability, it is important to note that there are other ways in which affordability can be achieved. Other strategies for example could be, permitting a higher FSI, developing community land trusts, and promoting transit-oriented development. However, these are extremely broad research topics in their own realm and hence are not focused upon in this thesis. Apart from the above, there are a few other limitations which are described below

- The term cohousing is still ambiguous. This made it difficult to find literature that would clearly focus on the topic.
- Most of the literature related to Germany, especially the data issued by the state pertaining to cohousing legal structures and development policies is primarily in the German language. This made it difficult to completely and efficiently interpret the provided data.
- Interviews could only be conducted with those who spoke English. Further, not all the requested interviewees responded back.

## 3 Literature Review

This chapter begins with a detailed summary of the origins of cohousing in different European countries. Next it focuses on the various characteristics that are studied by experts from around the world based on their understanding and experiences with the cohousing model. Finally, it provides a brief comparison between the positive and negative aspects that the cohousing model has to offer to its residents as well the city at large.

### 3.1 History

Collective living has had a long history and has gone through several phases. These phases have been motivated primarily as a response to the daily needs and desires of the people living in that particular context.

#### 3.1.1 Utopian communities

In the year 1516, the English author Thomas More published the book “Utopia”. This was one of the early defining literatures that gave birth to the visions of ideal human habitats. More described an ideal neighbourhood as one having common dining and leisure facilities. Although the utopian communities did not flourish in Europe as much as they did in the United States, industrialisation in Europe fuelled visions of an egalitarian society in which residents would work and live together in a collective fashion (Vestbro, 2010).

The late 18<sup>th</sup> century was the high point of the industrial revolution in England. Although production was at an all time high owing to a growing mill workers community, the working and living conditions of the workers were neglected by the mill owners (New Lanark- Robert Owen Museum, 2016). Contrary to the prevailing norms, industrialist Robert Owen who assumed responsibility of the New Lanark industrial community was sensitive to the needs of the workers and desired to create a better place to work as well as live. This was primarily due to his belief that the character of a person is moulded by the circumstances and hence better circumstances would lead to goodness and better productivity (Bloy, 2016). The environment at New Lanark essentially reflected the philosophy of living and working together with decent communal facilities targeted to develop the social well being of an individual.

The 19<sup>th</sup> century witnessed another utopian initiative known as the *Familistere* which was initiated by French industrialist and social innovator Jean Andre Baptiste Godin. The project he built in northern France consisted of a large factory, courtyards and family dwellings all interconnected under a huge glass (Vestbro, 2010). The intention here too was to provide for facilities in which the workers could work and live together in a socially developed environment.



Image 1- View of the covered communal courtyard

Source- (Animaviva Productions, 2016)

### 3.1.2 Cohousing in Denmark

In Denmark, the 1970s saw a boom of *bofællesskab* (cluster dwelling) in different parts of the country, a trend that has continued to this day. The first cohousing was built for 27 families near Copenhagen by a Danish architect and psychologist, the source of inspiration for this initiative was Bodil Graae's 1967 article, "Every child should have 100 parents" (Lietaert, 2007). These early cohousing experiments proved as a source of inspiration to Charles Durrett and Kathryn McCamant from the USA during their tour of Denmark in the 1980's (Vestbro, 2010). Residents, typically the middle class educated citizens had their share of private spaces along with shared common space which were generally built to good design standards. The projects were seldom politically or religiously motivated, however, they did display an affinity towards the seniors, students and low-income citizens (Meltzer, 2005).

### 3.1.3 Cohousing in Sweden

In Sweden cohousing is more frequently referred to as *kollektivhus* (literally-collective building). Contrary to the privately owned properties of Denmark, cohousing in Sweden is mostly state owned, although in recent times there has been a growing inclination towards privately owned initiatives (Lietaert, 2007). The kollektivhus came into existence in the 1930s as a response to the women's need of caring for their children and home when they would step out of their house for employment. The emphasis here was on rational organisation rather than on community building. These early projects were infact serviced by staff that looked after reception, laundry and day care etc. In the 80's, the old type was replaced by a

new one in which the residents worked together and looked after each other. The focus now transferred to fostering a sense of community and cooperation between the residents than mere organisation (Vestbro, 2010).

### **3.1.4 Cohousing in Germany**

Unlike the utopian ways of other countries, Germany had a pragmatic approach towards the cohousing model. Cohousing developed in Germany in two stages, first was in the late 19<sup>th</sup> century which saw the emergence of the cooperative model, while the second was in the 1980's wherein the new cohousing model took shape. The model in the 1870's emerged primarily to counter housing unaffordability, whereas the one in the 1980's was initiated in response to unaffordability as well as to cater to the desire of a participatory and community oriented way of living (LaFond Interview, 08.12.2016). Further to Dr. LaFond's comments, Peter Ache and Micha Fedrowitz in their publication, *The development of cohousing initiatives in Germany* state that, the German cohousing movement in the past few decades was focused on the idea that, to live in house was not only having just shelter but also communal infrastructure with community as a crucial element of living together (Ache and Fedrowitz, 2012).

At the end of the 80's, West-Berlin came into the international limelight for the International Building Exhibition (IBA) which aimed at repair and reconstruction of the city as well as promoted experimentative ecological building solutions. One of the IBA goals was to renovate the old buildings which at that time were squatted by the locals as a protest to the tearing down of these buildings. Subsequently, these buildings were sold off or rented to the squatters. In parallel to the state led development initiatives post reunification, Berlin, at that point in time was a hub for self help and do-it yourself projects.

Between 1995 and 2005, Berlin endured economic recession which led to slowdown of construction activities in the city. However, the city still had numerous pockets of land with substantial development potential. Architects took advantage of this opportunity sensing that there was a growing demand of self-owned custom-built houses from families who wanted to stay in the inner city, but at the same time with stable rents and spaces which would suit their way of living. Subsequently, a lot of architects started designing for these plots and looked out for partners who would live in it. These projects have been particularly interesting because of the involvement of residents which resulted in tailored solutions for the individual living spaces as well as the site. These groups which would build together came to be known as 'Baugruppe' or building collectives (Ring, 2013).

### **3.1.5 Cohousing in Netherlands**

The mass housing program of the 60's in the Netherlands catered to the high housing demand but failed to provide facilities for outdoor social engagement. This unhappiness led to revolts and by the 70's there were demands which pushed for higher participation in the planning process. A decade later, changing market

structures caused by a reduced target groups and increasing affinity of residents to own apartments led to the decline of the once prominent social rental housing. This led to another crisis which resulted in lack of housing for those who did not belong to the target group but at the same time could not afford to find a house for themselves in the market (Qu and Hasselaar, 2011).

Following a series of events, in the year 2000, the ministry of housing stated that it aimed to produce 30% of the new housing especially in the urban areas through self-provision. The core ideas behind this movement was that significant participation allows for greater self-expression, affordability and an increased responsibility towards neighbourhoods (Cowan and Marsh, 2004).

### **3.1.6 Cooperative housing in India**

Cohousing differs from cooperative housing in a way that cohousing allows for individual ownership of apartments, as well as promotes the idea of shared and common spaces (Vestbro, 2010). However, cohousing also shares many similar traits to cooperatives, especially with regards to management, design development and ideals related to social, economic and environmental sustainability. In India, cooperative housing has been active since the early 1900's with the State of Bombay (now Maharashtra) at the fore-front of the initiative. Although, the movement started almost 90 years ago, it flourished only after the 1950's after the second world war and India's independence (Khurana, 2002). One of the primary reasons for the initiation of cooperatives in India was that the government on its own was incapable of providing houses for the increasing population. Further, there was a realization that it would be extremely difficult to provide affordable and inclusive housing without the involvement of the end-users and the private sector (Tiwari and Rao, 2016).

## **3.2 Cohousing definition and characteristics**

"Cohousing is not just a physical form, but a daily form of daily practice" (Ache and Fedrowitz, 2012: 395). In their article featured in *Architecture Now* magazine, Dominic Glamuzina and Aaron Paterson state that, cohousing community is made up of private homes that are enhanced by shared facilities. The extent of sharing depends on how the financial and maintenance negotiations are established. The structure is often a freehold title and owned by a company set up by residents, where individuals purchase leasehold houses and become company directors (Glamuzina and Paterson, 2016).

Graham Meltzer states that, cohousing first emerged in Denmark in the 70's. In the 80's it spread out in Northern Europe and in the 90's it began to prosper in distant regions of the United States, Canada and Australia. More recently it has also found its footing in the United Kingdom, Japan and New Zealand (Meltzer, 2005). As per Frances Anderton (2015), co-existing with your peer group has been one of the fundamental motivations behind such initiatives and although the cohousing development is a difficult and time consuming process, it ends up imparting on the

residents an added sense of responsibility and ownership towards what they have created.

The term cohousing was coined by Charles Durrett and Kathryn McCamant in their book from 1984. The concept of cohousing however does not clearly mention what *co* in cohousing means. Thus, this could be collective, collaborative, cooperative or communal, therefore cohousing can be seen in a much wider context (Vestbro, 2010).

Cooperative is a legal term, it is a specific ownership type and could be a form of cohousing (Vollmer Interview, 24.08.2016). Cohousing could be cooperative, collaborative or communal. Cohousing is more of an umbrella term, although the current literature of cohousing confuses cohousing with cooperative housing. Cooperative housing does not directly imply cohousing since it could be housing without common spaces or shared facilities, further cooperative housing does not allow self-ownership of apartments. On the other hand, collaborative housing could refer to housing which is focused on collaboration between residents while communal housing could be referred to as housing specifically oriented towards developing a sense of community as its prime motive (Vestbro, 2010).

The Italian, Czech and Belgian cohousing networks use the English term cohousing and not their own native term, thus emphasizing the wide acceptance of the term cohousing. In the Netherlands, the cohousing concept is known as *central wonen* which literally means 'central living' while in the Flemish part of Belgium the term that is used is *samenhuizen* which translates to 'together houses'. In Denmark, as stated above, the concept is known as *bofaelleskab* which means 'cluster dwelling' (Vestbro, 2010). The important online data base in the Berlin changed its name to *CoHousing Berlin* from *Wohnportal Berlin* in wake of the international popularity of the term cohousing (LaFond Interview, 30.09.2016). Thus one observes the wide acceptance and the increasing importance of the term cohousing on an international scale. In Germany, the terms for cohousing are *Wohngemeinschaft* which means housing community and *gemeinshaftliche* which means community-oriented form of housing. As per the CoHousing Berlin website, cohousing can be defined as housing that is community-oriented, self-organized and sustainable (CoHousing Berlin, 2016b).

Jo Williams in her article states that, enhanced social interaction is the principle behind any cohousing development. Spatially, the private spaces tend to be smaller whereas the community spaces compensate for the reduced space by housing activities which are not frequently used. This aspect also aids in reducing the overall cost of the project. She further defines three different models of development- (Williams, 2008)

Model	Resident-led model	Partnership model	Speculative model
Description of model	Entire resident group involved with the development and design process, as well as community formation	Developers and residents work together at all stages of the process	Private developer-led model Developer deals with design development and community formation
Community visioning	All residents involved	All residents involved	Developer-led
Recruitment	All residents involved	All residents involved with professional help	Developer-led
Legal and Financing	Resident-led with professional help	Developer-led	Developer-led
Design process	Resident-led with professional help	Developer-led with resident input	Developer-led
Community development	Resident-led with professional help prior to living in community and throughout life of community	Resident-led with professional help prior to living in community and throughout life of community	Resident led once living in community

Table 1- Different forms of housing development models

Source- (Williams, 2008).

### 3.3 Pros and Cons of Cohousing

#### 3.3.1 Pros Affordability

In most cases, a cohousing project ends up being more affordable than a similar private developer-led project. According to Winfried Härtel, project manager at the *Büro für Projektentwicklung*, a cohousing project is cheaper by about 5-20% of the cost of a private developer-led project (Härtel Interview, 14.09.2016). This is mainly because the profit margins of the private investors are taken out of the calculation. However, as described in the previous chapter, it is important to note that this process is not always straight-forward and the group might end up overspending rather than saving by the time the project is actually constructed. Further, a lot of cohousing projects are designed in a way that the private spaces are smaller

and the common spaces are shared and larger, for example laundry rooms, study rooms, play areas, guest rooms etc. This approach of spatial planning helps in reducing the overall footprint of the building and thus the overall costs. Another way by which margins are reduced is by utilizing the mental capital of the group (Schmidt Interview, 14.09.2016). A lot of times a cohousing group consists of members who are familiar with the banking, management or construction sector. The expertise provided by these members can also help in reducing external dependency and thus minimizing the overall costs. Again, it is important to note that this is not as straightforward as it seems, dedicating time and energy in a project and balancing professional life at the same time is like wearing two hats at the same time and the end results might not turn out as expected. Sharing resources and tasks also contribute to reducing the overall the costs of the building. Residents share cars, gardening tools etc. whereas in multi-generational projects the elders opt to take care of the children when the parents are out working or in case of an ailing member there is always someone to fall back on, all of this help in reducing the overall living and maintenance costs of the project while at the same strengthens the social bonding in the group. Lastly, cohousing projects are often built to better quality than the normal developer-led projects, reason being the involvement of residents during the design development stage and the willingness of the residents to spend a little extra since most of them see themselves living there for as long as possible (Brzynczek Interview, 12.09.2016). This higher quality helps in getting a better resale value for the house.

## **Social**

The process of finding members for the group, finalising decisions, supervising construction and consultants, etc. is an extremely arduous task. However, it is this very task that fosters bonding between members. This bonding which residents develop over time goes a long way in helping people with reducing isolation and difficulties that people encounter in the later stages of their lives (Härtel, 2016). From a spatial point of view, spaces are consciously designed in order to encourage social interaction. Democracy is one of the core principles of any cohousing project. In spite of the various legal forms that a project adopts, everyone has the power to vote/give suggestions which decides the direction in which a project moves. Residents learn to respect each other's point of view in spite of the natural agreements-disagreements that happen during any decision making process, the entire management process also helps in bringing out the leadership skills in residents. All of this contributes heavily in building the bonding in the group as well as inter-personal development.

## **Ecological**

Most private-developer led projects target fitting in as many apartments in the smallest possible space available, self-built cohousing projects on the other hand show a higher affinity towards green pockets in their project. Most projects also opt for energy saving mechanisms since they offer better returns in the long term. These

decisions are possible because of a higher sense of responsibility towards their surroundings and also because they are involved right from the conceptual stage of the project. Lastly, building together allows for a certain degree of financial savings, hence the residents do not feel an excessive financial burden to incorporate these energy saving additions.

## **City**

Cohousing enables the citizens to live near the city-centre than move out to its fringes. This is mainly possible due to the combined collective strength of the group to access properties. Other benefit of this is that the city manages to keep tax revenue and a financially able clientele within its confines. Further, owing to reduced land prices of neglected sites, cohousing projects usually comes up in such areas which a private developer would not necessarily invest under the risk of not attracting enough customers (Härtel, 2016b). Many a times, a successful project on neglected land works as a catalyst for new surrounding developments and benefits the city on a whole.

## **Innovative**

Self built projects allow for strategies which a normal cookie cutter type of private-developer led housing seldom provides. People from varying backgrounds bring different ideas and inspirations on the design table which renders the project a distinct appeal. The sense of responsibility which the residents develop over time also helps in creating site specific solutions which add on the appeal of the project. The city benefits from these innovations in a way that it discovers new solutions for housing and urban development which traditional planning concepts would not be able to provide (Ring, 2013). Assisting the development of alternative models of development also puts the city on the radar which helps it to attain an improved global perception.

### **3.3.2 Cons**

Although the cohousing model offers substantial positive characteristics, it does also present formidable challenges which demand a detailed understanding before moving on to the group formation state.

#### **Accessing land and credit**

Experiences and data collected over the years commonly indicate that cohousing is a highly time consuming process (Tummers, 2015). Winfried Härtel states that, cohousing is not for those who cannot handle vagueness or uncertainty regarding the final look of the project (Härtel, 2016b). A lot of times residents face difficulties in borrowing credit from financial institutions, because unlike developers, residents do not have a track record of successful projects and they also lack the necessary expertise in the field. Similar to credit, accessing affordable land is also one of the hurdles that a lot of cohousing members encounter (Ehlers, 2016). Often a group

has to compete with private developers who are well aware about the legal and administrative procedures pertaining to land purchase. This particularly gets tricky in countries where the legal systems are complex and corruption in government organisations is high.

### **Social**

Jo Williams argues that social integration has not always been as it is portrayed to be, cohousing residents in the US, UK and Netherlands are typically white, educated and of middle to upper-middle class as a result of which those belonging to less affluent backgrounds avoid being part of these communities owing to the fear of seclusion (Williams, 2008). Maximilian Vollmer states that it is advisable to have people from similar economic backgrounds, however, people from a wider age group do make up for a good mix of residents (Vollmer Interview, 24.08.2016).

### **Architectural**

Architecturally, the cohousing model advocates large common areas and spaces for interaction. At times the interactive spaces such as a large corridor or peripheral balconies might invade privacy of some members. This usually happens because residents do not estimate how the common spaces would affect their lives and often things get clearer only once they move in. Further, incorporating a common space involves higher costs. This could be a source for debate since many might prefer cheaper houses over the luxury of common dining or living spaces (Schmidt Interview, 2016). The key to minimize such occurrences is intensive interaction and developing a sense of confidence within the residents so that decisions can be taken without any fear or unwanted obligation.

## **4 Supportive frameworks for cohousing development**

### **4.1 Legal Framework**

(Ache and Fedrowitz, 2012) state that choosing the appropriate legal form is important because of the link it provides between the conceptual stages of the project to the financial structure. A legal form in any structure forms an important foundation for the realisation and operation of the project, both, amongst the resident and between cohousing and its surrounding communities (Federal Ministry for Family affairs, Senior citizens, Women and Youth, 2016).

#### **The Cooperative- e.G.**

The cooperative is one of the highly structured and well tested legal forms in Germany, the basic idea of the e.G. emerged in the late 19<sup>th</sup> century with an objective of people cooperating together to achieve a certain joint aim but to live differently (Knorr-Siedow Interview, 02.09.2016). Each member has equal voting rights regardless of the number of subscribed shares in the cooperative (Netzwerkagentur GenerationenWohnen, 2012). One of the core ideas behind cooperatives is to allow for overall economic development by pooling resources and opportunities within the group (Solano, 2013).

According to LaFond (2016), a cooperative functions as a single entity rather than as individual members, members buy shares in a cooperative which forms the cooperative assets. These assets clubbed with the money the cooperative borrows from a financial institution forms the capital which is directed towards the development of the cohousing project. Once the project is complete, members pay a monthly rent to the cooperative which includes the maintenance fees and part of the instalments towards the loan obtained by the cooperative. Another advantage of the cooperative is the limitation of liability of the members (Knorr-Siedow Interview, 02.09.2016).

One disadvantage of a cooperative is that its legal structure is relatively rigid when compared to other legal forms. If one needs to sell his shares off, the money is received only two years after the submitted request. This makes it very inconvenient in case one has to sell off property under urgent circumstances. Lastly, every cooperative association has to undergo annual audits which have to be done by professional accountants under the legal framework laid down by the government (Knorr-Siedow Interview, 02.09.2016). Although on the positive side, this can help the cooperatives to improve their financial stability.

#### **Civil- Law partnership- GbR**

The civil-law partnership can be set up without many formal obstacles and is therefore chosen by many housing projects as a legal form, at least for the beginning of the project. On the down side, this model is also one of the riskiest (Härtel, 2016c). A GbR can be set up immediately without any initial capital with a minimum

of two members. The biggest disadvantage of a GbR is that members hold the assets of the company jointly and each member is personally liable without limitation along with his private assets for the liabilities of the entire GbR (Netzwerk Nachbarshaft, 2016), this means if one person loses his job and is unable to pay his share in the group, other members of the group are liable for his payments. Lastly, the GbR does not have any structural obligations as per law for organising its management committee (Knorr-Siedow Interview, 02.09.2016).

### **Self ownership of apartment (Condominiums)- WEG**

The home-owners' association (WEG) is a special form of GbR, in which the corporate assets are divided materially and each member is liable only to the extent of his or her own share in the WEG (Netzwerkagentur GenerationenWohnen, 2012). This form is chosen by members when they want to jointly plan, build and later after completion, be individual owners of residential units (Netzwerk Nachbarshaft, 2016). In this form, though the individual units are privately owned, the common spaces and the land is always commonly owned. Selling or transferring of the property is convenient in this model, other members of the group do not have any official powers over who the property could be sold to or at what price (Knorr-Siedow Interview, 2008).

## **4.2 Government**

The issues of housing, construction and environment in Berlin are managed by *Berlin Senatsverwaltung für Stadtentwicklung und Umwelt*, whereas the intervention of the federal departments in the matters of housing provision is extremely minimal (Solano, 2013).

### **Low Energy Housing Program (implemented at federal level)**

Buildings account for about 40% of the energy consumed in Germany (KfW Group, 2016). This program was initiated in 2002 by the *Bundesministerium für Verkehr, Bau und Stadtentwicklung* with cooperation from the KfW bank and the council for Sustainable Development to reduce the energy loads caused due to consumption by households (Solano, 2013). Accordingly, the KfW bank has developed several funding strategies which act as incentives for housing groups. In August 2015, the KfW bank has made further advancements to the program by raising the maximum loan amount from EUR 75,000 to EUR 100,000 per housing unit and providing individual energy-efficient refurbishment measures a repayment bonus of 7.5% (KfW Group, 2016). This way, the government ensured that adequate stimulus is provided to not only developers but also to financially weaker building groups to undertake self-development activities.

### **CoHousing Cultures and EXPERIMENTDAYS**

Since 2005, the *Berlin Senatsverwaltung für Stadtentwicklung und Umwelt* along with id22: Institute for Creative Sustainability has co-funded the annual networking

event EXPERIMENTDAYS as well the publication CoHousing Cultures. The book CoHousing Cultures documents nine cohousing projects across Europe and was intended to provide advice and inspiration to people interested in community-oriented housing (id22: Institute for Creative Sustainability: experimentcity, 2012) . The EXPERIMENTDAYS is an annual event and has been developed with the intention of providing a common platform for interaction between self-built projects as well the various actors involved in the development process.

### **Netzwerkagentur GenerationWohnen**

The *Netzwerkagentur GenerationWohnen* was formed in the year 2008 as an interdisciplinary platform by the collaboration between *Senatsverwaltung für Stadtentwicklung und Umwelt* and the city development company STTATBAU GmbH. The intent of this collaboration was initiating a platform that would act as a link between cohousing residents, financial institutions, cohousing experts and other associated actors' in order to help the development of cohousing in the city (Vollmer Interview, 24.08.2016).

*More about the Netzwerkagentur GenerationWohnen in chapter 5*

### **Competitions for Cooperative Societies**

The *Berlin Senatsverwaltung für Stadtentwicklung und Umwelt* in the year 2010-2012 initiated competitions for community-oriented cross-generational projects under the title "Generational Housing - Living in a Community". The intention of the competitions is to strengthen the interest of citizens in collaborative housing projects. Accordingly, in the year 2014, the government provided financial assistance of a total 100,000 Euros to housing groups which developed the best proposals, had a stable group and a viable financial plan (Senate for Urban Development and Housing, 2016).



Image 2- Jury evaluating competition entries

Source- (Senate for Urban Development and Housing, 2016)

### **4.3 Financial institutions**

The sustainable banking sector in Germany has gained momentum in the past few decades, with organisations such as the GLS bank, Umwelt bank, Triodos bank and the KfW bank playing an active role in the development of cohousing as a part of their sustainable responsibilities. In Germany, the role of private organisation has been particularly critical due to the lack of support from the government in the housing sector (Solano, 2013). This chapter provides an introduction to the German banking system and a brief insight in the relation between these financial institutions and the cohousing model.

#### **Type of financial institutions**

*Example of each type is listed below.*

##### **Private**

The Triodos bank is fairly new in Germany, however across Europe it has been a pioneer in supporting sustainable development since the 1980's. The bank's name roughly translate to- A three way approach towards people, planet and profit (Ehlers Interview, 2016). Supporting community housing and social projects have been an important aspect of the bank's philosophy and as per their official website, they have supported about 315 community projects in the year 2015 (Triodos Bank-Community Projects & Social Housing, 2016).

## **Cooperative**

Initiated in 1974, the GLS bank stands for *Gemeinschaftsbank für Leihen und Schenken*, which translates to "community bank for loans and gifts". According to their official website, the bank focuses on ecologically, socially and culturally oriented projects and provides finance to community living projects as well as agricultural, educations and other socially motivated business models (GLS Bank, 2016).

## **State**

The KfW bank is fully owned by the German state. The bank was formed in 1948 as a part of the Marshall plan. The KfW banks stands for *Kreditanstalt für Wiederaufbau* which translates to Reconstruction Credit Institute. According to their 2015 annual report, the bank has sustainability as its prime business targets and is committed to social responsibility along with environmental and climate protection (KfW Sustainability Report, 2015). Along with the Federal Ministry of Building, Transportation and Urban Development, it has started the *Energy Efficient Refurbishment* Program which aims at providing financial assistance to the German residential sector with a view of reducing the CO2 emissions (KfW Group, 2016). Accordingly, most of the cohousing projects receive financing as a package in which approximately 90% of the finance is provided by one of the above mentioned sustainable banks and about 10% is from the state-owned KfW bank. The KfW bank provides finance to cohousing projects provided certain energy efficiency requirements are satisfied (Schmidt Interview, 14.09.2016).

## **Challenges**

In spite of the cohousing model being perceived as a positive form of development, there is hesitation on the part of financial institutions in supporting cohousing projects. This is primarily due to the fact that many banks lack the expertise to estimate the value of such projects, and second, the percentage of risk is much higher with housing groups since they lack technical and financial expertise (Ehlers Interview, 15.09.2016).

When it comes to financing the cohousing model, banks prefer groups which legally are GmbH or e.G. The Triodos bank on the other hand has a strict policy of not financing the WEG model, this is due to WEG leading to speculation (Ehlers Interview, 15.09.2016). Wilfried Brzynczek from the DKB bank further states that, the GbR form is the least preferred because it demands additional work and communication on the part of the bank owing to procedures for the entire group. The GmbH or e.G. on the other hand have a simpler and much clearer structure. Further to this, group dynamics, sound financial plans and availability of design documents etc. also play a vital role in the banks willingness to finance the cohousing groups. (Brzynczek Interview, 12.09.2016).

## **5 Group Formation, Education and Networking**

### **5.1 Background**

This chapter details one of the most crucial aspects of cohousing development, i.e. group formation and management. After a sustained period of cohousing development, many European cities have a strong framework which enables the cohousing residents to join together, choose the type of development they want to be associated with and connect them to relevant experts, professionals and financial institutions etc. This mechanism is critical in instilling confidence in the users which enables them to approach cohousing as an alternative model of development.

*Netzwerkagentur GenerationWohnen*, Berlin, states that, one of the first steps towards a successful cohousing development is that its future residents clearly consider their preferences, priorities, expectations and demands before forming/joining a group. In Europe, the formation of a group begins with an initiative taken either by a consultant or developer; or, it begins with people connecting with each other on their own through their personal contacts, acquaintances, etc.(Netzwerkagentur GenerationenWohnen, 2012).

Winfred Härtel, Project manager at *Winfried Härtel Büro für Projektentwicklung*, on the CoHousing Berlin website states that, the process of defining the ideas is the one which usually demands the most energy and dedication, however, it is this process itself that helps the group lay a clear programme of their project and develops the bonding, trust and culture of constructive discussions within the group (Härtel, 2016a).

Further, Knorr-Siedow states that, if one analyses the dynamics of a group over its time span, it is observed that the initial stages are the most spirited; hence it is recommended that the guidelines and rules to run the organisation should be chalked out in these initial stages to avoid unnecessary disagreements later (Knorr-Siedow Interview, 02.09.2016). Further to this, for a good project it is advisable that people from similar economic backgrounds collaborate together, difference in age usually tends to not be a concern and people do assimilate over time if they are comfortable with each other (Interview with Mr. Maximillian Vollmer, 24.08.2016). Lastly, authors of the book- *The cohousing handbook- Building a place for community*, Chris and Kelly Scotthanson state that it is important that group members realise that the key to a successful group is striking a balance between standing up for aspects that really are important and letting go of those issues that don't really matter (Scotthanson and Scotthanson, 2004).

### **5.2 Cohousing platforms**

#### **5.2.1 Netzwerkagentur GenerationWohnen**

As per Maximillian Vollmer, the agency was formed under the *Stattbau City Development Company* who was commissioned by the Senate Department for

Urban Development in order to develop a counselling centre which would support the development of cooperatives with a focus on inter-generational living (Vollmer Interview, 24.08.2016). As per the *Netzwerkagentur GenerationWohnen* official website, the agency

- Offers ideas for collaborative housing projects
- Provides consultancy for all questions related to joint housing and intergenerational living projects
- Provides support in the initiation and development of the housing projects
- Acts as an intermediary between the housing industry, housing cooperatives, private landlords and property owners.

The *Netzwerkagentur GenerationWohnen* is funded by the Senate Department for Urban Development and hence offers its services without any additional charges (Netzwerkagentur GenerationenWohnen, 2012).

### **5.2.2 CoHousing Berlin**

CoHousing Berlin is an online networking platform initiated by architect and urban activist Dr. Michael LaFond along with project manager Winfried Härtel. The agency advises interested people, city administrations, institutions, etc. on the topic of cohousing and coliving through various seminars, lectures and workshops (Härtel, 2016c). The CoHousing Berlin website, apart from assisting people in finding suitable cohousing communities, also creates general awareness regarding the various aspects of cohousing by citing relevant projects from Berlin as well as from international markets. The information it provides ranges from project initiation to design to post occupancy management.

### **5.2.3 id22- Institute for creative sustainability, Berlin- EXPERIMENTDAYS**

The id22- Institute for creative sustainability initiated by Dr. Michael LaFond promotes cohousing through an event called the 'EXPERIMENTDAYS' since the year 2003. The event is organised to function like a fair wherein the organisers bring together 30 to 40 projects from Berlin that are seeking partnership or assistance. An approximate 500 people along with banks, foundations and other governmental organisations turn up for the event and discuss the various challenges and opportunities that the model offers ( id22: Institute for Creative Sustainability, 2016).



Image 3- Group discussions held during the EXPERIMENTDAYS

Source- (Creative City Berlin, 2016)

Apart from this, Dr. LaFond argues that the presence of these networking platforms plays a role in governmental lobbying for cohousing on a whole, this is essential because the public companies and the federal government own substantial land in Berlin and the most important step towards improving the next generation of cohousing would be improving the cooperation with the local governments (LaFond Interview, 08.12.2016).

#### **5.2.4 Agency for Building Communities, Hamburg**

The agency initiated by the municipality of Hamburg in 2003 functions as a guide for cohousing aspirants since the year 2003 (Agentur für Baugemeinschaften, 2016). Similar to the *Netzwerkagentur GenerationWohnen*, the agency acts a single point of contact for residents as well as professionals. Apart from developing a directory of all cohousing projects in Hamburg, the agency guides residents on topics of accessing land, finance and managing group administration. Today, an increasing number of people in Hamburg benefit from this agency because the planning authority has essentially reserved 20% land in the larger development projects such as the Mitte-Altona and Baakenhafen-Quartier/Eastern HafenCity for building groups (Baugemeinschaft Hafenliebe, Hamburg, 2016).

### **5.3 Cohousing development process**

Chris and Kelly Scotthanson mention that the development carried out by a community varies greatly from the development carried out by an individual developer or a development firm (Scotthanson and Scotthanson, 2004). A developer is usually well-versed with the associated risks, has good access to land and has

capacity to borrow money; finally he has access to reliable experts and consultants related to the construction sector. On the other hand, a group of residents without any formal expertise in construction face considerable challenges to kick-start and manage the project. Wilfried Brzynczek states that, the decision making process is better with a developer due to the expertise that is available with him; with people the decision making usually is difficult and takes longer (Brzynczek, 2016). Chris Scotthanson and Kelly Scotthanson (2004) further state that, a group would benefit greatly by having experts from the construction field as one of their members, when this is not the case, to undertake such a task it is essential that the group has managed to generate certain capital, understood the language of development and most importantly learned to make decisions as a single entity to communicate effectively with the various consultants and experts working on the project.

A successful cohousing project is an outcome of managing a very complex process. Although every project is unique in its own sense, the various stages of development are relatively similar to those of other projects.

## **5.4 Phases of a cohousing project are as listed below:**

### **1. Orientation Phase 6-12 months**

- Interest group
- Search for further members and experts
- Search for buildings or sites
- Conceptual design
- Outline cost estimates
- Organisational and legal form

### **2. Planning Phase 3-6months**

- Planning regulations requirements
- Selection of architect /specialist consultants
- Selection of project manager
- Real estate purchase option
- Construction project planning
- Optimise the design
- Cost calculations
- Secure the financing

### **3. Purchase/ Construction Preparation 4-6months**

- Purchase the plot
- Bill of quantities for construction work
- Tendering for construction contracts
- Construction insurance
- Award of contract

#### **4. Construction Phase 12-15 months**

Site management/ supervision

Financial control

Accounting of modernisation/ own contribution/ construction

Final acceptance

#### **5. Residential Phase**

Care and maintenance

Building management

Group process

(Netzwerkagentur GenerationenWohnen, 2012: 76)

## 6 Case studies

### 6.1 Background

This chapter focuses on five case study projects across Europe. Along with the literature reviews, case study analysis forms an essential medium by means of which cohousing is understood in greater depth in this research. The lessons learnt in this analysis are critical from the point of view of suggesting ideas and reforms for the case of developing cohousing in Mumbai. In order to evaluate the development of cohousing over a larger geographical canvas, the case studies explore projects in Berlin, Hamburg, Amsterdam and London. All of these cities boast high economic and cultural stature in Europe similar to what Mumbai offers in the Indian sub-continent. The selection of these case studies was influenced by the fact that each of them embodies distinctive organisational, management and architectural aspects that provide a liberal overview of how cohousing has developed in the European context. More importantly, the projects were selected on their ability to relate with the proposed cohousing project in Mumbai whose site is a part of the highly valued dysfunctional port land in the centre of the city. The information for the cohousing projects in Berlin and Hamburg is primarily developed through interviews with architects, site visits and is complimented by online research, the reason being these three case studies were explorative in nature and hence required detailed inspection. On the other hand, the information for the projects in London and Amsterdam has been developed mainly by online research and the project's official websites; this was because both these case studies were developed to attain a general overview of the cohousing models in Europe.

Below are the key defining aspects of each of the projects owing to which they were included as a part of the research.

- 1) The R50 is an architect-led cohousing development in Berlin. The project targets middle-income residents mainly from the creative fields who would find it difficult to access a property in the prime area of Berlin. The project is a good example of the role played the city administration in providing land and financial subsidies in order to help develop the project. The R50 also exemplifies low cost construction through innovative planning and user-oriented simple details.
- 2) The Vrijburcht cohousing project in Amsterdam is a resident-led development. One of the most interesting aspects of the project has been the role of the city planning department in providing land on its newly developed district to support innovative housing models. Apart from the role of the city planning department, the role of the *De Key* which is a national housing agency in providing financial backing and managing its commercial spaces is also interesting. The project also boasts excellent management of its social capital to minimize the project's running costs.

- 3) The Spreefeld Genossenschaft in Berlin is an example of resident-led cohousing model. The project aimed at affordable, environmentally sustainable and socially robust housing model developed in the former industrial zone of Berlin. The project targets relatively well-off as well low income residents to enhance the diversity of the group. The case study is also a good example of mixed-use development as well as of a project that targets urban regeneration.
- 4) The Baugemeinschaft Hafentiebe in Hamburg is an architect-led cohousing project developed on the prime HafenCity regeneration area. The project is an excellent example of a relatively affordable, intergenerational housing built on prime real estate in the city. The case study also illustrates the mechanisms through which the city planning department distributed land on the underused port lands.
- 5) The Coin Street project from London is one of the most influential mixed-use cohousing developments in the United Kingdom. The project was developed after a long-term campaign undertaken by the local residents against the speculative commercial developers in London's South bank. The core idea of this project was to utilize the commercial potential of the site and utilize cross-subsidizing mechanisms to provide social housing, open and commercial spaces for its working-class residents.



Map 1- Location of case study projects

Source- Self evaluation

## 6.2 R50

**Location:** Berlin, Germany

**Site Area:** 2056 m<sup>2</sup>

**Total Living area:** 2075 m<sup>2</sup>

**Total Commercial area:** NA

**Ownership structure:** WEG

**Legal structure:** GbR (during planning phase)

**Owner of land:** Residents

**Number of residential units:** 19

**Number of commercial units:** NA

**Type of shared spaces:** Roof terrace, guest apartments, communal room in basement, yard adjacent to building

**Project year:** 2011-2013

**Project cost:** 4,502,000 Euros (Land + Construction cost)

**Type of project:** Multifamily residential

**Architects:** ifau und Jesko Fezer, HEIDE & VON BECKERATH

(Archdaily, 2015), (Schmidt Interview, 14.09.2016)



Image 4- R50 project as seen from Ritterstrasse

Source- (FSB, 2014).

**Site:** The project is located in the increasingly attractive working class area of Berlin in Kreuzberg. The building site is located amidst social housing neighbourhoods dating back to the 1960's, the site was previously utilized by Jewish families involved in the metal works industries (Schmidt Interview, 13.09.2016). The project was named R50 due to it being located on the address Ritterstrasse 50.

**Vision:** According to R50 resident and artist Florian Zeyfangcost, the *Baugruppen* is a solution for the time when the city fails to provide in the manner in which it ideally should (Bridger, 2015). As per the architects, in the last 30-40 years, the architect was considered the expert having the final word in design with very little input from the users; this single factor has been responsible for damaging the quality of living and working spaces. To counter this, the architects in R50 wanted to consciously adopt the approach of involving residents in the design and planning phase of the project (Anderton, 2015). Lastly, the architects wanted to be a part of a project that would allow for middle-class, creative professionals similar to them to live in the centre of Berlin in the type of apartments that would suit their lifestyle and requirements (Schmidt Interview, 13.09.2016)

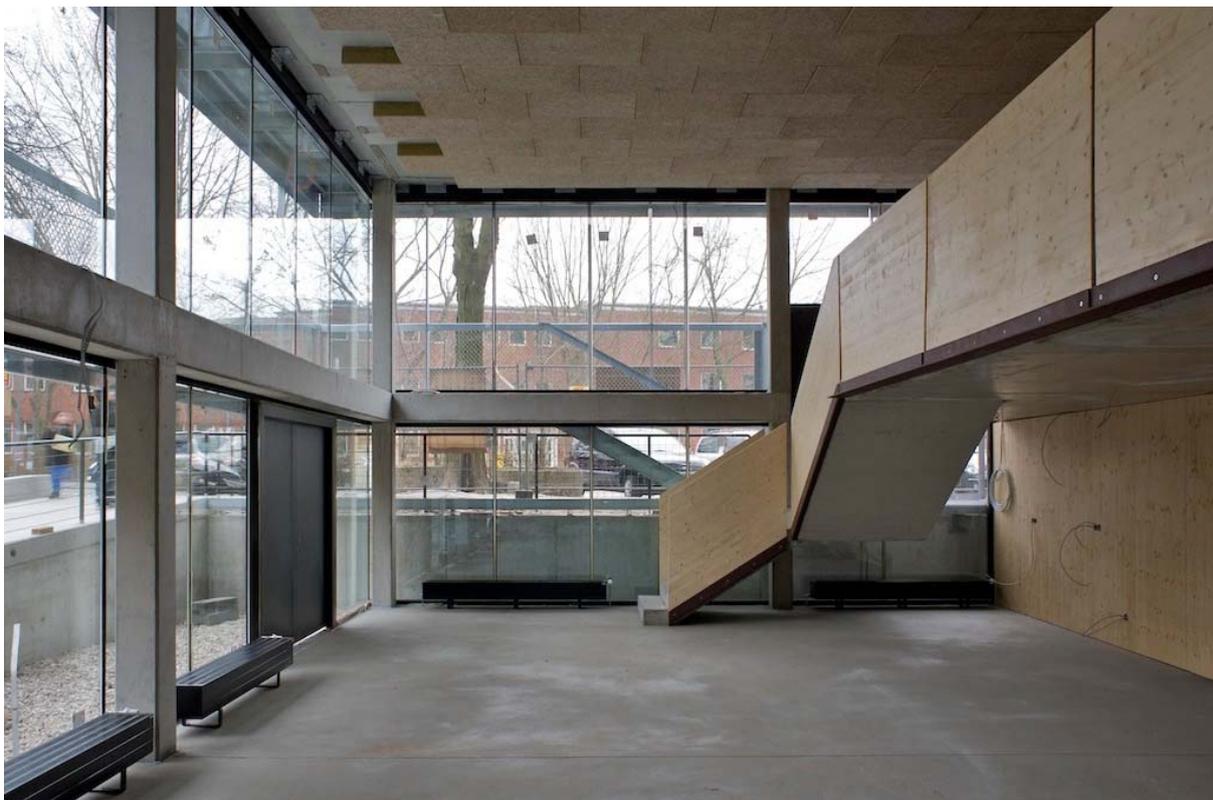


Image 5- View of common space and kitchen as seen from the entrance

Source- (Baukultur Bundesstiftung, 2014)

**Group formation:** This initiative was led by the architects. Potential group members were targeted through networks which included friends, collaborators, etc. Further, internet website portals were also extremely helpful in connecting people (Anderton, 2015). Meetings were conducted by the architects at a span of every two weeks for

about 20 months. The project started with about 50% of the total resident group to form a stable amount of financial resources. Decisions were always taken by majority; issues discussed in one meeting were usually carried on for the next 2-3 meetings before being concluded. It is here that the moderator played a critical role in managing the meetings and making sure conflicts are dealt with in positive spirits, moderator for this project was appointed by the architects (Schmidt Interview, 13.09.2016). The project manager had access to the group finances which was directed towards the cost of construction. A group of elected members from the residents was formed in order to oversee the work of project manager.

**Legal:** The project started as GbR and later converted to a WEG. The reason for WEG ownership was the condition laid by the municipality as well the desire of the people to own their apartments (Schmidt Interview, 13.09.2016).

**Finance:** Each member of the group had to arrange their own capital; for residents looking to apply for a loan, the banks were willing to finance provided all the members acquire loan from a single source. This was demanded by the banks in order to avoid complications that might arise in case of payment defaults. Funding for this project was mainly provided by the Umwelt bank. Through the bank, the project manager was allowed to access everyone's background, income statistics, taxes etc. Part of the finances received from the Umwelt bank was from the KfW bank; a pre-requisite to source the low-interest state finance was that the project should be a low energy building. Subsequently, the residents managed to develop a project which was 30% more efficient than the requirements laid down for an energy efficient building (Schmidt Interview, 13.09.2016).

**Architecture:** The main challenge at hand was to develop affordable housing but at the same time come up with customized housing units to suit the needs of the residents. The building has six floors with three units on each floor, a common yard, a shared roof terrace, large communal room in the basement for all the families (Anderton, 2015). The objective of flexibility and customized units was achieved through a combination of reinforced concrete skeleton structure along with a timber facade which was governed by the layout of each apartment. This feature allowed for extensive resident participation as well as mutual agreement on the residents part to allow for design of shared spaces. The balconies were kept small in order to reduce costs while at the same time the windows were kept large enough so that when they open one feels as a part of the landscape in spite of narrow balconies. Every apartment was equipped with basic finishes and fittings, this was to keep the cost in check, in case of seniors or households with small children, custom fittings were provided on request. To achieve energy sustainability, all windows were triple glazed while all the walls were insulated to high standards (Schmidt Interview, 13.09.2016).

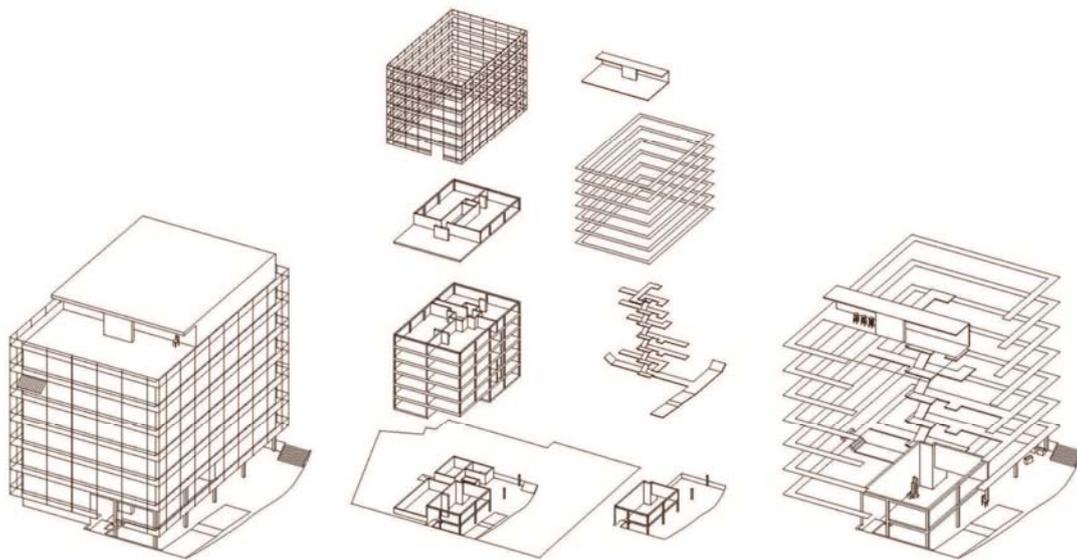


Image 6- Graphical representation of circulatory spaces and service core

Source- (Archdaily, 2015b)

**Current status:** The residents have a management board which is elected every 3 years. The maintenance, cleaning and repairs of the house is carried out by a house-keeping agency which has to be appointed as per law for every cohousing project. The main responsibility of the management board is to supervise the workings of the house-keeping agency. The common space is regularly used for monthly meetings or functions, their have been also instances of the common space being provided for temporary refugee shelter in the last year as well as for discussions and meetings for people not from the residents group (Schmidt Interview, 13.09.2016).

**Factors contributing to success:** The architects acquired the land from the city of Berlin through a process which prioritized the proposed use of land over highest bidders, the government would then hold the land at a fixed price for a timeframe of 18 months until the entire group is formed and issues related to finance/fund-raising are finalised. The rate at which the land was sold was on the basis of the rates evaluated by the city and not the market. This has been one of the most important factors on which an affordable housing project like R50 could be developed because forming a group as well as bidding for a plot at the same time is an extremely difficult task and something which hinders majority of the cohousing initiatives (Anderton, 2015).

The second important factor is the low-interest finance provided by the state run federal bank known as the KFW bank. The finance was exclusively for people who would use the house for self use and not for income generation. Although, the amount does not suffice the entire construction costs, it did help in providing a part of the expenditure. One major criterion to access the subsidized funds was to achieve high energy efficiency. Subsequently, the architects and the residents managed to develop a project which is approximately 20% cheaper than surrounding developer led projects. As per the architects, more of such projects could be realised however the hesitation to dedicate time and energy to such projects are the biggest hurdles in the entire process (Schmidt Interview, 13.09.2016).

Lastly, the architectural layout and details played a big part in keeping the project costs under check. The project targeted the use of basic materials over fancy ones. One important reason why this could be achieved was the architects could communicate with the residents during the design process, majority of the residents opted for basic fittings over luxury ones. This cannot be possible in a private developer led project because, the private developer typically does not have an idea of who will be moving in and hence they opt for better quality fancy fittings with a view of not giving the project a basic feel. The structural design of the house is such that the internal layouts in the building can be made possible without spending too much money and creating disturbance to existing structure. This is very helpful when members wish to do changes in their apartments which could be due to child birth, children growing up or needs of seniors in the house. Further, the architects who undertook this project were already experienced in planning such projects. This made it possible to finish the project on time without excessive deviation in final costs.

## 6.3 Vrijburcht

**Location:** Amsterdam, Netherlands

**Site Area:** 4400 m<sup>2</sup>

**Total living area:** 7650 m<sup>2</sup>

**Total Commercial area:**

**Ownership structure:** WEG

**Owner of land:** City of Amsterdam

**No of residential units:** 52

**Type of shared spaces:** Theatre, Guest apartments, Hobby spaces, Bike shed, Courtyard, Docks for Canoes and boats.

**Project year:** 2001-2007

**Project cost:** 16,000,000 Euros (Inclusive of all amenities)

**Type of project:** Mixed-use (Multifamily + Commercial)

**Architects:** CASA Architects

(Vergunst and Vlug, 2012)



Image 7- View of the project from the waterfront

Source- (Architectuurcentrum aorta, 2011)

**Site:** The project is located in the newly created IJburg neighbourhood composed of artificial islands in the Eastern part of the capital. The municipality who owns this land had initiated the construction of these artificial islands in order to develop and experiment new forms of urbanization, including self-built and collective housing scheme (Vergunst, 2016). From the site, residents enjoy views across the water to the historical *Diemerzeedijk*. Amsterdam's Central Station is accessible within 15 minutes of walking distance (Vergunst and Vlug, 2012).

**Vision:** The project aimed at a group from diverse backgrounds who would share amenities, live and work together, made possible through a process known as Collective Private Commissioning or Collectief Particulier Opdrachtgeverschap (CPO) (Vergunst, 2016). The project also aimed at fulfilling the accommodation needs of people who would otherwise find it very difficult to own an apartment due to the unavailability and unaffordability of houses in Amsterdam (Skodra, 2012). In order to contribute to the quality of living in the neighbourhood, the project laid high emphasis on shared and community facilities. This feature of the project which provides working spaces for approximately 40 employees proved vital in securing the building plot from the Amsterdam city council (Vergunst and Vlug, 2012).

**Group Formation:** In the year 2000, the city of Amsterdam sent invitations to submit plans for 'collective self-build' projects in the new district of IJburg (Vlugp Stedebouw & Landschapsarchitectuur, 2016). The project was initiated by the architect who had previous experience with similar cohousing projects, he set up a not for profit foundation to act as the client and invited interested people to join in the project (Custom & Self Build Toolkit, 2016). The group began as the *IJ-Burcht* initiative and presented its vision and development report with the help of CASA architects to the city council. The site was eventually awarded to the group for construction owing to their focus on diversity and initiatives to upgrade the neighbourhood (Vlugp Stedebouw & Landschapsarchitectuur, 2016).

**Legal:** The private dwellings are self-owned by the residents whereas the land is owned by the Amsterdam city council; the project has been provided the land on a 50 year perpetual lease from the city (Vergunst and Vlug, 2012). The home owners association formed by the group members is responsible for the management of the building and shared spaces whereas the *Vrijburcht* foundation which was initially formed in late 2002 manages the theatre. The *De Key*- a national housing association manages the day care centre and the cafe as well as it leases the assisted living units from the home owners (Custom & Self Build Toolkit, 2016c).



Image 8- Conceptual view of space utilisation

Source- (Peborde, 2016a)

**Finance:** A lot of the initial feasibility study was done by the architects without charging any fees, this work was critical to secure the option to build (Custom & Self Build Toolkit, 2016c). The first contracts were signed by the residents in June 2003 which gave them the option to buy the home; this phase demanded a payment of 8% of the total cost of the house to finance the cost of plans. This phase however was risky since in case of the project not being successful, each of the residents would lose their invested money (Vlugg Stedebouw & Landschapsarchitectuur, 2016). The project was mainly funded by the Rabo Bank based in Utrecht, Netherlands. The bank provided preliminary finance as well as low interest mortgage to manage the construction costs of the project (Vergunst, 2016). Apart from this, the *De Key*, provided finance for the initial stages of design development and also bought the cafe and the assisted living homes owing to the strong business plan developed by the residents. In an event of the residents not finding any new takers for the remaining houses which were vacant due to few members opting out, the *De Key* agreed to buy them and further rent them out as social housing (Vergunst, 2016).

**CPO:** The project was initiated under the CPO- *Collectief Particulier Opdrachtgeverschap* or Collective Private Commissioning model which is well established in the Netherlands. The CPO model refers to the legal framework which is developed to help private individuals and families to plan and construct houses for their own use (Custom & Self Build Toolkit, 2016c). The ministry of housing and

spatial planning in the year 2001 issued a memorandum in which the idea of getting residents involved in building their own houses became a national policy (Kapedami, 2012).

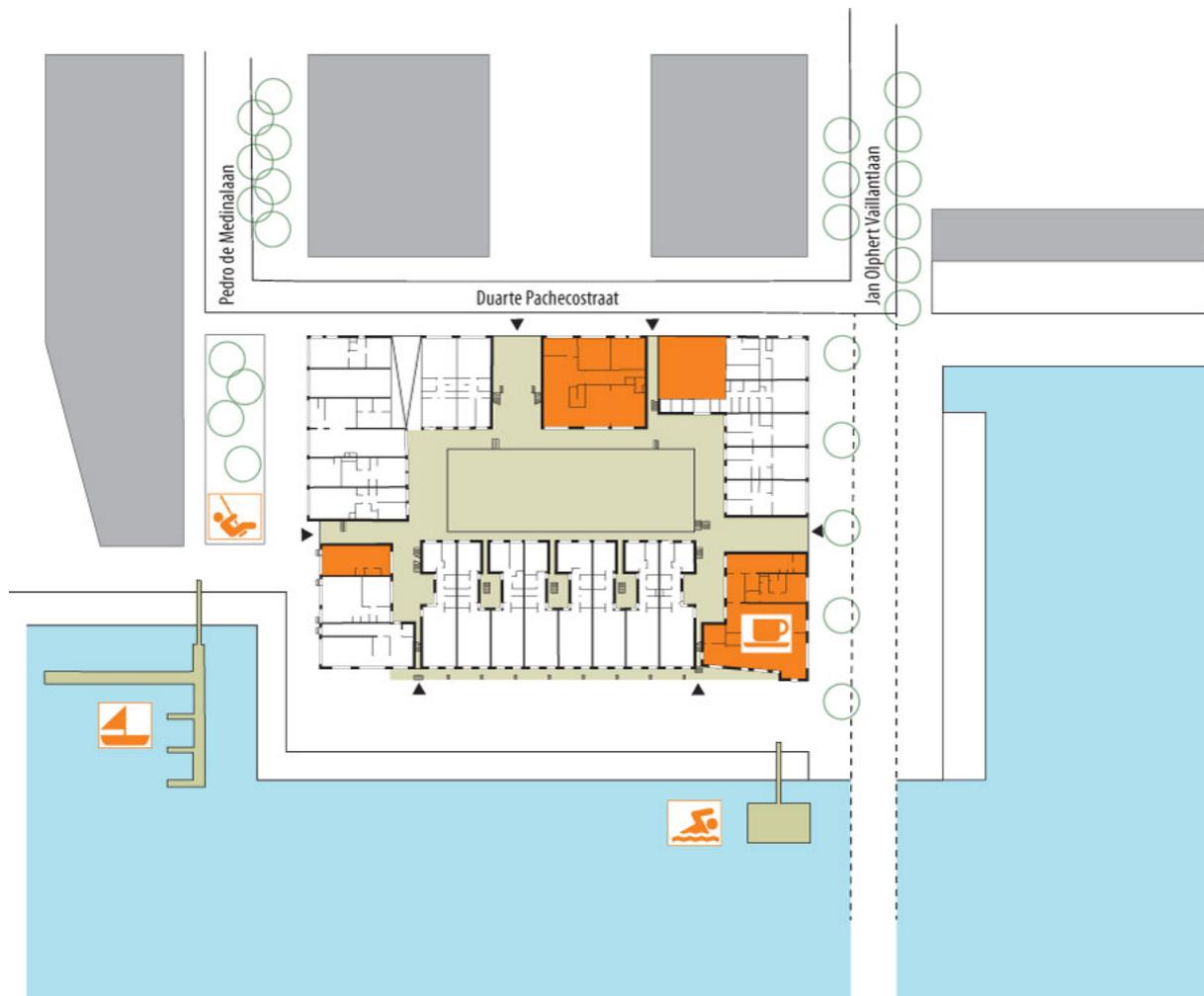


Image 9- Site Plan

Source- (*CoHousing Cultures*, 2012)

**Architecture:** Minimizing the final housing costs was the objective with which the architects approached the design and process of the project (Kapedami, 2012). Instead of planning tiny water facing apartments which could be sold on premium, the architects positioned family sized homes along the waterfront as parents and children were more likely to be present in the houses during the day to enjoy the space. All the homes are connected by generous connecting areas which act as excellent leisure and interaction spaces. The common spaces on the ground floor are designed to be flexible with the theatre and the common dining space exchanging functions over a single space (Custom & Self Build Toolkit, 2016). Although the project does utilize a rain water harvesting tank, environmental sustainability does not appear to be an important parameter in the project (Kapedami, 2012).



Image 10- View from the corridor

**Source-** (Custom & Self Build Toolkit, 2016c)

**Factors contributing to success:** In the late 90's, the government created parcels of land in the form of islands in the eastern part of Amsterdam to allow for new development. Instead of selling these to the highest bidder, the government took a conscious approach of allowing self built collective houses as an experiment to explore new forms of urbanism. Since the land was in good proximity to the city centre, it was extremely favourable and received numerous applications (Custom & Self Build Toolkit, 2016c). This was a good strategy from the government's end since one experiences that land given out at affordable rates is always far away from the city centre. This avoided the land from being ghettoized and thus being perceived in a negative light.

The government did not sell this land; rather it gave it out on perpetual lease of 50 years. Thus it was ensured that the final cost of the house would be significantly lower than other houses in the market. The total cost of the project including the land lease for 50 years was worked out to be 2,420 Euros per sq m which is an extremely affordable figure in Amsterdam (Custom & Self Build Toolkit, 2016c).

Support from the *De Key* proved vital in keeping up the confidence of the people in difficult times, which in turn helped in the project not stalling down. This sort of backing is particularly crucial in self built projects since the people involved in them are not full time construction professionals and are not associated with the mechanisms to tackle risks and slowdowns.

The architects were experienced and agreed to do the initial work of securing the option to build in free of cost. They were paid the design fees later once the group

had acquired loans from the Rabo bank (Peborde, 2016). This deferred fee was possible because the role of the architect here was different as compared to the role in a developer-led project. Further, there was a strong factor of trust and bonding within the group of which the architect was already a part of.

The project utilized its social capital in a very efficient manner. The management of the housing project was mostly carried out by retired members or by experts who were a part of the project. For example, the landscape architect who was one of the residents of the project undertook the maintenance of the common garden (Kapedami, 2012).

## 6.4 Spreefeld

**Location:** Berlin, Germany

**Site Area:** 7000 m<sup>2</sup>

**Total living area:** 6000-8000 m<sup>2</sup>

**Total Commercial area:** 1500 m<sup>2</sup>

**Ownership structure:** Cooperative, part WEG as a future form of ownership

**Legal structure:** Housing cooperative

**Owner of land:** Spreefeld Berlin e.G.

**No of residential units:** 60

**Number of commercial units:** 10

**Type of shared spaces:** Guest apartments, community meeting spaces, roof terraces, community gardens

**Project planning:** 2009-2012

**Project construction:** 2012-2014

**Project cost:** 17,000,000 Euros (inclusive of all amenities)

**Type of project:** Mixed-use (Multifamily + Commercial)

**Architects:** Carpaneto Architekten, Fatkoehl Architekten, BARarchitekten

(Archdaily, 2015), (CoHousing Berlin, 2016a)



Image 11- View from the Spree

Source- (Peborde, 2016b)

**Site:** The project is located along the Spree River in the Mitte borough of Berlin and was initially occupied by popular party beach bar called as *Kiki Blofeld*. Mitte is centrally located and is one of the most vibrant pockets of the city, it comprises of both, East and West Berlin. Interestingly, in spite of Spreefeld being close to Alexanderplatz (one of the prime real estate destination in Berlin), it was not looked at as a favourable location by private developers. This was due to it being offsetted away from the main street with only a small makeshift pathway acting as its connecting link (Bennie, 2015).

**Vision:** As per the official website of the project, the housing cooperative was initiated in order to provide for intergenerational and socially mixed communities with combined working and living arrangements (Spreefeld cooperative, 2016). The architects had a vision to contribute to the urban landscape of Berlin by a development which would harness the potential of this unique site by creating a socially, economically and environmentally sustainable and conscious project (Archdaily, 2015a).

**Group Formation:** The group was influenced by the “Media-Spree Versenken” (Stop the Media City Complex) initiative. The intent was to come up with an alternative development in place of the office buildings that were being proposed on the site which would restrict the average citizen from accessing the river front (Custom & Self Build Toolkit, 2016b). The initial core group which comprised of 10 members later on grew by connecting with their friends and colleagues as well connecting to the world outside through internet website portals. The CoHousing Wohnportal internet platform which is currently known as CoHousing Berlin and the EXPERIMENTDAYS organised by the id22 were particularly helpful in developing connections. The residents in the group are multigenerational as well as multicultural; it was also a conscious effort on the part of the group to involve low income group residents to maintain its diversity (LaFond Interview, 08.12.2016).

**Legal:** Initially, the plot owners were unsure about which legal form should be adopted; the only thing that was clear was idea of a housing project. With due time and discussions, a limited company was formed which later on was transformed into a cooperative (Valencia, 2013). As per the CoHousing Berlin website, the cooperative was formed with an objective of providing long term assistance to its residents to live life in a sustainable manner (CoHousing Berlin, 2016).

**Finance:** After forming the cooperative, the group was eligible to source loans from the financial institutions. The finance was largely provided by the Umwelt bank while a small part comprised of finances from the KfW bank. To access the subsidized finance from the KfW bank, the project was required to be non-speculative in nature and achieve a certain level of energy efficiency (Valencia, 2013). An advantage of people being a part of the cooperative was that certain residents who would not be eligible for loans owing to an unsteady income were considered as eligible for receiving loans. The land was sold to the group at the market price with an 18

months option in March 2009. The cost of an apartment today is approximately 2100 Euros per m<sup>2</sup>, private developers on the other hand are offering anywhere between 3000-5000 per m<sup>2</sup> in the same neighbourhood (LaFond Interview, 08.12.2016). All the members had to pay 50% of the construction costs to make up for the initial capital. The amount of initial money that residents had to pay was in direct relation to the size of their apartment (Archdaily, 2015a). In certain cases, low-income residents were allowed to pay only 30% upfront in order for them to be a part of the project, however, that meant they had to pay higher rents later on in their tenure (LaFond Interview, 08.12.2016). After moving in, the residents had to pay a calculated rent which would be directed towards the cooperative's loan as well as the running costs of the house. Once the members have paid off the cooperative's loans, the additional amount may be used to help fund other development activities in the project (Custom & Self Build Toolkit, 2016b).

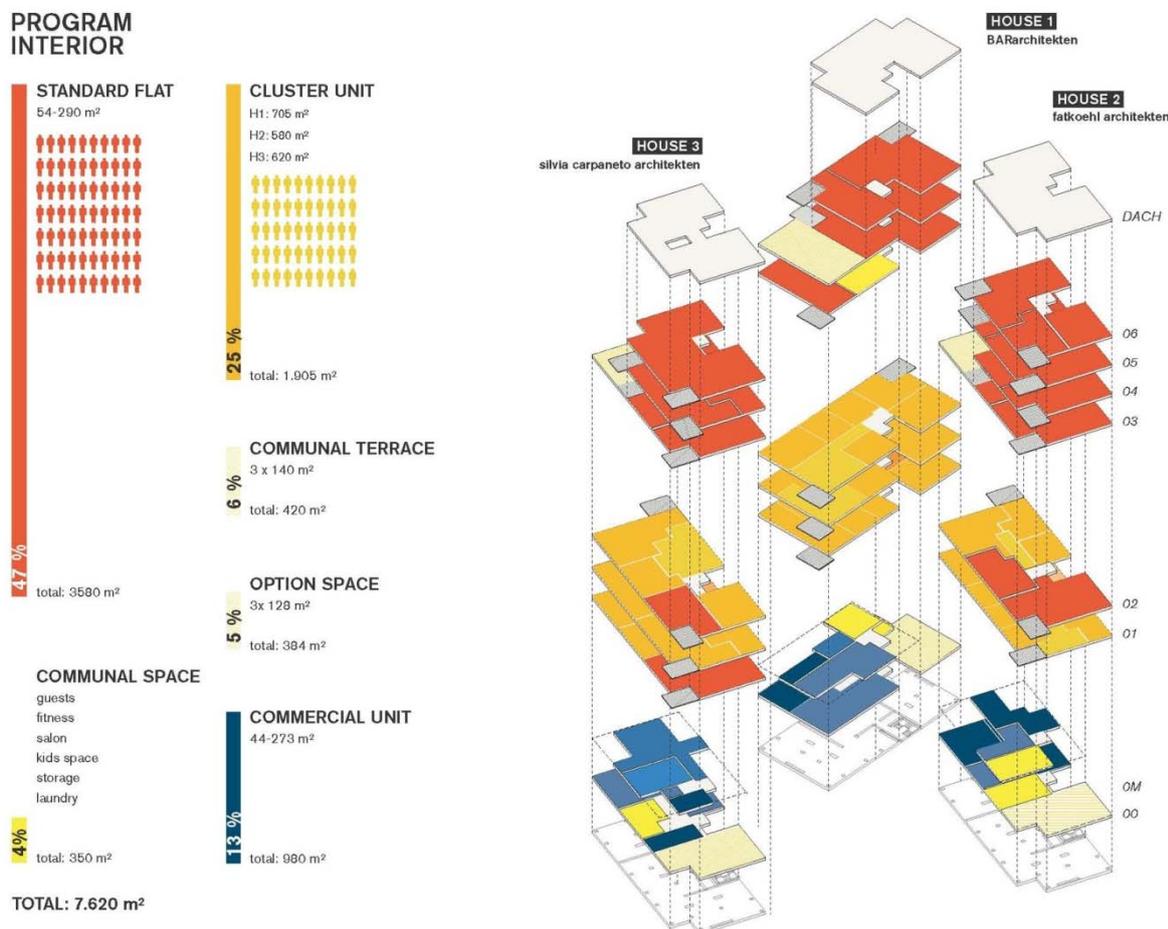


Image 12- Program interior

Source-(Archdaily, 2015a)

**Architecture:** The external shell of the building was built by the contractor while the residents had a choice to furnish their apartments themselves or get it done by a contractor (LaFond Interview, 08.12.2016). This allowed for lower final costs as well as gave the inhabitants the freedom to choose the type of fittings they would desire

for their apartment as per their financial capabilities (Custom & Self Build Toolkit, 2016b). All three buildings comply with the passive house standards and generate their own electricity through a combination of geo thermal and photovoltaic system. The master planning of the buildings is done in such a way that the river side view of the surrounding buildings is not obstructed by the Spreefeld buildings. One of the most interesting features of the project has been allowing non-residents within the cooperative's premises. The non-residents are allowed to access landscaping on the ground floor, the river front, as well as the boat house for community or cultural projects, thus the project maintains its non-gated and inclusive approach towards the city (Archdaily, 2015a). The openness of the ground floor is compensated by green terraces which contribute to environmental sustainability as well as provide the residents of the project with their private outdoor community space (LaFond Interview, 08.12.2016).

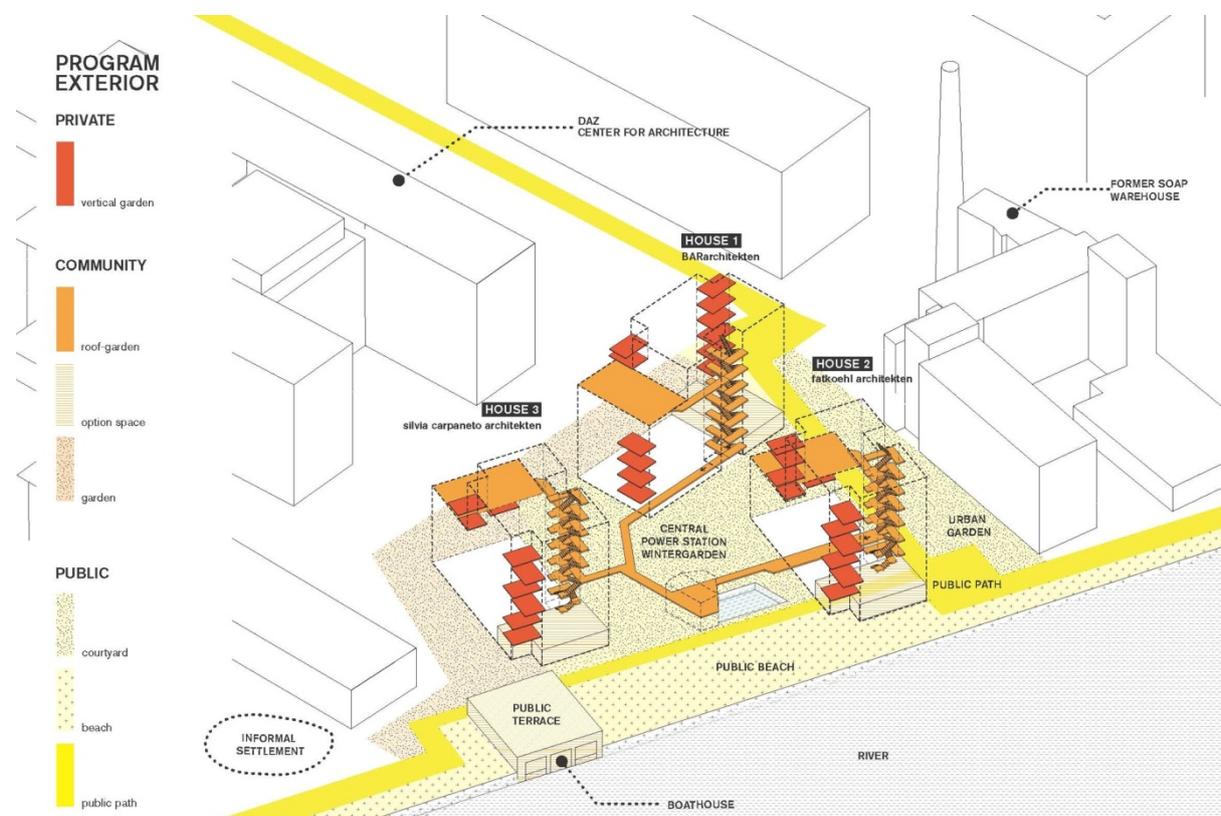


Image 13- Program exterior

Source- (Archdaily, 2015a)

### Factors contributing to success

Most of the members of the group were already aware about the cohousing model while a few of them had already been a part of some other cohousing society before being a part of the Spreefeld. This helped in efficient decision making, better coordination and residents getting adjusted to the more communal way of life which any cohousing offers at a much faster pace.

The loan package provided by the Umwelt bank had a share from the federal KfW bank in it. The KfW bank provided loans at subsidized rates considering the nature of the project as well as incentivized them to develop a low-energy development. All the members were encouraged to apply for individual loans from one bank; in this case it was again the Umwelt bank. This allowed the bank the opportunity to reduce the complications that may arise in case of default payments. Next, it gave them a complete idea about the background and financial capabilities of each member involved in the group before they could lend money. For the group it was beneficial because they could negotiate better interest rates with the banks owing to the fact that they represented a large customer base.

From a planning perspective, the apartments in the project were of varying sizes. Residents had a choice of normal apartments or cluster apartments. This allowed for a wide resident group, ranging from relatively well-off to economically weaker as well as young professionals with good education but with little savings. People from different backgrounds, age groups and professions bought with them different strengths and capacities which in turn contributed positively to the way people live and interact in the cohousing project.

One of the vision statements of the project was to create a live and work together atmosphere which ultimately would lead to a sustainable way of life. This has worked positively for the residents since many of them now have their working spaces right next to their living areas. Further, the commercial spaces draw rent which is directed towards the cooperative's loans, maintaining the project as well as improving the marketability of the project through facilities like day care centres.

## **6.5 Hafenliebe, Hamburg**

**Location:** Hamburg, Germany

**Site Area:** 7000 m<sup>2</sup>

**Ownership structure:** WEG (Condominium)

**Owner of land:** Hafenliebe GbR

**No of residential units:** 54

**Number of commercial units:** 8

**Type of shared spaces:** Guest apartments, community meeting spaces, community gardens

**Project planning:** 2005-2008

**Project construction:** 2009-2010

**Project cost:** 15,900,000 Euros (2010)

**Type of project:** Mixed-use (Multifamily + Commercial)

**Architects:** Iris Neitmann- StadtLandFluss



Image 14- View from the main entrance

Source- (Custom & Self Build Toolkit, 2016).

**Site:** The Baugemeinschaft Hafenliebe is located in the HafenCity neighbourhood. The HafenCity is an urban regeneration project consisting of new residential and commercial developments built in the area of former rundown warehouses. As a part of its development policy, one fifth of the total land under the entire development is allocated for private homebuilders building groups, also known as *Baugemeinschaften* (Custom & Self Build Toolkit, 2016).

**Vision:** The vision of the Hafenliebe project was similar to other self built projects across Europe, to access good quality affordable housing and live in a socially supportive environment. The project was initiated by architect Iris Neitmann in order to enable young families with low incomes, older people and self-employed people without a regular source of income to access a decent form of accommodation (Custom & Self Build Toolkit, 2016).

**Group Formation:** The project was initiated by the StadtLandFluss. Upon its selection, it secured exclusivity rights for construction. After securing the exclusivity rights, residents were recruited over the 18 month window that was granted to the StadtLandFluss. About 50 families along with relevant experts were involved in the periodic group discussions and meetings. In order to ensure quicker decision making, the architects provided the residents with a fixed material palette and limited layout options, this has been vital in reducing conflicts and ensuring quicker decision making (Custom & Self Build Toolkit, 2016).

**Finance:** The total cost of the project in 2010 was worked out to be 15.9 million Euros. This was considering 2700 Euros per square meter. This cost today has escalated to 6000 Euros per m<sup>2</sup>. In order to curb speculation, the residents are barred from selling or renting their properties for a 30 year period. Finance for the project was provided mostly by commercial banks along with small portions from the KfW bank and Hamburg's own development bank (the IFB) (Custom & Self Build Toolkit, 2016).

**Architecture:** The project benefitted by the fact that detailed and standardized urban design specifications were used across HafenCity. As a result of this it was easier for the architect of this project to collaborate with neighbouring projects to develop car parking or manage day lighting and open space issues. All the flats are designed to achieve high energy efficiency in order to fulfill the requirements laid down by the KfW bank (Custom & Self Build Toolkit, 2016).

**Factors Contributing to Success:** *The Agency for Building Groups*, a municipal department maintained by the city of Hamburg has been responsible for advising building groups, assist with issues related to accessing land, and connect building groups to construction and financial experts. The HafenCity project took strong measures through land reservations to support building groups. This was because these projects led to strong community development and benefitted the average citizens than being used solely for speculation by the select few in the city. Competitive tendering allowed for optimum allocation of land. Rather than

considering highest bid it favoured a point system in which, 30 % points were linked to the price offered and 70% points to the concept of land use (Custom & Self Build Toolkit, 2016). Through this, it was ensured that the land not only fetches a reasonable price but more importantly is used in the most efficient manner benefitting the residents of Hamburg. The successful bidder was given an option to build on payment of a non-refundable deposit. This allowed for a window of 18-24 months in which the group could arrange for finances and strengthen the group. This was to ensure that a deserving group does not miss out on the chance to build against the financial might of any other party. Lastly, a cap was placed on the resale and renting out of houses developed by building groups. Resale was limited to 30 years and renting was prohibited (Custom & Self Build Toolkit, 2016). This was to ensure that any of the above subsidies are not directed towards speculation.

## 6.6 Coin Street, London

**Location:** London, England

**Site Area:** 13 acres

**Ownership structure:** Cooperative

**Owner of land:** Coin Street Community Builders (CSCB)

**Type of project:** Mixed-use (Multifamily + Commercial)

**No of residential units:** 220, total number of residential units from four different housing cooperatives under the same development.

**Type of commercial spaces:** Shops, cafes, restaurants, bars, film and youth clubs, multi-sports clubs, conference and meeting spaces, gyms, design studios, gallery spaces and reception venues.

**Type of shared spaces:** Guest apartments, community gyms, community gardens, children day care centre

**Group formation and project planning:** 1977-1984

**Project construction:** 1984-current (New developments are still being considered)

(Bibby, 2001), (Future Communities, 2009), (Lamarca, 2010)



Image 15- Bird's eye view

Source: (Tompkins, 2017)

**Site:** Coin Street is one of the most successful brown-field mixed use-development projects in the United Kingdom. Today, the site is surrounded by several tourist attractions in London, notable amongst them are the London Eye, Tate Modern Gallery and the Royal Festival Hall. The 13 acre site is located on London's south bank and was once part of a derelict industrial area. In the 1960's, the site was subject to increasing attention from private commercial developers and was pitted for a major overhaul (Future Communities, 2009). This resulted in large scale gentrification leading to numerous families moving out and shops being shut down anticipating the future developments.

**Vision:** Local protest groups soon emerged as a response to the displacement caused by the proposed speculative development (Lamarca, 2010). Subsequently, the *Coin Street Action Group* (CSAG) was formed in the late 70's with a vision for social housing, community facilities and open spaces instead of the speculative commercial development (Bibby, 2001).

**Campaigning and Group Formation:** Campaigning for the project lasted for 7 years and witnessed two public hearings. The outcome of both the hearings was inconclusive with both the plans being (from the private developers and CGAG) approved. However, the developers finally pulled out due to sustained community pressure and the local governments decision to support the project (Spatial Agency, 2011). The housing was eventually built by a separate association known as Coin Street Secondary Housing Cooperative (CSS) which then leased out the housing units to four individual housing cooperatives. All the new members of the housing cooperatives were expected to undergo a specific training course for their successful integration into the community (Bibby, 2001).

**Land acquisition:** In spite of a strong campaigning process, accessing land was the toughest challenge for the CSAG. The land was partly owned by the Greater London Council (GLC) and partly by private companies. The alternative development proposal developed by the Coin Street Community Builders (CSCB) won the support of the GLC and mounted pressure on the proposal put forth by private developers. The group worked with the GLC and local borough council to implement planning controls on the land which would curb commercial speculation of land. Subsequently, with the developers pulling out, the GLC acquired the land from the developers and other authorities and sold it to the CSCB- a not for profit group set up by the CSAG (Future Communities, 2009). Only locals were permitted to be a part of the CSCB and board of members were chosen by an election process (Bibby, 2001).

**Finance:** The initial finance for developing feasibility plans and hiring consultants was provided to the CSAG by the GLC in form of a loan. Further, during the purchase of the land, the group once again received assistance from the GLS, Greater London Enterprise Board, as well as from private mortgages (Future Communities, 2009). Additional funds were raised by temporary car parking facilities developed on site (Bibby, 2001).

**Architecture:** The first cooperative building was completed in 1988 while the last of the four was completed in 2001. The commercial OXO tower was inaugurated in 1995 (Lamarca, 2010). Other parts of the site are yet to be developed with proposals for swimming pool, community fitness centre, commercial centres, etc. all being under consideration. All houses are built to extremely high green design standards (Future Communities, 2009).

**Mixed-use development:** One of the most crucial decisions taken by the group was to refurbish the OXO tower into a social housing and commercial development without involving any external investors (Future Communities, 2009). This was because the profit oriented interests of an investor would not match with the ideals of the CSCB. In such a situation raising capital was always going to be a challenge. Eventually, the group managed to access finance to refurbish the OXO tower and then rope in some of the well known restaurants and studios to set up their outlet in it. Although, this was against their initial idea of not converting the space for high end luxury outlets, the CSCB eventually realised that it was essential that such development be undertaken so that other community oriented facilities could be financed (Bibby, 2001). The returns received from commercial development in OXO were directed towards construction of housing and new commercial spaces. Later when the Tate modern and London Eye were opened, the number of leisure and commercial activities grew exponentially, all of which directly benefitted the Coin Street development (Lamarca, 2010).

**Factors Contributing to Success:** One of the biggest advantages that Coin Street had or will have over similar developments is its site potential. In spite of it being derelict, it had immense commercial potential owing to the presence of the Royal Festival Hall and the National Theatre. As a result, the commercial development that was undertaken by the CSCB, although initiated with substantial struggles, went on to provide high returns on investment. The group's decision to venture out without partnering with any external investor also proved crucial. This allowed them to focus on their social endeavour without compromising too much on their ideals.

The long campaigning period gave the members enough time to define their core values and future requirements. A substantial number of members were already experienced in governance and were a part of other surrounding cooperative movements, as a result of which the quality of social capital in the group was extremely high (Lamarca, 2010). The members of the CSAG were willing to wait and invest their time and energy into a project that they believed in, all this in spite of being pitted against established commercial developers. Lastly, Coin Street also benefitted by strong political will shown by the GLC. First, by showing support to the alternative proposal developed by the CSAG and later by implementing measures to place planning controls with a view of curbing speculation, the GLC provided vital political and financial backing to the initiative taken by the CSAG.

## 6.6 Analysis of case studies

One of the most pressing issues faced by all cohousing projects in Europe has been access to land. In all of the projects except the Spreefeld, the government played an extremely vital role in enabling the cohousing residents to access land. In Germany and the Netherlands, land for certain innovative projects is typically sold or leased out by placing higher preference to quality of use than the highest bid; further to this, once a group has secured land, they are given an 18-24 month window to arrange for finances as well as to strengthen the group, all this while, the cost of the land is kept frozen. This as a process has been immensely helpful in making land available to innovative housing such the cohousing model. In case of the Coin Street project, after being convinced of the alternative proposal developed by the CSAG, the government worked towards reducing the land speculation in order that the group could access land with the limited resources they had in hand.

Expert interviews from the finance sector reveal that, typically, financial institutions are hesitant to lend to the cohousing projects. Reason being, the people who assume the role of the 'builder' are not usually from the construction sector. This leads to more communication and administrative procedures on the part of the bank. Further, the cohousing model as such is very different from the usual housing model, more specifically the concept of shared spaces. This makes it difficult for banks to evaluate the financial value of the project which affects its lending process. In Germany, the GLS, DKB, Triodos and Umwelt bank are the institutions which support the cohousing model. This is mainly because all these banks work with an objective of supporting social and sustainable causes in matters of housing, nutrition, education, etc. and hence are willing to go the extra mile in understanding the intricacies of the model to support cohousing. Further to this the German government owned KfW bank provides loans for construction at cheaper rates to projects which fulfill certain low-energy criteria.

An interesting observation of all the cohousing projects has been that their architecture is not particularly spectacular in terms of pure visual appeal. However, each of the projects boast prudent use of space and intelligent detailing which led to lower construction costs; this was particularly evident in the case of the Spreefeld and the R50 projects. The cohousing model allows for discussions in which residents decide upon what quality of finishes and fittings they desire, this is unlike a developer-led project in which typically high cost fittings are provided that drive up the final cost. In most of the cohousing projects, residents opt for basic fittings and finishes upon realizing that it contributes substantially to the final cost of the house. The large common rooms and smaller dwelling spaces combined with an intelligent structural system that allows for internal flexibility are few of the many features that could be replicated in the case of Mumbai.

One of the common features in all of the above projects was the involvement of experienced project managers and architects. The city planning department of Hamburg had infact made it mandatory for the cohousing groups to have a project

manager if they have to tender for land at subsidized rates. The projects R50, Vrijburcht and Spreefeld had architects who had prior experience of developing cohousing projects; this went a long way in mitigating errors and conflicts. An inexperienced professional might not be in the best of positions to manage both, the group dynamics as well the construction hassles.

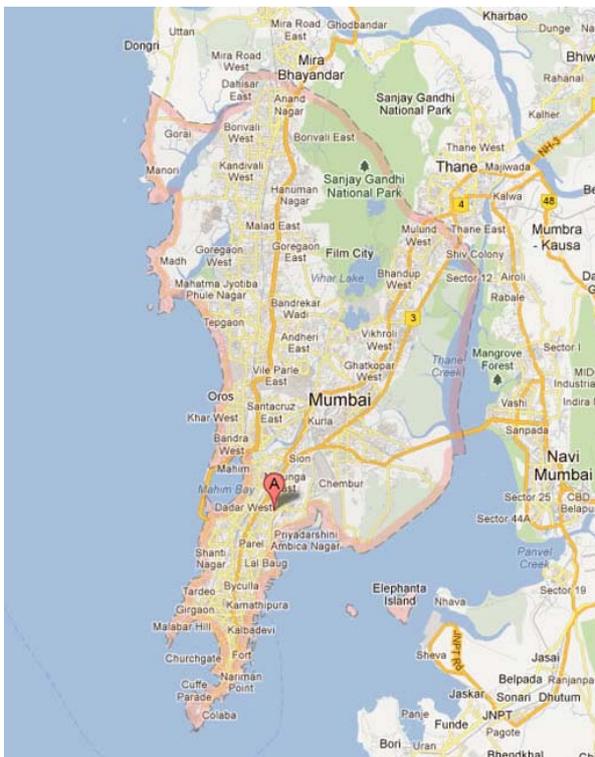
Apart from people meeting each other directly, platforms and events such as the CoHousing Berlin, EXPERIMENTDAYS, and Agency for Building groups etc. were vital in connecting people and professionals together. The CoHousing Berlin played a critical role in enabling the group development of the Spreefeld project, similar to the role played by Agency for Building groups for the Hafenliebe project in Hamburg. The Berlin government financed organisation *Netzwerkagentur GenerationWohnen* is a fine example of a connecting platform which has helped several German citizens to understand the basics of cohousing as well connect to like-minded people.

The Coin Street project proved that cross-subsidizing could prove as an efficient tool in reducing the dependency of the housing groups on external funding. By successfully integrating commercial development into their social housing program, the project raised sufficient funds to finance their social causes. In such projects, site potential plays the most critical role in deciding the success of commercial development. Hence, adequate land and market research must be done before venturing in any mixed-use development. Apart from this, it is also essential that the groups maintain a good balance between their commercial developments and other social causes. Although it is true that without a financially viable model it is very difficult to support social causes, care must be taken that such endeavours do not go down the line of a typical private developer.

## 7 Mumbai

All the above chapters dealt with cohousing in the European context. The focus of the research from this chapter onwards shifts to Mumbai. This particular chapter gives a brief overview about the few critical statistics of Mumbai.

Mumbai is the anglicised version of Bombay which means *good bay* in Portuguese. The city was under the Portuguese rule in the 16 century before being overtaken by the British till 1947 when India gained its independence. Mumbai is commonly known as the financial capital of India, with a population of nearly 20.7 million in the metros; it is the 4<sup>th</sup> most populous city in the world (Mumbai Population 2016 - World Population Review, 2016).



In 2012 the GDP of Mumbai was 124 Billion USD which accounted to about 7% share of the national GDP (Clark and Moonen, 2014). Topographically, Mumbai is a peninsula due to which its territorial growth is restricted. As per a study conducted by the United Nations, the Mumbai Metropolitan Region (MMR) by the year 2025 will be the 3rd largest agglomeration in the world with a population of 25 million (United Nations, 2009).

Map 2- Mumbai, Source: Self elaboration base on (Mumbai Map, 2017)

## 8 Affordability

### 8.1 Background

One of the prime objectives of this thesis is to target relative affordability through the cohousing model. Hence, understanding the definitions, parameters and factors that challenge affordability is extremely critical for this thesis. The information for this chapter is mainly sourced through expert interviews conducted in Mumbai, data from the National Housing Bank and private real estate research firms such as KPMG and Jones Lang LaSalle (JLL).

As per Vaijayanti Mahabale- Assistant General Manager (projects) at HUDCO, affordability is usually confused with anything that is for economically weaker sections or for low income groups, however, affordability in fact applies to all economic sections. A normal white-collared citizen of Mumbai may earn above INR 10,00,000 per annum and be considered as high income group citizen; however, affording a decent house in the centre of the city would still be way beyond his reach considering the exorbitant cost of housing (Mahabale Interview, 24.10.2016). As per Shirish Patel, when one speaks of the whole of India, people that are unable to access basic services primarily belong to the EWS or LIG category. However, in case of Mumbai, the challenge of accessibility extends to even the MIG category-people earning above the figure of around 5,00,000 annually (Shirish Patel, 2016).

Internationally, the US department of Housing and Urban development states that dedicating less than 30% share of one's annual income towards housing can be termed as affordable. Anything more than that would severely stress the households and would affect their capacities to cater to other basic needs of food, transportation and medical care (Mayank et al., 2012).

According to MHUPA, affordability for the EWS, LIG and MIG could be understood as the following

	Size	EMI or Rent
EWS	Minimum of 300 sq ft super built-up area Minimum of 269 sq ft carpet area	Not exceeding 30–40% of gross monthly income of buyer
LIG	Minimum of 500 sq ft super built-up area Maximum of 517 sq ft carpet area	Not exceeding 30–40% of gross monthly income of buyer
MIG	600–1,200 sq ft super built-up area Maximum of 861 sq ft carpet area	Not exceeding 30–40% of gross monthly income of buyer

Table 2- MHUPA (2011) guidelines for Affordable Housing in Partnership

Source: (Jones Lang LaSalle, 2012)

A further detailed out affordability model developed by JLL is as follows.

	Minimum Volume of Habitation	Provision of Basic Amenities	Cost of house	Location
EWS	Minimum of 250 sq ft carpet area	Sanitation, adequate water supply and power.	Cost of the house such that EMI does not exceed 30–40% of gross monthly income of the buyer.	Located within 20 km of a major workplace hub (could be suburban hubs as well) in the city.  Adequately connected to major public transit hubs
LIG	300–600 sq ft carpet area	Provision of community spaces and amenities such as parks, schools and healthcare facilities, either within the project or in the neighbourhood, depending upon the size and location of the housing project		
MIG	600–1,200 sq ft carpet area			

Table 3- Guide lines for affordability as developed by Jones Lang LaSalle

Source: (Jones Lang LaSalle, 2012)

In the case of Mumbai, the definition of affordability, especially the globally accepted annual income to cost of a house ratio does not entirely hold true. To give an example, the MIG in Mumbai earns anywhere between INR 6,00,000 to INR 9,00,000 annually. As per a 2016 data provided India's leading property, Magic Bricks, a basic one bedroom flat of about 60 m<sup>2</sup> in central Mumbai (Dadar) costs about INR 1,80,00,000 considering the per square foot rate of approximately INR 3,00,000. Now if one considers this equation, the relation between the house costs and MIG income is a staggering 20 times as compared to the worldwide accepted values of anywhere between 3 to 4 times.

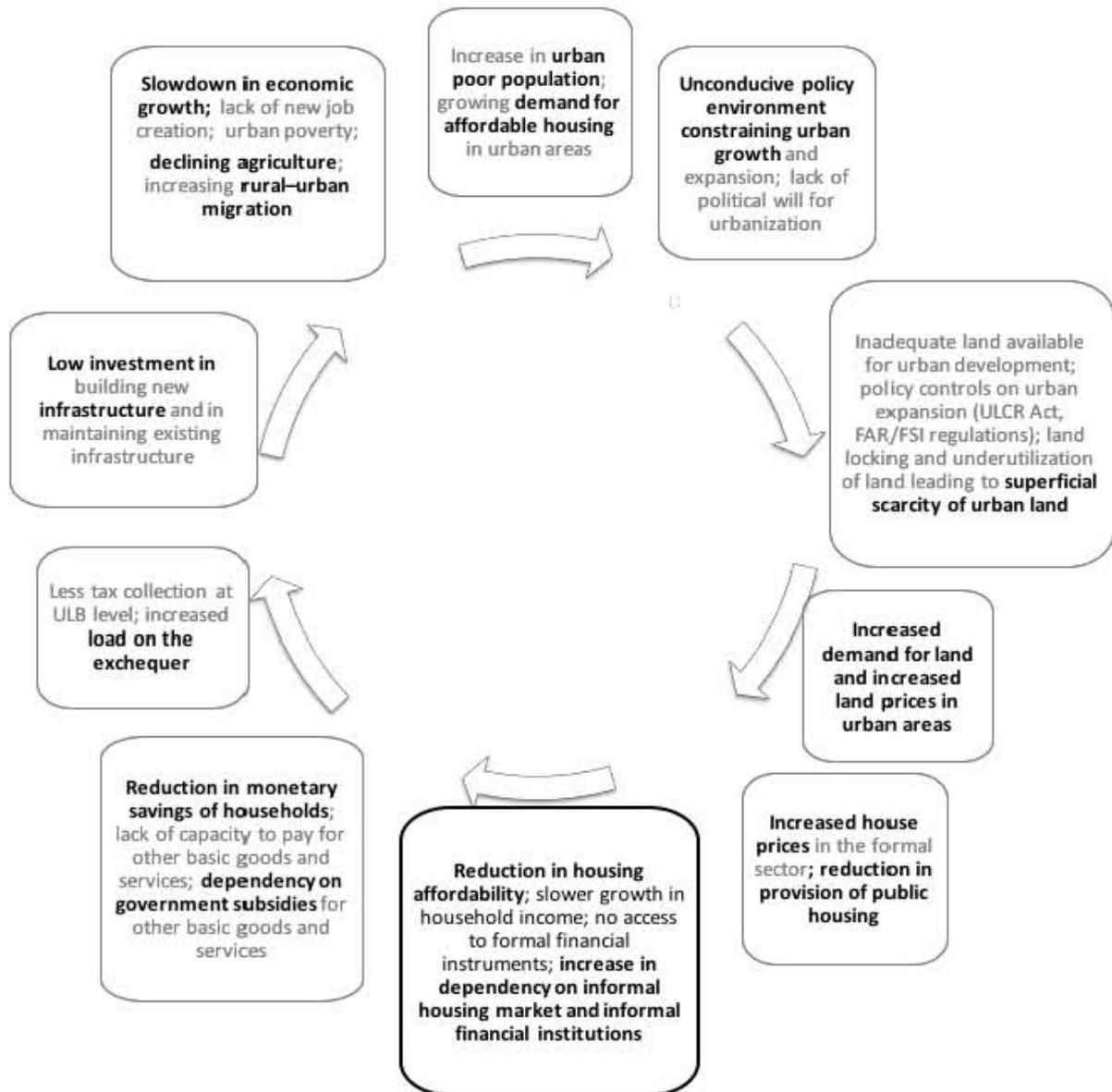


Table 4- Cycle of declining housing affordability

Source- (Tiwari and Rao, 2016)

## 8.2 Factors leading to unaffordability in Mumbai

### 8.2.1 Territorial restrictions

Mumbai as a land mass is a peninsula, as a result of which it does not have the freedom to expand to accommodate its increasing population. Further, the city has an elongated shape with the city centre at its southern tip. The city although boasts of one of the best transit systems in the country, it is inadequate to cater to growing population due to lack of multiple connections between the city centre in the south and residential suburbs in the north. As a result of which the land costs in south

Mumbai which is effectively the ideal place to live due to better infrastructure and proximity to work spaces is extremely high.

### **8.2.2 Archaic development policies**

Mumbai has an FSI of 1 in the suburbs and 1.33 in the city whereas only a small portion of the city and certain slum redevelopment zones are allowed an FSI of 4. Mumbai is the only city amongst other similarly populated and financially strategic world cities to have such a low FSI (Bertaud, 2011). The prevalence of low FSI hinders supply of new houses and thus directly leads to unaffordable prices owing to a skewed demand-supply ratio.

### **8.2.3 Artificial shortage of land**

Mumbai has vast stretches of under used port lands amounting to about 728 hectares in the prime city area along its eastern water front. The land is owned by Mumbai Port Trust (MbPT) which is a subsidiary of the central government of India. Under utilization of such prime property has resulted in shortage of land and has thus fuelled housing costs in the city. However, in a recent turn of events, the port lands which were being held from development for the past several decades have now been put forth for development by the MbPT. Out of the entire 728 hectares, a development plan will be prepared for 500 hectares. As per the Rani Jadhav Report for the development of Eastern Water Front of Mumbai, 30% land will be used for open spaces, 25% for transport infrastructure, 40% for mixed development, and 5% will be set aside for public amenities (Mumbai Port Trust Land Development Committee, 2014).

### **8.2.4 Migration**

Mumbai has always been extremely desirable for residents from all over the country owing to it being the economic hub of India. The city has been experiencing steady migration particularly in its suburbs comprising of unskilled labourers, students as well as white collared aspirants looking for a better life quality. The majority of unskilled labours end up living in slums due to poor purchasing power, while the students and young white collared professionals mostly tend to live on rent for the first few years before targeting a self-owned house. This continuous high demand for houses combined with an acute shortage of land has been one of the biggest reasons of an unaffordable housing market in Mumbai.

### **8.2.5 Long gestation periods**

Development projects in India are notorious for disregarding completion deadlines. One of the reasons for this has been the lengthy approval periods taken by the governmental agencies to grant development permissions. This lag ultimately affects the buyer since a delay in construction time leads to rising costs. As per the World Bank, India ranks 185 out of 190 countries in dealing with construction permits (Doing Business, The World Bank, 2017). This is also one prime reason why normal citizens are discouraged from self-development projects.

### **8.2.6 Rising ready reckoner rates**

Ready reckoner rates are the property rates that are estimated by the government and are usually revised every year. These rates are then typically considered to calculate the stamp duty and registration charges that the buyers have to pay on purchasing a property. The floor space index premiums as well as the development charges that are to be paid by the developer too are calculated referring to the ready reckoner rates. As per *The Economic Times* published in Mumbai, ready reckoner rates for Mumbai in 2016 were hiked by 7% as compared to last year, with similar trend observed in other parts of the country (Babbar, 2016). As a result of this hike the buyers end up paying a higher final cost, which is due to not only the higher taxes paid by him, but also the higher taxes paid by the developer, the cost of which is eventually passed on to the buyer.

## 9 Cooperative housing in India

Cooperative housing was initiated in India in response to the growing inability of the government's capacity to provide for the increasing housing demands. Further to it, cooperatives were looked at as opportunities for the neglected classes of India to have their participation in the decision making process for their communities (Khurana, 2002).

As per the 2011 census of India, the country has 330.8 million houses out of which 2.5 million dwellings were been built by housing cooperatives (Co-operative Housing International, 2016). Thus the percentage of house built by cooperative societies is only about 0.75% of the total number of houses in India.

Accessing land has been one of the biggest challenges of cooperatives societies all over India, this has aggravated further in the past two decades. In order to provide affordable land, the state has initiated few policies mainly targeted towards the economically weaker and backward classes of the society. On its forefront is the Post War Recovery scheme (PWR 219) initiated in 1948-49. Under this scheme, cooperative housing societies formed by members of backward-classes were given government land at extremely subsidized rates along with grants to cover construction costs (Kolhapur District Gazetteer, 2016). Although, in the case of Mumbai, rising costs, speculative land market, and reduced supply of government land has led to the scheme losing its relevance.

The management of cooperative housing in India is organised at four levels. These are primary-level cooperatives, district-level cooperative housing federations, state-level cooperative housing federations and the National Cooperative Housing Federation of India (NCHF) which is the highest body for cooperative housing formed in 1969. The primary-level cooperative is at the grass root level and is basically a housing cooperative formed by people joining together for common interests. The district-level federation is involved in assisting the growth of primary cooperatives, while the state-level federation presides over the primary as well as the district-level federations. The district-level federations are mainly involved in guiding cooperatives with legal, organisational and regulatory framework while the apex-level federations are mainly focused on providing housing finance and land (Khurana, 2002). Although Mumbai has a district-level cooperative housing federation, it lags behind in connecting to a wide audience. This can be particularly attributed to the fact that it lacks an adequate online presence which could have effectively published an accessible database of its activities, projects, professional partners and other related stakeholders.

On the legal front, the housing cooperatives in India are regulated mainly under the Cooperative Societies Acts of their respective states. This is along with the Land Acquisitions Act, Indian Registration Act, 1894 and the Transfer of Property Act, 1882, etc (Khurana, 2006). Presently, the housing cooperatives in India are governed by the same laws that are binding to other types of cooperatives. This

feature has been particularly determinant to the development of cooperative housing in India. This is because housing as an entity is distinctly different from other forms of cooperatives in the way it functions. The shortcomings are particularly apparent in matters of registration, maintenance, transfer of flats and recovery of loans, etc. (Khurana, 2002).

Accessing adequate finance has also been one of the prime concerns of cooperative housing societies all over the country. As per A.K Arvind, manager at NHB, Mumbai regional office, housing finance for cooperatives is mainly provided by the HUDCO, NHB and the LIC (Life Insurance Corporation), with only a small share from the private banks (Arvind Interview, 25.10.2016). This has to do with the fact that residents in cooperatives are not actually the owners but shareholders, a factor which prevents the private banks from holding on to the borrower's properties as collateral. Assistant general manager at HUDCO's Mumbai regional office, Vaijayanti Mahabale states that, another reason for this has been poor record of housing cooperatives with regards to timely payment of dues (Mahabale Interview, 24.10.2016), a factor which has developed over time due to poor loan recovery laws in the Cooperative Societies Act of Maharashtra (Khurana, 2002).

## **10 Housing development policies in India**

The last chapter focused briefly on the cooperative housing societies in India. This chapter adopts a broader perspective; it sheds light on housing institutions as well as policy developments. In order to implement cohousing successfully in Mumbai, it is important to have an understanding of the role played by the government and the various policies that have been drafted to enhance housing affordability.

### **10.1 Housing Institutions in Mumbai Metropolitan Region (MMR)**

#### **Municipal Corporation of Greater Mumbai (MCGM)**

The MCGM, also known as the Brihan Mumbai Corporation (BMC) is the urban local body that is responsible for the governance of Greater Mumbai, it is recognised as a third-tier local government as per the 74<sup>th</sup> constitutional amendment. The MCGM although covers only 10% of the total area of MMR, accounts for 63% of the population (Mahendra et al., 2006). The MCGM is the richest ULB in India and one of the richest in Asia with property taxes constituting the bulk of its revenues (Pethe et al., 2011).

#### **Mumbai Metropolitan Region Development Authority (MMRDA)**

The MMRDA was formed under the Mumbai Metropolitan Development Act, 1974, on 26th January, 1975. It came into force as a planning and development wing for the MMR (Pethe et al., 2011). The MMRDA is a Parastatal organisation of the state government of Maharashtra and was established with an objective of providing impetus to the growth and development of the MMR, especially towards financial and infrastructural development (MMRDA, 2016).

#### **The Maharashtra Housing & Area Development Authority (MHADA)**

MHADA was established on the 5<sup>th</sup> December 1977 under the Maharashtra housing and Area Development Act (MHADA, 2016). It is primarily involved in constructing and providing houses to lower and middle-income group citizens in the urban and semi-urban areas of Maharashtra.

Both the MMRDA and the MHADA comprise solely of executives appointed by the state, whereas the MCGM comprises of executives appointed by the state as well as members publically elected from different wards of the city.

### **10.2 Policies for affordable housing**

#### **Pradhan Mantri Awas Yojana (PMAY)**

Also known as Housing for all Mission by 2022, this mission will be implemented between 2015 and 2022 under the objective of providing affordable housing for all beneficiaries by 2022. The mission targets members of the EWS and LIG category with a condition that none of the beneficiaries' should own a 'pucca' (permanent)

house in any part of India. The mission is given the flexibility to be implemented under different methodologies by the ULB, state government and the beneficiaries (Ministry of Housing & Urban Poverty Alleviation-Government of India, 2016).

### **Affordable Housing through Credit Linked Subsidy**

This scheme is applicable to two brackets. For households whose income does not cross INR 3 lakh per annum and the house size does not exceed 30m<sup>2</sup>, as well as to the households whose income is between INR 3-6 lakh per annum and house size does not exceed 60 m<sup>2</sup>. Both set of beneficiaries will be eligible for an interest subsidy at the rate of 6.5 % for tenure of 15 years or during tenure of loan whichever is lower. HUDCO and NBO are the central nodal agencies to provide this subsidy, any loan beyond 6 lakh will not be eligible for subsidy (Ministry of Housing & Urban Poverty Alleviation-Government of India, 2016).

### **Affordable Housing in Partnership**

Under this scheme, the EWS would receive financial assistance from the centre at the rate of 1.5 lakh rupees per house. The state governments or ULBs would undertake affordable housing projects in partnership with the private sector. The state or ULB would be responsible to set the maximum cost per square metre of these houses and in order to make them more affordable can provide land at subsidised rates, reduce the cost of stamp duty, etc. (Ministry of Housing & Urban Poverty Alleviation-Government of India, 2016).

### **Subsidy for beneficiary-led individual house construction or enhancement**

This scheme caters to the EWS who would self construct or renovate their house, under this the beneficiaries are eligible for a central assistance of 1.5 lakh rupees (Ministry of Housing & Urban Poverty Alleviation-Government of India, 2016). However, this policy does not cater to individual beneficiaries, the individuals must be a part of the city's housing for all action plan and must have an access to the title of the land (Shirish Patel, 2016b).

### **MHADA- Affordable housing scheme**

As per the 2034 draft DPR of Mumbai, FSI for a new scheme of Low Cost Housing, implemented by MHADA on vacant lands for EWS, LIG and MIG categories (as stipulated by Govt. from time to time) shall be 4.0 on the gross plot area (excluding Fungible FSI). 70 % BUA of such schemes shall be for EWS, LIG and MIG (MCGM, 2015).

## **10.3 Conclusions**

An overview of the housing policies suggests that they are almost entirely focused on EWS and LIG sector. Although one can argue that this is logical since the majority housing shortage is in these sectors, there is not enough consideration given to the expanding middle-income group which is particularly on the rise in the

urban areas of the country. The policies drafted at national level take into considerations the overall national statistics in which case special conditions like Mumbai are not looked into separately. As per an article by a leading Indian Newspaper, *The Indian Express*, the area demarcation is not as per actual requirements. 30m<sup>2</sup> and 60m<sup>2</sup> is viable for Mumbai and Delhi but for other smaller cities it is not applicable since the houses there are much larger due to availability of large parcels of land and cheap costs due to low demand ('Housing for all by 2022' first year report: Room for improvement, 2016).

In the early post-independence phase, the government put a lot of emphasis on subsidies as a means to develop affordable housing. However, this did not prove very successful since there was no mechanisms to stop the resale of flats outside the target group and the beneficiaries ended up selling the houses to HIG to capture profits (Hingorani, 2011). Further, the involvement of target groups was negligible in the planning, site selection and design process. Most of the times the site was selected on the city fringes owing to lower costs. This way, the policies completely failed to consider the travelling requirements of the working class low and middle income groups. Further, the large amount of subsidies, demolition and complete reconstruction of houses also resulted in severe strain on the government treasury (Tiwari and Rao, 2016).

The 74<sup>th</sup> constitutional amendment which made recommendations to devolve the power from the central to the state and local bodies has only been partly successful. The functions of services and implementation have been passed on to the state and local bodies however; they haven't yet received financial independence from the central government (Tiwari and Rao, 2016). This dependency has resulted in formulation of policies mostly at the national level with decreasing levels of inputs/suggestions from states, urban local bodies and other local organisations. Not surprisingly, a lot of core housing issues remain unaddressed or managed in an ineffective way.

Specifically in the case of the MMR, Pethe et al in their report titled, *Assessing the Mumbai Metropolitan Region: A Governance Perspective*, argue that, currently in the MMR the negative side of a polycentric system of governance outweighs the positive. The MCGM is a ULB consisting of bureaucrats as well as elected members from different wards in the city whereas the MMRDA is purely a state body consisting of members appointed by the state. The biggest drawback of this is that in an instance of different political parties in the state and the city, the level of conflicts between the two organisations intensifies. Further, since the MMRDA is not a publically elected body, it does not have to face any repercussions if the people are dissatisfied with its works. Lastly, the level of public participation in both the organisations is weak which leads to poor decision making (Pethe et al., 2011).

## **11 Financial Institutions in India**

Housing finance has always been an extremely crucial cog in the development of the housing sector across the globe. The development of cohousing in Mumbai will be highly dependent on the role adopted by the financial institutions in India. In line with the last chapter which gave an overview of the various governance institutions and housing policies, this chapter focuses on the various financial institutions in India and the role adopted by them.

The National Council of Applied Economic Research (NCAER), India's oldest and largest independent, non-profit, economic policy research institute conducted a research on the effect of housing development on GDP growth. As per the report, for every lakh invested in the housing sector, 2.69 new jobs (2.65 informal and 0.4 formal) are created in the economy. Further, every rupee invested in housing sector has the potential to add 1.54 to the GDP and considering household expenses, this adds to 2.84. Investment in housing also affects the taxes collected, for every rupee invested in creation of housing, 0.12 gets collected as indirect taxes (National Council of Applied Economic Research, 2014).

### **11.1 Type of financial institutions**

#### **Commercial banks**

These are the primary housing finance providers and currently occupy about 67% of the housing finance market share in India. Most of the commercial banks started out by financing commerce and industries as opposed to housing, however, sustained efforts by the NHB, RBI and the government assisted these banks to have large housing loan portfolios as evident today (National Housing Bank, 2014). To add to this, commercial banks traditionally have had a relatively good record in terms of responsible lending, providing prompt service and risk monitoring (Arvind Interview, 25.10.2016).

#### **Housing Finance Companies (HFC)**

These are institutions which mainly focus on providing finance to the housing sector. The NHB is the institution which promotes development of HFC's in the country. The HFC's are currently lagging behind in terms of market share when compared to commercial banks owing to commercial banks providing a deeper reach of banking sector to urban as well as rural markets, competitive rates and better service provision. There are 58 HFC's as of March 31, 2014 registered under the section 29A of National Housing Bank act of 1987 (National Housing Bank, 2014).

#### **Cooperative Banks**

These banks in India are mostly focused towards agricultural finance which constitutes about 90% of their lending. Cooperative banks were established with the intention of community development. However, in the present day a lot of these

banks suffer from weak credit recovery, lack of risk management systems and lack of standardised banking models (National Housing Bank, 2014).

## **11.2 National housing bank (NHB)**

The NHB was initiated in an era where housing finance was in its nascent stage and the economy was on the brink of a radical transformation (National Housing Bank, 2014). A.K. Arvind, states that the NHB acts as the apex financial institution in India and oversees the apex cooperative housing federations at the state level. The NHB primarily aims at promoting a stable and progressive housing market in the country. Further, it also focuses on measures that would lead to stronger bonds and improved confidence among various stakeholders in the housing sector. Capacity building is also one of the major activities of the NHB (Arvind Interview, 25.10.2016).

### **NHB-KfW- Promotional Programme for Energy Efficient New Residential Housing in India**

The programme was undertaken by the KfW development bank of Germany and was the first of its kind in India. The programme began in 2010 and has already run its course owing to complete utilization of the received funds. A credit worth 50 million USD was provided by the KfW to the NHB in order that it would extend refinance assistance to its primary lending institutions. The calculation of the potential energy savings by individual units who received the loans was made possible by an assessment tool developed by the Fraunhofer IBP, Germany and The Energy and Resources Institute (TERI) (National Housing Bank, 2014).

## **11.3 Housing and Urban Development Corporation (HUDCO)**

HUDCO was introduced in the year 1977 to promote housing and infrastructure development under the companies' act 1956 (Ministry of Housing and Urban Poverty Alleviation, Government Of India - HUDCO, 2016). As per Ms. Vaijayanti Mahabale, HUDCO finance is limited to not only housing and infrastructure, but also towards industries that are involved in housing material production and auxiliary support for urban infrastructure development (Mahabale Interview, 24.10.2016).

Apart from finance, HUDCO is also oversees technical aspects and provides recommendations to such housing projects (Housing and Urban Development Corporation - Home, 2016). HUDCO has also played a pivotal role in the development of cooperatives in India and provides loans to registered primary house building co-operative societies for land development and construction activities (Housing and Urban Development Corporation - Home, 2016). Mahabale further states that over the past decades cooperative housing is in a state of steady decline owing to lack of leadership, declining sense of ownership, mismanagement of funds and partly due to lack of initiatives by the government (Mahabale Interview, 24.10.2016).

## **Marketability of housing cooperatives**

Poor marketability has also been responsible for the decline of cooperative housing societies. Many of the cooperatives started with a group of people belonging to a particular caste or profession joining together to realise their projects. This did have its advantage of enabling a stronger bond between the members of the society; however, on the other hand selling off properties in such societies always posed as a challenge to the seller or potential buyers (Mahabale Interview, 24.10.2016). Many of these cooperatives would insist that flats be sold to only members of the same profession or caste which is in majority in the society. Restrictions were also often placed on permitting students or bachelors to rent these premises. This mindset was heavily responsible for poor marketability of cooperative housing projects and has been one of the factors that negatively affected the growth of cooperatives in the country.

## **12 Strategy for affordable housing**

Typically, land cost forms the largest component of the total cost a property in Mumbai. As per Ramesh Dalvi, an architect based in Central Mumbai, the construction costs are more or less fixed in the city in the range of INR 20,000 per square metre, it is the land that dictates the final costs, it usually exceeds 60% of the total cost of a house (Dalvi Interview, 27.10.2016).

### **12.1 Mumbai's Eastern Waterfront**

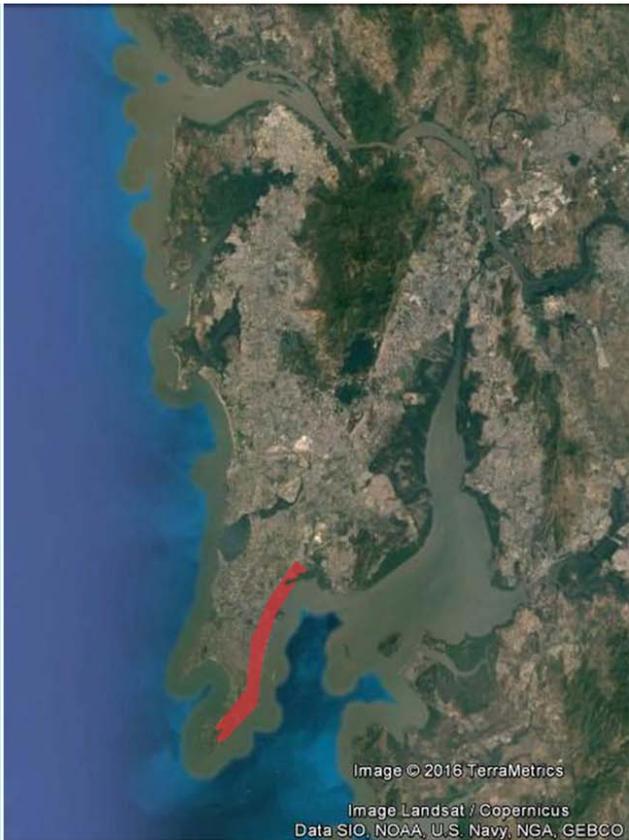
#### **Proposed Site for affordable housing development**

Mumbai started as a port city before developing into a textile hub in the 19<sup>th</sup> century. However, the shifting of heavy industries outside Mumbai and the new environmental protection acts which restricted expansion of old ports led to the development of a new port known as the Jawaharlal Nehru Port Trust (JNPT) across the Mumbai Creek (Saldanha, 2015).

Currently, the old port of Mumbai known as Mumbai Port Trust (MbPT) is walled from the city and is not publically accessible due to activities related to port and defence. It spans across an area of 750 hectares which is about 1/8<sup>th</sup> the size of the island city (Saldanha, 2015). The land is under the control of the port trust of India which is owned by the government and not by the MCGM. After numerous efforts from several non state organisations as well as the MCGM, the underused port lands will be opened for a multitude of redevelopment activities which would include residential and commercial projects along with green spaces, sea front leisure activities and an installation similar to the London eye (Hindustan Times, 2016). Out of the 750 hectares of land, approximately 350 will be used for development activities, the rest will be left undisturbed due to the presence of the naval docks and the operational port which are sensitive in nature and also have economic significance (Raju, 2009).

The port land in Mumbai can draw inspiration from the Hamburg port redevelopment also known as HafenCity. The HafenCity project, similar to the MbPT, is an old port redevelopment project targeting mixed development to benefit the citizens of Hamburg. Below are some of the factors that make the port lands of Mumbai an extremely interesting choice for cohousing development.

- Cohousing projects offer a far higher degree of social cohesion. This could prove extremely crucial from the community building point of view on a newly developed land mass.



The port lands are centrally located around the central business district (CBD). In most cases subsidized lands are located far away from the CBD due to which they never receive substantial interest.

Lastly, an innovative model such as cohousing will add on to the marketability and overall appeal of the redeveloped land which aims to create a statement of world class innovative development.

Map 3- Proposed area for redevelopment

Source- Own work, based on (APLI Mumbai- A Port Lands Initiative by Citizens to Re-Imagine Mumbai, 2014), (Google Earth, 2015)

Thus, in the context of this thesis, the author proposes that certain parcels of land on the eastern water front be reserved for non-speculative cohousing projects. The land here can be distributed on the basis of government calculated ready reckoner rates considering the quality of project that the residents come up with instead of the highest bidder. The ready reckoner rates in Mumbai are almost always lower by about 50-90% than the market rates (Dalvi Interview, 27.10.2016). This would be similar to the method adopted by the authorities in Berlin (R50) or in Hamburg (Hafenliebe). The cost at which the land would be sold to the prospective cohousing groups would be decided on the quality of the project and what it offers to its residents and the city.

Apart from this strategy, the state could also consider long term leasing out of land or setting up a community land trust to reduce the land costs.

The concept of long term land leases is adopted by the city of Amsterdam for the Vrijburcht project. The project benefits from this initiative in a way that the group does not have to worry about the high land costs; they are only required to pay a nominal rent to the city with an assurance that their land lease will be extended every 50 years. By taking the land costs out of the final costs, the result is an affordable housing project right near the city centre.

Community land trusts (CLTs) have been growing in popularity over the past few decades. A community land trust acquires the land from the government under state subsidies, donations, private capital etc. and leases it to the residents who live on it. This way the house structure is owned by the residents but the land is owned by the CLT. Similar to the Amsterdam concept, since the land component is taken out, the final cost of house is much lower. In case of resale of property, it has to be sold off to the CLT and not directly to the market. The CLT offers appropriate compensation as per the terms agreed in the contract. The CLT also plays an active role in maintaining the overall well-being of the neighbourhood.

## **12.2 Cost Comparison- Cohousing vs. Developer led model**

This sub-chapter does a cost comparison analysis between a cohousing project and a developer led project for the same site measuring 50m x 30m. The FSI values in both the cases are considered 1.33 as it is in the island city in Mumbai. For cohousing, the land is assumed at ready reckoner rates while for developer led projects, the land is at market rates. Land at market rate is considered 70% more expensive than the ready reckoner rates. The cohousing flats are also assumed to be more spacious than the developer led flats. The built up area per flat in cohousing is 65 m<sup>2</sup> whereas in developer led flats it is 50 m<sup>2</sup>. Further to this, the cohousing model considers an entire floor to be used as common space and the ground floor to be used as retail space. Lastly, the cost of construction per m<sup>2</sup> for cohousing is on the higher side at INR 25000 where as for the developer led project it is at a basic INR 20000.

	<b>Cohousing</b>	<b>Private Developer</b>
Built up area per flat (1 Bedroom, Hall, Kitchen)	65 m <sup>2</sup>	50 m <sup>2</sup>
No. Of flats per floor	3	4
No. Of residential floor	8	10
No. Of floors for common space	1	0
No. Of floors for retail space	1	0
Total built up area of residential component A	≈1600 m <sup>2</sup>	2000 m <sup>2</sup>
Total built up area of common space component B	200 m <sup>2</sup>	0
Total built up area of retail component C	200 m <sup>2</sup>	0
Total built up area of the building D (A+B+C)	2000 m <sup>2</sup>	2000 m <sup>2</sup>
Cost per m <sup>2</sup> for construction and consultants E	INR 25,000/ m <sup>2</sup>	INR 20,000/ m <sup>2</sup>
Cost of construction F (D x E)	INR 5,00,00,000	INR 4,00,00,000
Cost of land per m <sup>2</sup> Ready Reckoner (RR)	Same as RR 1,00,000/ m <sup>2</sup>	RR+70%RR INR 1,70,000/ m <sup>2</sup>
Total cost of land for 1500 m <sup>2</sup> area G	15,00,00,000	INR 25,50,00,000
Total cost of construction H (F+G)	INR 20,00,00,000	INR 29,50,00,000
Private developers profit margin I	0%	30% of H INR 8,85,00,000
Sale cost of entire building J (H+I)	20,00,00,000	INR 38,35,00,000
Cost per flat without taxes K	J/27 ≈INR 74,00,000	J/40 ≈ INR 95,87,500
Taxes, 6% of K for stamp duty + registration L	≈INR 4,50,000	≈ INR 6,00,000
Cost per flat with taxes (K+L)	≈INR 78,50,000	≈ INR 1,01,90,000

Table 5- Cost comparison analysis

Source- Self elaboration

Thus, on the basis of the above calculation, it can be derived that the cohousing model works out to be approximately 25% cheaper than a private developer led model. This is considering the fact that cohousing flats are larger in area, fewer in number and have an entire floor of common space for communal activities. Depending upon the value of land or cost of construction, the cohousing model can be worked out to be 10-40% cheaper than a private developer led model.

### **12.3 Controlling speculation**

In order that the subsidies are utilized efficiently, it is important to lay down certain guidelines to restrict property speculation. Below are few such examples that can be considered.

- A cohousing group tendering for subsidized land should only consist of families who do not own any other house in the city.
- The house once constructed shall be for self use and should not be allowed to be left vacant or rented out, at least for the initial few years.
- The house should not be allowed to be sold on the market for a fixed period after occupation. The number of years could be decided on the basis of the cost of the house, federal subsidies, demands etc. by the city planning department. For example, in Mumbai, the Slum Rehabilitation Authority (SRA) and the MHADA that provides houses on subsidized rates restrict occupants from selling the property for 10 years and 5 years respectively. In Hamburg, the cohousing projects are restricted from resale or renting for a period of 30 years above the time of development (Custom & Self Build Toolkit, 2016a).
- Only in case of extreme situations, the property should be allowed to be sold off to the Port land development authority with suitable measures to avoid speculative profit gains.

## **13 Transferability**

This chapter focuses on the idea of transferability which is one of the core issues of this research. Although the research identifies supportive elements from the European context, it is essential to analyse whether or not, and to what extent could these elements be transferred to context of Mumbai. Below is a list of the few such critical elements identified from the European context.

### **13.1 Land and Political Will**

Accessing affordable land is one of the biggest challenges that cohousing groups in Europe have consistently come across; similar concerns will be faced by Mumbai. However, in the case of Europe, especially Germany and the Netherlands, the city has come up with innovative methods of land provision. This has also to do with the fact that European cities do not face an acute land shortage similar to Mumbai. Mumbai currently has negligible levels of open land, with most of the new construction being redevelopment projects. The little developable land that is available has multiple takers, often willing to shell out large sums of money owing to its speculative potential. Shortage of land can prove as a big hindrance to the new cohousing groups in Mumbai, especially when pitted against the interest of private developers.

However, apart from the sparsely available normal developable land, Mumbai has large chunks of vacant land with a huge proportion of it being 'artificially' locked. In this case, it is the political will that comes into the picture and can make a real difference. In case of all the European case-studies, political will played a major part in helping the cohousing groups to access land. This was especially evident in the case of the Coin Street project where the GLC worked with the CSAG to work on mechanisms which would help counter the factors leading to speculation. Unless the government is put under severe pressure by the civil society, the administrative structure and the high levels of corruption prevalent in the city would severely affect the process of accessing land for cohousing projects in Mumbai.

Looking beyond the challenges, the PWR 219 scheme of cooperative housing societies could act as a source reference for developing policies to allow affordable land in the case of new cohousing projects. The proposed redevelopment of vacant port lands in Mumbai could prove as an ideal opportunity to test similar land reservation schemes, although it is important to note that the PWR 219 in case of cooperatives was only targeted towards backward classes of the society.

### **13.2 Architecture**

Mumbai mainly has on offer the cookie-cutter type of housing built by private developers. However, this has not always been the case. Mumbai has had a rich history of architecture wherein architecture for people was far more valued than building for profits. There have been numerous examples in Mumbai which combined living and working together while at the same extending itself to the

neighbourhood and the city at large. The case of Vrijburcht where the housing units are developed around a central courtyard is reminiscent of the old courtyard houses of Mumbai. These courtyards were once the soul of the residential units where people interacted and celebrated together, exactly similar to what is now experienced in Vrijburcht. The continuous perimeter balconies of R50 project are similar to the BDD chawls of Mumbai which were built for the mill workers by the mill owners in the last century. These balconies were essentially corridors and an extension of their private spaces. However, at the same time they also were excellent spaces for informal gathering and interaction. Mumbai can learn from its rich history as well as from these European models which display that it is possible to develop spatially rich, interactive as well as affordable housing at the same time.



Chawls in Mumbai

R50 cohousing in Berlin

Image 16- Architectural similarities between Mumbai and Berlin

Source- (Archdaily, 2015), (Magogate, 2005)

### 13.3 Financial Institutions

Financial institutions have undoubtedly made a huge difference to the development of cohousing in Europe. However, most of the success boils down to two aspects- Ethical banking and willingness of the banks to take risks with cohousing projects.

Banks in India, unlike their counterparts in Europe lag behind by a long way in terms of ethical banking. This is majorly attributed to the fact that banks in India risk losing business to peers and there is a lack of RBI mandate to adopt sustainability (Rajput et al., 2013). The HUDCO and the NHB have been involved in supporting the cooperative housing model in India, although, a series of defaulted payments from cooperative societies have led to the increasing hesitance of these institutions in supporting the model (Mahabale Interview, 24.10.2016).

On the positive side, the networks and experience that HUDCO and NHB have developed over the years can prove vital to cohousing development. Since cohousing would mean self-ownership of apartments, the complications in financing the model will be drastically reduced when compared to a cooperative model. The experience that both the organisations have with regards to cooperative housing's construction schedules, design development process and professional experts could prove helpful to cohousing. Lastly, till the private banks in India do not develop adequate mechanisms to finance the cohousing model, the HUDCO and NHB can play a critical role in supporting the entire system.

### **13.4 Community, Networking Platforms and Experts**

Group dynamics and participation has typically been at the core of every successful cohousing project in Europe. In India, many cooperative housing societies began showing signs of reduced social activities after few decades. This was mainly because the members who were a part of the initiating phase gave way to newer generations. Decline in regular meetings and social activities directly led to lack of maintenance and regular defaults in repayment of dues.

The existing four-tier system of cooperative administration system, although well developed, falls short when it comes to reaching out to a wide audience and educating them about the various possibilities cohousing has to offer. Most residents are aware of the model in which cooperative societies are formed after the apartments are bought from private developers, but not many are aware of a model where people can build themselves without any developer.

In spite of the shortcomings, the new cohousing model can benefit from the existing management structure of cooperatives. This is mainly because the district and apex cooperative federations are extensively spread out across the country and have vital experience of self-built projects. Apart from the existing structure, adopting factors such as online networking platforms, exhibition fairs and workshops similar to Europe can further help in improving the state of networking platforms. Developing networking platforms and relevant cohousing experts should be one of the first steps that should be undertaken. Both these steps can ensure a sustainable cohousing development process, these steps would also be on the relatively easier side of all the structuring that needs to be undertaken to provide a healthy flourishing base for cohousing in Mumbai.

### **13.5 Legal**

The counterpart to the German e.G. and WEG in the context of Mumbai are the Maharashtra Cooperative Societies Act, 1960 and Maharashtra Apartment Ownership Act, 1970. As stated earlier, in India, the cooperative societies are mostly formed after the apartments are handed over to the buyers by the private developers. The primary intent of these societies is periodic maintenance of the building and its surrounding facilities. Although the residents are owners of their flats, the actual title of the building as well the land is with the cooperative housing society (Greg Jacobs, 2013).

On the other hand, buildings with self ownership are commonly referred to as condominiums which provide every single resident a complete ownership of his apartment. The common spaces in this case are jointly owned and managed (Greg Jacobs, 2013). Similar to their German counterparts, the structure of cooperatives in India is much stricter than the condominiums. This is mainly apparent with regards to transferring/subletting the property, in which case the permission from the cooperative is essential for any such activity to take place.

## **14 Recommendations**

### **14.1 Land**

#### **Land at ready reckoner rates**

A favourable land distribution policy is the biggest factor that can help develop the cohousing model in Mumbai. As was apparent in the cost analysis, providing land at the government recognized ready reckoner rates could prove as the game changer for the initiating cohousing in Mumbai. However, this would certainly be faced with opposition from the builder-politician nexus as well as from the complicated decision making mechanisms of the MCGM and the MMRDA. To avoid misuse of such schemes that have been developed for affordable housing, appropriate transparency in land dealings should be given high priority.

#### **Land issued on basis of quality not the highest bid**

The port lands which are proposed to be opened up should consider reserving certain parcels of land for non-speculative self-built projects. The land should be allocated to the user groups on basis of their quality regarding what they would offer to the residents as well as to the neighbourhood. A 70-30 model similar to the one adopted by the Hamburg city could be replicated in Mumbai. This way the city can ensure a decent balance of cost as well as quality instead of directly selling the land to the highest bidder.

#### **18-24 months window with fixed price**

Apart from allocating land on the basis of quality, providing a window in which the price of the land will be frozen has been the key to access affordable land. Similar to Germany and the Netherlands, an 18-24 months window should be provided to cohousing groups. This way, members can further strengthen their group and procure additional finances without the risk of losing the desired land.

### **14.2 Financial Institutions**

The lessons from the European case studies present banks as a vital component of the current cohousing scenario. As a part of their sustainable ideologies, a reasonable number of banks in Europe are willing to provide financial assistance for the development of cohousing. This is in spite of the complications of estimating the entire value of a project or lending to a group of individuals without any prior technical experience.

In order to mobilize private banks towards sustainable practices, the RBI must lay clear mandates for the banks to adopt sustainability. This can be further accentuated by efforts from the civil society as well the cohousing network platforms. The RBI can also play a proactive role in assisting the banks with conducting workshops and

training programmes to develop relevant skills pertaining to sustainable banking (Rajput et al., 2013).

Further to this, the cohousing model in Mumbai could also take reference from the NHB-KfW scheme which provided low-interest finance. Although the scheme ran its course only for a short time, efforts towards re-introducing it could play an extremely crucial role in building new houses as well as improving the energy efficiency of houses in India. Linking incentives to energy performance has been successfully implemented in Germany; a similar strategy can be worked out successfully in India too.

### **14.3 Platforms for interconnectivity**

The counselling and networking platforms such as the Netzwerkagentur Generation Living, id22, CoHousing Berlin, and Agency for Building Communities, etc. played a vital role in the recent development of cohousing in Germany. These platforms are both state run as well as private initiatives. Apart from creating awareness about the cohousing model, they act as vital interconnecting platforms which link the residents to the type of project they desire as well as to other group members, professionals, bank etc. Going a step further, the national housing association of Netherlands, the *De Key*, played a critical role in financing the initial stages of the Vrijburcht cohousing program as well as acted as the guarantor for all the unsold apartments.

Developing these platforms should be one of the first steps that should be undertaken by the government, the Netzwerkagentur Generation Living could act as a suitable frame of reference for the case of Mumbai. A meticulously created cohousing awareness program through various workshops, real-estate forums, advertisement campaigns, etc can provide a strong base for the development of the cohousing model. Factors related to the cooperative model, especially their poor marketability and decreasing communal activities should be looked into in order to avoid the same outcomes in the new model. Simultaneous to this, an internet directory of reference projects, interested people and relevant experts who wish to be associated with this model should also be developed.

### **14.4 Developing professionals**

The case study projects revealed that the role of architects and project managers with regards to the cohousing model is substantially different than their role for any other type of development. Architects and project managers not only assume responsibility of design and construction management but also work with the group to ensure that decisions are taken with consensus without unnecessary delays. Thus, apart from the technical construction and design knowledge, these professionals are expected to also master the art of managing people.

The architects in India are not used to extensive interaction with the users unless it is a privately owned family house. Young professionals in their academic curriculum must be made aware of such innovative housing models. Architecture schools

typically in India focus extensively on the design and the technical aspects of a building but not a lot of emphasis is given on people management, although, it has always been a very critical aspect of the design and construction sector. Further to this, the networking agencies could play a major role in creating awareness by organising training programs, site visits and discussion forums for interested professionals.

### **14.5 Taxes**

In specific cases of self-built non-speculative projects, the government should consider reducing such taxes which can act a strong incentive for people to consider the cohousing model. This will end up being beneficial for the government, since it will lead to an increasing number of houses which will be built for the people who actually need them and not just for speculation. The direct taxes that any property buyer has to account in the final cost of his house are the Stamp duty (5%), Registration (1%) both on the basis of sale cost mentioned in the contract as well as Service tax (1%) on the service component and VAT (1%). The VAT is to be paid by the private developer however it is typically accounted by the developer in the final sale price. In the initial phases, the government can consider providing tax-subsidies only for the self-built non-speculative projects while slowly incorporating other types of affordable developments later into the scheme. This way it can ensure that the taxation mechanism does not go through a sudden shock while are the same time measures are taken towards improving affordability.

### **14.6 Advanced construction techniques**

The construction technology in India is still lagging behind in terms of time and economic efficiency. The government should give impetus for development of advanced construction, specifically for modular and precast construction techniques. The Technology Sub-Mission that has been set up by the MHUPA is the right step taken by the centre in this direction. The Sub-Mission is expected to work on innovative techniques for low cost speedy construction, innovative sustainable materials and technology for safer earthquake resistant construction (MHUPA, 2016). Apart from developing new techniques, the government should also work on mechanisms to make such technology available for normal projects, reason being the newly developed technology is typically more expensive than the normal way of construction. The most effective way to carry this out would be through subsidies on taxes and imports for advanced construction materials, fittings and precast units, etc. at least in case of non-speculative self-built projects for the initial periods (KPMG and NAREDCO, 2014).

### **14.7 Competitions**

The government could introduce competitions similar to the competitions floated by the Senate Department for Urban Development and Housing in Berlin. Financial assistance and nationwide recognition could prove as a huge boost to not only housing groups but also interested professionals in being a part of such initiatives.

Through the competitions, the government can also ensure that the projects being submitted follow ideas of cross generational living and mixed-use development.

### **14.8 Mixed-use development**

Mixed-use development typically combines living together with facilities for working and recreation. In India, this type of development is relatively limited. However, across the world, especially in China and Japan, mixed-used development has been fairly common. Although mixed-use development demands a higher level of infrastructure development, there have been few examples in India where mixed-use development has fuelled a holistic growth of a previously under-developed neighbourhood (Munshi, 2011).

From a financial point of view, commercial properties in India typically yield a rental return of 8-10% of the capital value as against 3-7% offered by residential properties (Sharma and Babar, 2016), this gets even more probable in case of large metropolitan cities. If the site is located at a favourable location conducive to commercial/retail development, the combination of commercial and residential spaces can prove as a good strategy for generating adequate capital for residential development through cross-subsidization. Apart from the economic benefits, mixed-use development allows for a live-play-work atmosphere which leads to a sustainable environment, reduces vehicular pollution and allows residents more time to spend with their families.

Considering the above, cohousing in India must be encouraged and incentivised to adopt the mixed-use development model, particularly in case of sites that show a strong commercial potential. Case studies around the world reveal that financially self-reliant cohousing projects positively contribute to the development of its surroundings. This mainly is due to the fact that residents from cohousing projects harbour a relatively strong sense of identity and responsibility to their building as well as their immediate surroundings.

## 15 Appendix

### List of interviewees

#### Interviews conducted in Berlin

No.	Name	Position	Organisation	Date
1	Maximillian Vollmer	Project Manager	Netzwerkagentur Berlin	24.08.2016
2	Horst Pfander	Financial Consultant	Netzwerkagentur Berlin	25.08.2016
3	Thomas Knorr-Siedow	Urban sociologist and planner	Urban plus Droste & Partner	02.09.2016
4	Winfried Härtel	Project Manager	Winfried Härtel Office for Project Development	05.09.2016
5	Wilfried Brzynczek	Financial Consultant	DKB Bank	12.09.2016
6	Christoph Schmidt	Architect	ifau	13.09.2016
7	Manuel Ehlers	Relationship Manager	Triodos Bank	15.09.2016
8	Dorothee Röger	Loan Servicing Officer	GLS Bank	21.09.2016
9	Thomas Bestgen	Project Manager	UTB	29.09.2016
10	Dr. Michael LaFond	Architect, Urbanist and Community Developer	id22: Institute for Creative Sustainability	Multiple interviews

#### Interviews conducted in Mumbai

No.	Name	Position	Organisation	Date
1	Omkar Gupta	Director, Public Forum and Projects	UDRI	12.10.2016
2	Pandirkar	Engineer	MHADA	18.10.2016
3	Vaijayanti Mahabale	Manager	HUDCO	24.10.2016
4	A.K.Arvind	Manager	NHB	25.10.2016
5	Ramesh Dalvi	Architect and Partner	Ramesh Dalvi and Associates	27.10.2016
6	Pinkish Shah	Architect and Partner	S+PS Architects	07.11.2016

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