GRADUATION PLAN
Master of Architecture, Urbanism & Building Sciences

A - Personal information
Liza de Jong
B - Studio
a) Name / theme of the studio:

Global Housing Graduation Studio:
Mixing Mumbai. Affordable Housing for Inclusive Development

b) Tutors:
Prof. Ir. Dick van Gameren (D.E.vanGameren@tudelft.nl)
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c) Argumentation of choice of the studio:

Doing research and designing in a cultural context that differs from my own, has always interested me. On the one hand you need to have a very objective view on things, but on the other hand it is so hard to grasp upon this ‘other reality’. One of the examples where I encountered this was during a Msc 2 project - public buildings about the hutong area in Beijing. In these areas the traditional inner-city courthouses transformed into slum-like areas. In this project the task was to use public building as a tool for an intervention in these areas. It was difficult however not to think about possible solutions for the dwellings as well.

With the focus on housing in the mixing Mumbai project, this will bring a whole new focus, with a completely different cultural context and a lot of new challenges, I’m really looking forward to dive into that.
C - Graduation Project

Leaving space

C.1 Goal

a) Problem Statement;

The economy and the population of Mumbai are growing; which results in an on-going process of urbanization. The current population of Mumbai is 21 million. An expected grow of 30 per cent in the coming 15 years will increase this to almost 28 million.1 This will put an extreme pressure on the housing stock.

The process of growth is already long going. The growth of the city of Mumbai started to accelerate in the 1870s with the opening of the Suez Canal. Two major train lines where constructed with the intention to make Mumbai the ‘gateway to India’.2 The city of Mumbai is situated on a geographically restricting narrow peninsula. This makes the land in the centre extremely valuable; resulting in high densities and extremely high rental prices. The train stations along the train lines have ever since their construction in 1869 provided new opportunities for the city to grow. Due to the affordability of the public transport and the need of affordable housing the city keeps expanding along the train track going up north; now even as far as the Vasai Virar area. With rent prices that are 1/10 of the prices of Mumbai South and population densities seven times less, at least for now, Vasai-Virar offers possibilities.3 4

In Mumbai the chawl typology was introduced to house the masses. The chawl is a very common building type in Mumbai; Chawls house nearly 20 percent of Mumbai’s population.5 It gained popularity in the 19th and 20th centuries, as the textile industry was booming and there was a high demand for affordable working class housing. The chawl has a strong resemblance to barrack style units. Single room tenements with kitchenette are situated along a corridor. In some cases toilet facilities are shared. The baithi chawl is one of the oldest forms of chawls. The baithi chawl is a ground storey building accessible through small alleys and leaving small ‘shaft like’ back alleys on the back sides. As demands increased this type of housing was transformed; the same layout was kept, but the height has increased to four or five stories.6 Now, in the city centre, the most common chawl typology is this 4 to 5 story type. Due to the value of the ground here the chawls are already up for a second round of development, with a strong focus on the high end housing market.

The developments in the south of Mumbai illustrate what might be the future of housing in the Vasai-Virar area.

In the Vasai-Virar area, and specifically in Nala Sopara, we can still find many ‘baithi chawls’. Due to the increasing demand for housing in this area the developers have shift their focus to building the four to five story chawls. Here we can distinguish two forms of chawl development; the re-development and the new constructions. In the case of the redevelopment the original baithi chawl is demolished and replaced by a four or five story chawl using the exact same footprint; increasing the density four times. New built chawls are developed on vacant lots using about the same urban layout as the redeveloped baithi chawls; creating a density of about 1300 units per hectare.7 Both developments contribute significantly to the provision of housing for the economical weaker sector (EWS) and the lower income group (LIG).

However, these developments create an urban fabric of chawls that is extremely crammed. Whereas the chawls in south Mumbai can be called compact, they still leave space for communal activities in the alleys and courtyard.8 In The chawl area’s in Nala Sopara the open space has been reduced to an absolute minimum. The buildings get placed closer and closer together to create the highest possible density, but leaving hardly any ‘open-to sky space’. As advocated by Correa this open-to-sky spaces are a crucial aspect of housing in warm climates: "they become inhabitable, in fact a crucial part of everyday life. Successful housing is a seamless continuum of spaces that goes all the way from the most private, to the semi-private, to the public. This is why it creates communities”9

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This form of densifying not only compromises the communal life but also compromises primary needs such as daylight access. In these areas buildings that are less than 10 centimetres apart are more rule than an exception; creating numerous dwellings without natural daylight access. As the original layout of front alleys and back alleys of the baithi chawls is kept in the chawl scheme; creating a lot of neglected spaces. Spaces where no one ever comes and are therefore turned into garbage disposals. The aim of the urban layout of the chawls in purely focused on efficiency. Developers want to increase the density, and thereby their profit, as much as possible. Another side effect of this densifying scheme is the enormous amount of similar dwelling units that is created. These single room tenements are not flexible in any way to the demands of people.

If the development of extremely high-density chawl area continues, a significant part of Nala Sopara will be transformed into housing that provides merely for shelter; Insufficient in terms of providing for open-to-sky spaces and access of daylight. Especially in the east of Nala Sopara we can find enormous areas with baithi chawls; all of them potential targets for the developers to be turned into chawls of 4 to 5 stories. If all of these will be transformed a large part of the area will turn into a monotonous stacking of units; leading to even more segregation in Nala Sopara.

By providing a feasible alternative a change in development can be facilitated. Instead of creating exclusive living conditions for the EWS and LIG chawl areas can be transformed over time into more inclusive communities.

b) Research Question

To be able to provide a good alternative I first want to research the aspect of the inclusive community. Therefore my research question is:

How can architecture provide for inclusive communities?
  - What is an inclusive community?
  - How do the different housing typologies in Mumbai provide for inclusive communities?
  - How is provided for inclusive communities in specific case studies that put an emphasis on this theme.

This research will help me to answer my design question:

How can the crammed (baithi)chawls, of the Rahmat Nagar area be re-interpreted into a mixed-use area that leaves space for inclusive communities, able to set a feasible alternative for the current chawl redevelopment?

c) Design Assignment

The Rahmat Nagar area is situated in Nala Sopara east. In the south of this area we can find an extremely chaotic urban fabric of chawls. Part of these chawls are redevelopment projects of former baithi chawls, other parts are new built chawls. In the north of the area we can find a big area of remaining baithi chawls; next in line for redevelopment in to chawls. As a design assignment I want to develop a phased strategy to rehousing the current dwellers of the Rahmat Nagar area in an inclusive community: designing a cluster that can replace a cluster of existing chawls. The aim of the replacement cluster is to leave space that can absorb communal life of different scales; from the public to the semi-public to the private. Over time, all the baithi chawls and chawls of the area can be replaced by this cluster, together creating a new urban fabric that leaves space for communities.

The Rahmat Nagar area has three crossing streets. Commercial activity is concentrated around these streets. As some of the clusters will abut these commercial streets the cluster needs to be able to incorporate commercial activities when needed.
**C.2  Process**

a) Method description;

The main focus of the research in the global housing studio is understanding the existing built environment. Grasping the reality or context of a location is important if the location of research is in a foreign country. For me analyzing the existing built environment is one of the main aspects of the research to achieve this. Following the tradition of the dwelling chair, the first step is the analysis from a typological point of view. Via a morphological analysis, a variety of different urban fabrics are identified. Each of these urban fabrics is further analyzed in terms of building characteristics, dwelling units, stacking principles, circulation systems, and building principles. This typological analysis starts already in the Netherlands. In this stage making assumptions is inevitable. These will be, later on, verified during the site visit and corrected if necessary. With this typological analysis, we build a frame of reference.

A literature study is also part of this first phase of the research. As a group of nine students we built up a collective knowledge base focusing on the aspects of: history, religion, economics, demography, climate and politics. As part of this collective knowledge base the method of spatial mapping is used to analyze the existing urban fabric of the city and the growth over time. These three methods, the typological analysis, the spatial mapping and the literature study, are combined in a research design booklet.

The Field trip provides an excellent opportunity to learn more about the social and spatial patterns in each of these dwelling types. The following tools are used during the site survey: Interviewing, observing and photographing. The collected knowledge will be translated into a book of Patterns; a catalog of social and spatial patterns expressed in drawings. The book of patterns can be used a benchmark during the entire project and in that way, the analysis of the social and spatial patterns will shape the project and the way it facilitates the everyday practices.

The Research will continue after the site visit with analyzing case studies and literature studies focusing in the specific topic of inclusive communities. In this part of the research I want to look at different projects in Mumbai and how they provide for inclusive communities. Literature studies can help me here to focus on the right aspects when analyzing this.

b) Literature and general practical preference;

Site survey as case studies:
- Belapur, Charles Correa, Navi Mumbai → transition from public to private space
- Swadesi market, Mumbai → combination of commercial and dwelling (mixed-use)
- Original Baithi chawls, Nala Sopara → as a reference of the original living environment
- Sites and services scheme Charkopf, Mumbai → community life, use of open space

Other Case studies:
- LIC project, Ahmedabad, Balkrishna Doshi → use of open-to-sky space
- Belapur project, Mumbai, Charles Correa → flow of spaces
- Blijdorp Rotterdam → flexible use of units
Literature

A+t research group. 2015. Why Density?. Alava: a+t architecture


C.3 Relevance

The housing shortage in India is enormous; 27,000,000 housing-units are needed to accommodate the Economical weaker sector. In Mumbai 10,000,000 people are living in slums and 1,000,000 are homeless. The United Nations has set seventeen goals for sustainable development. Goal 11 aims for inclusive, safe, resilient and sustainable cities. The first target of this goal emphasized the importance of the accessibility of adequate, safe and affordable housing and basic services for all and the upgrading of the slums. But this goal does not only focuses on the living conditions. The targets take into account the accessibility of safe and inclusive green and public space for all; including women, children and elderly. The widely applied baithi chawl redevelopment scheme may measure up to the first target point of safe, adequate and affordable housing, but when looking at the terms inclusive, communities, accessible green and public space the scheme is not adequate.

Changing the focus of the redevelopment from solely providing shelter for the current inhabitants to creating 'inclusive communities' can contribute to achieving the United Nation sustainable development goal eleven; Sustainable cities and communities. Plus at the same time create an environment that enables people to advance socially and economically and therefore even contribute is a way to the first goal: No poverty.
10 introduction presentation global housing by Nelson Mota, september 2017