GRADUATION PLAN
Master of Architecture, Urbanism & Building Sciences

A - Personal information
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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:
[Here you should explain the reason(s) to choose this studio; one paragraph is
enough]

I think Architecture is not only about structure or aesthetics, the essential of architecture is to help people dwell. Global Housing Studio gives me a chance to realize this purpose with architecture design. This studio requires students to experience Mumbaikars’ lives through a fieldtrip of several weeks in India and truly understand housing issues people are facing with, which can be really helpful for architecture students to make designs for people’s sake, but not for self-righteous reasons.
C - Graduation Project
[Community-oriented housing without developers: Redevelopment project of Baithi Chawls in Nalasopara, Mumbai]

C.1 Goal
In this section, you should identify the project location (in our case Nalasopara, Mumbai, India) and answer, as clearly as possible, three questions:

a) What is the problem that you want to tackle? (Problem Statement);
b) What is the Research Question? (The question(s) should be specific - not vague - and formulated in a such a way that you feel that you can contribute to provide an answer to it (them).)
c) What is the Design Assignment that you have in mind to explore a possible solution to the problem formulated in a) and to contribute a possible answer to the question(s) formulated in b)

Note: The Section C.1 (Goal) should be a revised version of your problem statement, (word length around 1000 - 1500 words).

Site:

The Baithi Chawls are located on the east of Nala Sopara, close to the hill and on the outskirts of the village. They are scattered around and in the informal settlements. As we all know, some slums typically begin at the outskirts of a city. Over time, the city may expand past the original slums, enclosing the slums inside the urban perimeter. The original slums, over time, get established next to centers of economic activity, schools, hospitals, sources of employment, which the poor rely on. My project’s site in Nalasopara is in the same situation, all public facilities are within one kilometer distance from the baithi chawls area, and the train station is in about fifteen minutes walking distance. From satellite images, we can see Baithi Chawls are packed very close to each other. They are built as long, rectangular stretches and form an irregular pattern of dense blocks. The urban pattern is formed of wider, central streets and narrower paths between the blocks. The dwellings can be accessed via these smaller paths. The front doors of the dwellings are all opposite to each other, so that the backs of the dwellings are very close to each other, forming a narrow ‘back alley’. The Chawls have been built in quite an organized way and form part of a centrally developed scheme, presumably built by factories to house their workers.

Background:

India’s expanding cities have been unable to meet the rapidly growing demand for housing, especially from its low-income population. Official estimates from The Ministry of Housing and Urban Poverty alleviation indicate that urban India has a housing shortage of 24.7 million units. Over 90% of the demand comes from the economically weaker sectors (EWS) and low-income groups (LIG). With inadequate growth in the housing stock in Indian cities and no planned spaces
for the urban poor, squatter and slum settlements in the city’s interstitial spaces have become their default dwelling areas. While India is urbanizing at 3% a year, India’s cities are urbanizing at 4% and slums are growing at 5% per year. Mumbai, as India’s economic capital and most populous city, has a total population of 12.44 million — 60 percent of whom live in slums. Large-scale slum proliferation is a complicated issue relevant to a variety of factors.¹

**Market-dominant Model:**

The expansion and persistence of slums in Mumbai is primarily a function of failed housing policies combined with other political factors. Mumbai is among the first cities in the world that have adopted a market-dominant model to redevelop slums. Given the limited resources of local authorities, the model provides an alternative approach to handling informal settlements, an issue that many developing countries are facing. As innovative as it is, the model demonstrates several problems.

To begin with, the operation of the model starts from the direct negotiation between slum dwellers and developers. Although it gives slum dwellers the freedom to choose which developer to work with, it often leads to fights between developers, as they all have the desire to redevelop profitable areas. The unregulated and even vicious competition between developers also creates opportunities for rent-seeking. Secondly, the current model does not provide specific standards on the quality of rehabilitation buildings. Much discretion is left to developers. Some of the rehabilitation buildings are designed and constructed in a way that compromises the living standards of inhabitants. Some rehabilitation plots do not have sufficient amenities or open space. There is the danger that the rehabilitation buildings will become “vertical slums.” In addition, because of the cut-off date for eligibility of rehabilitation, the ineligible population is left with no option but to stay in unauthorized manner in slums. Many of them have to settle in a new slum after their previous slum is demolished by the government.²

This list of problems led me to question this market-dominant model, and made me wonder if there are others ways to redevelop slums. From an architect point of view, the main question for me was:
How can you provide affordable housing for the urban poor and how can you give more with less money?

**Building group Model :**

More than half of the Mumbai residents are said to be living in slums, but half a million flats are left vacant there, since the majority of people can not afford these excessive priced housing. Why is this house price untouchable for millions of people? As we all know, the selling price of a real estate product consists of three things: Land cost, Construction cost and Builders profit.
First, I want to talk about Builders’ profit. In Mumbai, profit margin varies from 10% up to 70% in certain cases, on average, builder profit for developers is around 20 percent of the selling price of one real estate product. This made me wonder if there is a way to cut the developers out of the process all together to lower the house price.

Without developers, who is going to produce affordable housing? In my opinion, architects and dwellers could take this role together and provide a better solution than developers, if we as architects could determine the framework for ourselves, handle the entire design and construction process, as well as the marketing. Under an architect’s guidance, residents can become clients by forming a building group in order to purchase the site that architects suggest for their particular project.

In my opinion, architects can do some things way better than just designing or constructing in Mumbai. For example, developing strategies together with building groups to achieve housing solutions with smaller scale practices that not only address today’s necessities, but also indicates the future tendency when it comes to slum redevelopment for urban poor. When the government can not really accommodate large numbers of people living in slums, people can turn to figure out how to create settlements and improve their life quality by themselves, and give a bottom-up answer to the redevelopment of slums, instead of expecting and waiting for the capitalist to do something good for no reason.

We can adopt a new Building Group Model to replace the Market-dominant Model. By doing so, we can get rid of the developers and remove Builders profit. In this way we can provide the urban poor better and make cheaper housing more available.

The second thing I want to talk about is the construction costs: how can you reduce Construction cost?
My answer for this is incremental strategy.

The house can grow with the owner’s requirements and his earning capacity. Sometimes they may even add a new housing unit and use the rent they receive to further improve their homes. Although the incremental development process of affordable housing is often called self-help housing, self-managed housing may be a more appropriate term, because the incremental development of homes typically involves labor by both residents and hired workers.

Because of incremental strategy, the housing is usually the low-rise building. The low-rise building has a number of crucial advantages. To begin with, low-rise buildings have a much shorter construction period than high-rise buildings. Thus, the interest cost of capital tied up during construction is considerably less. High-priority construction materials is not needed anymore. Multi-story buildings must use steel and cement, commodities which are in excruciatingly short supply in Mumbai. In contrary, low-rise houses can start with bamboo and mud-bricks, and be improved over time. Moreover, maintenance is much easier on low-rise
buildings. For example, the cheapest whitewash can be slapped on by a person on top of an ordinary ladder.  

And the third thing is Land cost. It is divided on the total available/consumed FSI, therefore we need to produce high-density housing to reduce the cost.

To conclude, three perspectives to lower the cost of housing can lead to a concept of a new housing policy model - Building Group Model - and also fulfill the design assignment, which is to provide high-density & low-rise incremental housing without developers for building groups.

**Building group communities:**

It’s said that an immense number of families from Mumbai maintain two homes – a small crowded one in the city, as well as the one they invest in, back in the village. For these Mumbaikars, traveling to the village is not an experience of going back, but simply of going forward, repeatedly and in a circular movement. Some of them even have lived in Mumbai since they were born, but still don’t think they belong to this city completely. They have to spend most of their lives in this city just because this city can offer jobs. Their world evokes another narrative of imagined communities, where conceptions of home and belonging are extended beyond geographical limits.

As far as I’m concerned, besides satisfying basic human needs like accommodation and ensure basic living conditions for the urban poor, an architects’ responsibility goes beyond that. Architects should help people living in slums integrate into the city both physically and psychologically. Life is uncertain and makes the people mutually dependent on each other. Urban poor in the city need an organization like a community to rely on and gain a feeling of belonging and sense of home.

In the Indian’s village environment, there is always space to meet and talk, to cook, and to wash clothes. There is always a place for the children to play. The traditional old village is a community for all residents, it is an acquaintance society where people know each other and are more willing to help each other. The community is not like a club which has both a clear institutional framework and regulations or rules, on the contrary, it is more open and tolerant and can grow naturally in appropriate context. The urban poor need an utopian settlement like the old village, which has a concept of a community where a sense of continuity of fundamental values of security exist. This could provide a good living environment for them. This is the reason I think the community needs to be formed by building groups made of residents. Additionally, the Building Group Model in my project is not only a solution for housing affordability, but can also be a design strategy to develop communities for these groups of residents.
Research Question and Design Assignment:

With the purpose of providing decent housing for people living in Baithi Chawls and also integrate them to the city psychologically, my Research Question is: How does the Building Group Model accomplish a self-growing community for the urban poor in Bathi chawls of Nala Sopara in Mumbai?

As for my Design Assignment for housing redevelopment of the Baithi Chawls in Nalasopara of Mumbai, the task is to at least accommodate the current inhabitants living in the Bathi Chawls area with the housing system model of building groups, which means providing high-density & low-rise incremental housing without developers for different building groups. At a dwelling level, I have to design house types with the quality of flexibility and diversity, to meet the needs of various socio-economic groups. At a community level, I need to think about creating a settlement where a sense of continuity of fundamental values of security exists, and to plan a good living environment for different building groups.

In other words, I want to create a physical and social organization of this area that provides a high density, mixed-use, community-oriented housing, where small-scale economic opportunities are created. It can evolve a framework within design where incremental physical development can take place within a legal, economical and organizational framework.
C.2  Process
In this section, you should identify the methods and processes that you’ll use in your graduation project, as follows:

a) Method description;
[A description of the methods and techniques of research and design, which are going to be utilized.]

b) Literature and general practical preference;
[The literature (theories or research data) and general practical experience/precedent you intend to consult.; For example, you can include some of the case studies we’ve analyzed in the research seminar and highlight briefly why they’re important for you]

A Method description;

1. Literature research
Literature is used as a method to collect scientific information about the research topics to substantiate and find answers on the defined research questions. Articles and books about cultures, tribes and India architecture provide insights into unfamiliar traditions and place specific aspects in Mumbai. By analyzing these case studies before going on the field trip, the determined information and focus areas serve as reference and make it possible to indicate to what extent this information still matches with the site-specific area.

2 Field research
The goal of the field research is to create an in-depth analysis about the site, culture, traditions and real-life behavior strongly associated with the place, in order to incorporate these specifics later into the design process.

B Literature and general practical preference;

mHS CITY LAB: mHS CITY LAB is a think-tank and implementing organization with a human centered design approach. They design and pilot innovative scalable solutions to foster the development of resilient and inclusive cities.
URBZ: urbz is an experimental action and research collective specialized in participatory planning and design in Mumbai. They believe that residents are experts of their neighborhoods. People’s everyday experiences constitute an essential knowledge for architecture, planning, urban development and policy-making. They are committed to information sharing and public participation.

Case study about low-cost housing in Mumbai:
Aranya Low Cost Housing/ Ayda Ayoubi
Belapur
Quinta Monroy / ELEMENTAL
Baan Mankons Program, Thailand
Squatter Houses/Charles Correa
C.3 _ Relevance

In this section, you should highlight the value of the graduation project in the larger social and scientific framework.
Note: This section should be no longer than 500 words: It can be a summary of parts of the problem statement.

Housing issue in developing countries is not just a problem about design itself, but also relates to political and economic conditions of the country. People don’t need perfect and fancy designs, which can only be built on paper or exist in utopia, but practical and feasible scheme of housing they can afford to build.

In the book The New Landscape, Charles Correa says: “If adequate housing is not appearing in our cities it is sign that something is wrong with the system. Our job is to understand the malfunction and try to set it right.”

Therefore, I think it is really necessary to put forward a new housing system model to bring the poor into the system. This is why my research question is focused on how the building group model works in the whole design and construction process. I will also focus on how to create community-oriented place for urban poor and really help them integrate into the city. My graduation project is just one attempt based on the background of this urbanization in India. More architects from all over world are needed to give creative solutions and smart designs, since this kind of urban growth in other developing countries like China, if managed properly, can be seen as the country’s greatest opportunity to make a meaningful impact on poverty and for the country to truly embark on socially inclusive growth.
C.4. Time planning

In this section, you should present a scheme of the division of the workload of the graduation project in the 42-week timeframe. Compulsory in this scheme are the examinations at the middle and end of the semester, if required, the minors you intend taking and possible exams that have to be retaken.

Note: The submitted graduation contract might be rejected if the planning is unrealistic.

4. The Value of Incremental Development and Design in Affordable Housing, Vinit Mukhija, University of California, Los Angeles
6. https://urbz.net/articles/mumbai-ratnagiri-express