REFLECTION
Architecture Engineering Graduation Studio

Incremental housing strategy in kampung renewal

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THE RELATIONSHIP BETWEEN RESEARCH AND ARCHITECTURE DESIGN

Both the research and architecture design are focus on one core concept: Incrementality. What does this word mean in architecture? The research formulates the diagram on the left to summarize the basic points about incrementality, which also acts as the standards to guide the design advancement.

Before generating the diagram, the research about incrementality is conducted by site analysis and case studies. The site is a urban village surrounded by textile factories in Bandung, Indonesia. Through the field trip, it was found out that local people extended their houses several times in the past decades in order to make money by rent or have a bigger family spaces. The current situation is shaped by the self-built phenomenon, which only improving the living conditions in a very limited extent, but resulting in a super crowded environment with poor living standard. These are the needs and problems that the later design project will focus on.

Now that local self-built methods cannot meet the requirements today, what kind of approach can be adopted to give people the possibility of extending their living area but also benefit the whole community? Thus, several built incremental housing projects are studied to understand the background, rules and constructions, which helps to generate the left diagram, but also to promote the thinking on the specific design task in the urban context. So the final design not only acts as a summary for the research, but also an extension on searching solutions for incremental housing in high-density urban context, and finally realizing the goal of enhancing the quality of both private and public life in higher density situation.
THE RELATIONSHIP BETWEEN THE THEME OF THE GRADUATION LAB AND THE SUBJECT/CASE STUDY CHOSEN BY THE STUDENT WITHIN THIS FRAMEWORK

The theme of architecture engineering studio is to encourage students to start a design and research with a technical fascination. The subject that I chose is about housing, which locates in an urban village surrounded by textile factories in Bandung, Indonesia. The background of this topic is what I am interested in. Then through a preliminary introduction about the site, I more incline to figure out how to "make" a new housing projects for the area, especially for the building materials and building technics that allow people to extend their houses when needed in local conditions.

However, along with further research, incremental housing projects have more focuses than purely technical approaches. So the research part covers three aspects on incrementality with construction being one big part. It is about making the right material choices and building methods for different constructions in different time phases. Besides the construction research on light wood method, which can be one option for extension, a "smart core" concept is also proposed to improve the basic condition of infrastructure in community.

As this subject has a complex interactions with surroundings, the site research also accounts for an important role. Thus, in a broader perspective, no matter the technical fascination or the site research, the design concept and vision generates at the first place and connects the core logic line.

Fig2. The initial facade unfolding and after extension drawing
THE RELATIONSHIP BETWEEN THE MATHODICAL LINE OF APPROACH OF THE GRADUATION LAB AND THE METHOD CHOSEN BY THE STUDENT

The design method of AE studio is started with technical research and the connection between technical research and design topics. Msc3 is mainly arranged for research part, with design concept gradually forming. Msc4 is required to dive into the design project, with research on specific topics that related to design development, not only about the technical part.

My approach is a bit different, as I followed the way that I usually started an architecture design. I have a overall concept which is formulated at the very beginning based on my architectural fascination, which is about extending the houses and building the new parts by dwellers themselves. Correspondingly, the technical research focuses on the proper construction materials and methods that will allow people to build by themselves on the existing houses they have. However, along with the development of research, the existing situation was turned out to be of little value to build incrementally. Then, in order to let people continue to build, a infrastructure that will provide the community benefits and possibility for people extending their houses is designed, which is decisive for the implementation of incremental housing strategy on existing situation.

For the technical topics, the construction is not only about the materials or building methods that allow people to build by themselves. Since the construction also includes building a permanent infrastructure to let people continue to build on, the requirements for different construction phases should not be the same. Thus, setting a scientific method to choose the proper building materials and methods for different construction process is gradually formulated.

Fig3. Section of "green core"
THE RELATIONSHIP BETWEEN THE PROJECT AND THE WIDER SOCIAL CONTEXT

The main concept about this project is to provide a "smart living unit" that can be plugged into existing kampung fabrics to create a more efficient, adaptive and lively community in a gradual replacement of old kampungs.

Incremental housing strategy is a representative feature in this small living community, the residential part is elevated to offer a resilient zone on the ground level. It can be filled in with functions like workshops for textile industry or open spaces for public activities under a "Flexible organisation" of structural and spatial design, but also allowing for going through freely with continuation on existing kampung atmosphere. Also, the ground area can act as a buffer zone when deluge happens.

The additional value for the infrastructure, like solar panels, rainwater collections, and vertical greens make this initially built part valuable to invest on. What's more, it offers variable housing types for different group of people with different needs and incomes. It suggested to use local wood and develop a normative building methods for later extension, however, it does not exclude other proper methods or new technics (CNC milled wood component) that people can easily customize their houses.

Fig4. Further application in replacing the old kampung fabric