

Graduation Project Reflection

Lars Hammer

26th of September, 2017

(1599 Words)

Tutors:

Henriette Bier

Karel Vollers

External Examiner:

Sien van Dam

Introduction

In this reflection I will discuss several topics which will explain the progress of design through the graduation year. The topic of my graduation, 'HUB' is a design in the high density context of Hong Kong, and with this design I want to create a higher quality of living. The design and process will be assessed by testing it in relation to several different topics; *Research & Design, Graduation Lab & Subject, Preferred Methodology & Used Methodology* and the *Wider Social Context*. Eventually a final conclusion will be formed.

Research & Design

The relationship between research and design

At the beginning of my project, I conducted research in a very broad sense. This was because I was given the opportunity to define my own project, set in a location/context of my own choice. I had only one requirement for my project, and that was that my project must be a better solution to the expected increase in population density in the cities. Naturally I researched into the topic of micro-apartments and different high density cities in developing countries. This was until I stumbled upon the project of Hong Kong resident Gary Chang with his '24 Rooms in One'. Chang designed 24 different configurations in his small apartment in the high density city of Hong Kong, made possible by moving walls and creating a highly flexible plan of his just 32 square meter room. When being confronted by this project, I had to think back to my own experience in Hong Kong in 2013. I had rented a room in a hostel in the MongKok district which was just 4 square meters, and had a one square meter bathroom attached to it. After doing more research into MongKok, I learned that MongKok is the highest density district in the world, with around 130000 inhabitants per square kilometer, mainly paying extremely high costs per square meter and in living circumstances which would not be tolerated in the West. This was the reason I chose to design a new building in MongKok, Hong Kong which would deal with the problems in the high-density city by creating a better living quality for the people in the apartment blocks and surroundings. After finding a study, where inhabitants of Mongkok were interviewed about things to change within the district, it became clear that there were many problems to tackle in this context. Thus, I was forced to pick a few to focus on. Due to a low amount of daylight, I chose to focus on creating more natural daylight within the building, and use this to create more qualitative public space within the building itself. In order to design this more qualitative space, I also focused on ways to deal with air pollution as well as noise pollution. Another problem which came forward was the tendency of Hong Kong people to meet on the streets, creating over-crowded streets, due to lack of quality public space. This created the need to integrate these socializing areas within the design itself.

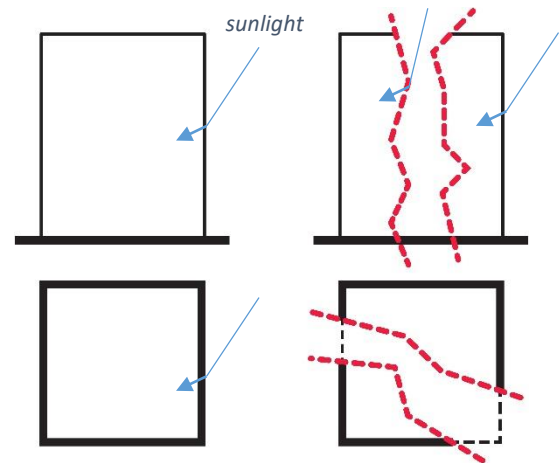


Figure 1: One of the first conceptual diagrams

These research topics have been a red line through my process, and made it possible to re-evaluate different design decisions by testing them in relation to each research topic. Therefore, the final design has incorporated solutions to this problem in one way or another.

Graduation Lab & Subject

The relationship between the theme of the graduation lab and the subject/case study chosen by the student within this framework (location/object).

The Hyperbody Studio is in itself a studio within architecture, but separates itself entirely from the more conventional architecture studios with its focus on robotic design, S.M.A.R.T. Architecture and futuristic methods and buildings. The studio aims to investigate different strategies and building methods in a futuristic world, but with a more conceptual approach. I decided to focus on the S.M.A.R.T. Architecture element of the studio with my project and kept this in mind during the process and design. The problems solved had to be solved with S.M.A.R.T. and parametric simulations. This part mainly came forward in the period between my P1 and P3, which focused on walking routes for sound propagation, direct sunlight into the building and determining the shape of the building. Eventually, the shape of the building and its elements are all related to the research done within the environment of S.M.A.R.T. architecture. However, due to my limited experience with S.M.A.R.T. architecture, it surely costed me a lot of time to get to know specific programs and how to implement them. Eventually that might have taken the most time of my project.

Preferred Methodology and Used Methodology

The relationship between the methodical line of approach of the graduation lab and the method chosen by the student in this framework.

A methodology used within the studio, and also the methodology I personally wanted to implement, is mainly with parametric data collection, and basing a design which acts on this data connection as well as. The first idea was to extract meta data from websites like Instagram or Twitter, to determine where the most people would be. While parametric data collection was partly included in my process, the envisioned level of implementation was simply impossible. Even though I knew quite early into the process that to learn the skills of extracting metadata would simply take too much time in relation to the total time for a

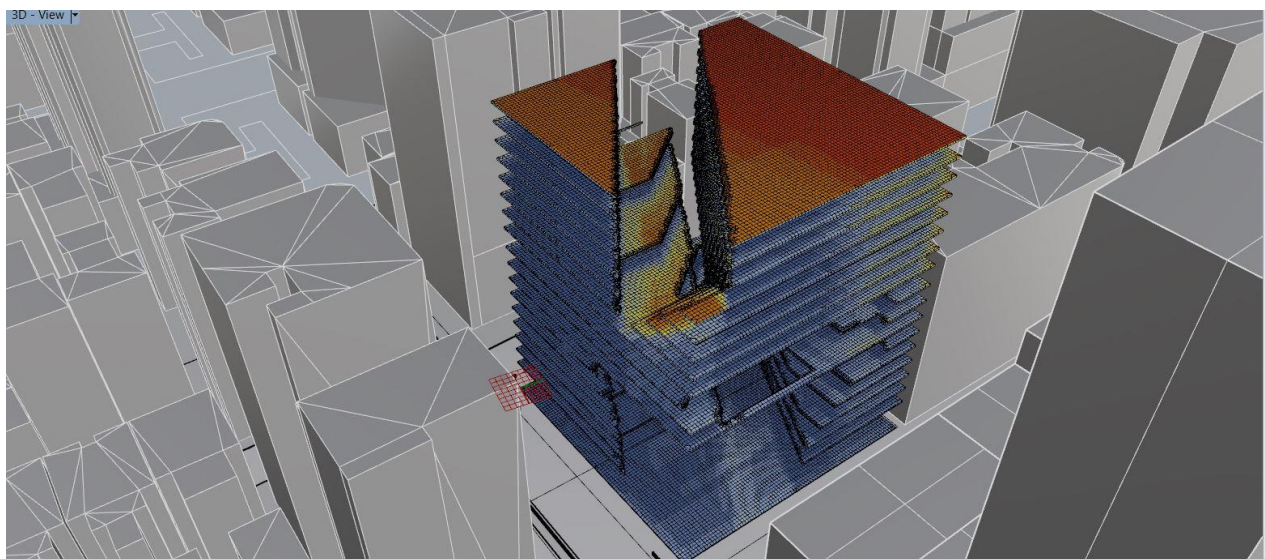


Figure 2: Parametric Analysis of Sunlight Hours

project, it did spark a new interest in me. Currently I am now doing some basic Python courses for possible future projects.

But data collection is not Hyperbody's main methodology; in fact, its methodology is very broadly defined but comes down to determining parametric properties which define the design. Even though I did not implement the envisioned level of data-collecting, I did implement several parametric studies to the walking routes within and outside the building. Also the specific shape and envelope of the building is determined by parametric studies of the location of the sun. This resulted in a building which core-design is based on parametric design.

The wider social context

The relationship between the project and the wider social context.

A big inspiration for this project was my personal experience when visiting Hong Kong. The building site chosen for the final design is the original building site where I stayed during my time in Hong Kong back in 2013. Because of this, I could relate to the problems I found in the city and during my research back to my personal experiences. Examples include the extreme density, the lack of quality public space, the never-ending stream of loud noises, and of course the thousands of people who are trying to protect themselves against the toxic air by wearing mouth surgical masks. This also made it blatantly clear to me that the current situation is most of all a very unhealthy situation. In a world where now more than 50% of the population live in cities, we can only assume that these problems will get worse. Therefore, we as designers must find it in ourselves to transform the cities, from a place which just passively offers a place for its inhabitants to live in every small corner, to a place which actively assesses the needs of the people and presents itself as a place they would want to live, creating a healthier, more productive, and more sustainable situation.

Of course it is not possible to change the core on which all current cities are built overnight, so I imagine ourselves having entered a transition phase, from the old unhealthy cities, focused purely on efficiency, to the sustainable city, focused on efficiency *and sustainability*. A transition phase often inhabits many new technologies and concepts of which some prove efficient and some prove inefficient. I see my own design as a combination of ideas which could potentially improve the quality of life in a high-density city like Hong Kong, as well as other upcoming high-density cities in the future.

My design strives to reach this goal by creating a volume that blends the contrast between *City and Nature, Private and Public, Orthogonal and Organic, Work and Living, and Commerciality and Community*. The blending occurs within a leading integrated parametrical element throughout the building which connects it all together.



Figure 3: Two apartments for two families in Hong Kong

Conclusion

Eventually, the design-process followed a clear path from the first phases to the final design, where as the research done helped me greatly. With this research, and having a very clear idea of what I wanted to achieve with my project, I basically have not been in a difficult position once during my process. Naturally there were moments where things turned out differently than I initially imagined, for example the data collection mentioned in the first chapter. But this caused me to learn from the situation and motivated me to learn coding for possible future projects.

My project in relation to Hyperbody has been different than I first expected. At first I thought significantly more time would be spent on creating smart architectural systems; however, this was just a basic idea which was more focused on in the first year of the masters. Other than that, I learned a lot about new programs and how to implement them.

Even though some things didn't go as planned, I am happy with the final design as I do think it provides the solutions for its wider social context.