Reflection
Student name: Guangkai Liang
Student number: 4242394
Tutors: Henriette Bier; Nimish Biloria; Martin Sobota
Studio: Hyperbody
Presentation Date: 2014.05.22

Research background

In recent years, because of the development of other areas of Guangzhou, the Huanshi East CBD is facing fierce competition. What’s worse, this CBD has some inborn weakness when compared to the other CBD due to some urban planning mistakes. The first one is that the core of this CBD is divided into two parts by a busy road. The buildings in this area are disconnected. People who want to go to the other sides of the CBD have to walk for a long time or experience the anxiety space under the Huanshi East Road. Besides, people in this area also lack space for recreation and public activities. The aforementioned factors decrease the attractiveness of this CBD. This pose the research question: what can be an appropriate solution for this complicated site?

Research Objectives

In the contemporary society, building performance is becoming increasingly important for design process. It requires architect to really think about how the architecture should perform under certain conditions and what benefits on aspects such as environment, social-economy, etc can be achieved from it. The current situation of the selected site posed the big challenges and urgent need of designing a high performance building. The building should be done in three interlinked stages – first being the urban and infrastructure level, second being the more precise building level and the last being the user comfort levels around the building and the surrounding context. More precisely, the objectives of the design are improving the living environment and competitiveness of the Huanshi East CBD by solving the aforementioned existing problems. The project will be built above the road. And it consists of a CBD information center, a senior club, a multifunction hall / room, some exhibition spaces, some commerce space, some connecting paths to the urban network and some landscape space. And the design should perform well in terms of adapting to the local climate and surrounding context.

Applied Research Methodology

Hyperbody uses a research-driven design approach for creating non-standard and interactive architecture. As a student of this studio, in the past year, I have been deeply influenced and committed to regarding my design assignment were the agent intelligence theory and performance-driven design.

The utilizing of agent intelligence theory is mainly embodied in the research for understanding the information logistics among the environmental factors, the context and building program.
More precisely, rather than considering the programmatic arrangement as the organization of platonic programmatic elements, I have considered the program as a self-organizing system of spaces of programmatic masses which aggregate based upon weighted connections and the attraction positions (defined according to the urban research and climate study). By developing a computational system in which I set the rules of the system and dynamics of the behavioural variables, I have created a set-up in which geometry of the built form for different scenarios. Conclusion of selecting simulation outcomes for further research was made with regard to public/private zones, topology and location as well as morphological translations. In the design development stage, with the help of advanced digital tools, the performance of the building on different aspect such as daylight level of ground was predicted and worked as the indications for design improvement thorough out the whole design process.

Relationship between the project and the wider social context

This brings back to the question: How can my design meet the requirement of this site?

In terms of functional aspects, firstly, the project will improve the internal connection of the buildings in this CBD. Secondly, the project also provides some recreation space for the people working around and the local citizens. Thirdly, the enterprises in the CBD can get the space for showing their products and introducing themselves to the public and the businessmen from the hotel. In addition, the project also provides space for private interface, which also improve the chance of doing business. Last but not least, the unique shape of the building and the landscape area attributed to it also provide people of the surrounding buildings with good sceneries. For the technical aspects, firstly, the foot print of the building was optimized so as to minimize the side-effect on the daylight level of the ground space. Structural support positions and circulation connection points were also optimized to keep the circulation of ground level smooth. For the noise reduction, the whole building can to some extent work as a noise barrier that can block considerable amount of noise from the road. To sum up, with the project, both the business environment and the living quality will be improved a lot. The Huanshi East CBD will become much more appealing to different users such as enterprises, citizens and businessman.