

## Graduation Reflection

### Preliminary results of the research

Fieldtrip is very important method to help us build up the design project. It helps us to sense the city that we can only know from google map before, seeking problems and specificity in the border city. The starting point of my design is to help people without formal jobs in Juarez. The target group are street sellers, youth dropout school, young housewife without basic education, etc. These people occupy large percentage of the total population in Juarez. Without formal job, they earn low salary or even no income. According to the interview, they have no insurance, very low welfare, the living situation is not optimistic. To improve their living standard, apart from creating more jobs, the government should also offer more education support. In the stage of P1, my research was focus on the education situation in Mexico. Large data shows that the education infrastructure in Mexico fall much behind that in America. Without enough financial support, the amount of education infrastructure and teaching stuffs cannot satisfy the demand of student. These directly leads to a general low competitiveness of the labor market. Young people cannot find a decent job, the society is pushing them to the street which brings huge hidden troubles for the public security. Based on the social research, I determine to improve the education condition for this situation.

According to the urban research, in the northwest part of Juarez, closing to the border, large scale of self-build low income housing gather around. This district is also the area lacking community culture, public infrastructure and education resources within the whole Juarez. Especially in the area along the border is almost nothing. My site is chosen in this area, and I plan to apply the approach of adding education infrastructure to promote the education level of people in this community, by creating vocational school and community center to serve the people in all age in this community.

The site chosen is very special, the international river goes through the site and the borderline cut site into two parts. In the area with a radius of 1000 meter located the El Paso University, the only university in El Paso city plus one more elementary school. In the Juarez region there is a shopping mall and some existing public infrastructure. Another specialty of the site is the international river flows through the site has the narrowest width of the whole borderline. The river is only 7 meters wide, and for 14 meters including the canal, which offers me a good condition to do further design.

### Design approach

As the school located on the border, it is able to serve the students from both countries. The residents in America needs a secondary school for the community. As it is an international school, it can offer higher quality education and better infrastructure to Mexico students. Nowadays a large number of Mexico student go across the border every day to go to school in America. It costs them every time nearly 2 hours to get to school because of security check, which means they have to set off earlier than 6 am to get to school on time. With the geographical advantage, my project can possibly solve this problem. As a school lying on both of the 2 countries, it will definitely help to save the time of commuters and bring great convenience to Mexican students. To balance the problem of security check and fast pass. I suggest the strategy of setting the security check on the exits of both sides when students of two nationality go back to their home. The school is not an open public architecture, strict security check at exits can solve the problem in principle. In this way, the border of 2 nations is transferred into the border of the building in this project. The project creates a free zone in which multi-culture are interacted on the border.

Before dealing with the architecture, I did a lot of study case research to find what a school really needs. In the whole design process, every design decision is based on research results. The applied

design approach is the combination of design idea and research outcome. First stage of study case taught me the program and function of a school, typical layout and scale of classrooms. And when design went further, the research becomes more detailed, for example, what is the atriums looks like in previous projects, how to design a library? The different forms of school are well researched in the past years, so I can find various projects that help to build up my own one. And finally I found what I should really focus on is the specialty of my project. The specialty is that the school lies on international border. It is like a laboratory that explore mixed complex aspects and the potential of such a situation.

Then I turned my research direction into the difference between Mexican and American education. They are quite different in term of education system, methods, learning behavior. Mexican students found themselves very hard to fit in the USA schools. Based on the research, I set the strategy to offer independent teaching zones for students from 2 different countries to fit their living habit. In the stage of P2, I came up with the idea to set a strategy that organize the campus into two buildings, students from different countries are totally separated, they can only meet each other in a controlled courtyard. This method overturned my originally opinion about share and communication. I set border inside the building, it is not helping student to bridging the gap, actually it is creating the gap. The strict security control in the building also obstructed me to do further design. After P2, I rethought my previous concept. I hope the student to feel that they are in an international zone, and meanwhile they always have the choice to stay in a comfortable space. They can share all the other facilities in the school. In this way, my design offers different relationships between students from 2 nations. They can have classes in their own familiar environment, and communicate with each other internationally when using library, basketball playground, shared IT room, etc. There is no border in the building, only the feeling of being in different zones.

### **Methodical line of approach**

As for the architecture volume design. My strategy is to fit it into the urban context. The site lies between two typical urban context which all have very strong urban axis. In another aspect, in order to decrease the sense of separation in the campus and to enhance international feeling in the building, I chose the layout of radiated shape to organize the space. In this way, public function is dispersed in different zones. Every zone has its own characteristics and own the same level of importance to achieve the balance among the campus. According to the urban context, the radiated shape perfectly points to the same direction of urban axis.

The school building is controlled by the border guard, to prevent other people using this building to cross the border illegally, the school has no open space in the international zone. So I prefer to build large open area inside the building and create abundant space for students to decrease the sense of being trapped inside the building. Multifunction hall lifted up to the first floor in order to fit the situation that the ground level of American students is higher than that of Mexico. In this way, student who sit in the hall can see the El Paso University, what is a sight communication that I create for the project. The basic strategy to deal with the open wide space is define the zones and let interaction happen naturally. Atrium in the joint part of three volumes is the common place that everyone including students from both countries and teachers will pass. It is meaningful to be there like meeting friends, sitting in a cafe, making exhibition. It is a place that users can define its function according to whatever is needed. People become the most important scene there in the atrium. In order to create large open atrium with minimum number of column, the truss is used to support the weight of roof. And the roof has many skylights that help to decrease the total weight.

In terms of technical and facade design, as solar power is very strong in Mexico, sun shading is crucial to the inner environment. In my project, I chose the vertical louver panel as the facade. The louver panel can rotate to prevent from direct sunshine coming from different direction. Natural ventilation is chosen in my project for most of the classrooms. In the future if necessary, we can install ventilators/fans under the ceilings of those room. In the Hall and Atrium of the building, the suspended ventilation units will be installed. With the help from the mechanical ventilation, the airflow circulation in the whole building will be completed. In additional, the solar panels on the roof can collect solar energy to heat the water, which meets the demand of hot water in the project. Moreover, if the budget permits, the vast roof area can also be used for installation of photovoltaic panel, which create green electricity for a sustainable running of the building systems.

To conclude, my graduation design is a process of researching and modifying after researching. Researching the field data and collecting experience from similar projects help to make my project more convincing. It does a lot to inspire my design and my design in return also pushes research contents to become further, deeper and more precise.