Reflection Report (P4)

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Project title
South works: a laboratory for healthy city. Chicago Lakeside Conference centre.

Studio
Studio: Complex Project Graduation Studio
Theme: Chicago Lakeside development
Teachers: Roberto Cavallo, Hubert van der Meel, Henri van Bennekom
Climate consultant: John van der Vliet
Structure consultant: Joris Smits

Introduction
My graduation project is a part of Chicago Lakeside graduation studio in the Chair of Complex Projects. The goal of the studio is to develop a complex architectural solution based on analysis and economic and social strategies, integrated within existing fabric on different scales.

The location of the project holds a lot of potential - a vast landfill area (227 ha) within the borders of the city of Chicago, just 20 minutes drive from the central loop. However there are many problems as well. South Chicago neighbourhood was originally typical American working-class neighbourhood, developed around US Steel South Works site. Deindustrialization and the closing of the steel mill caused unemployment that over the time led to low income, housing vacancies and race segregation of the neighbourhood. Unemployment, low quality of housing and lack of social services, race and class divides resulted in high vacancy rates, low education level and unattractive image of the community.

In order to attract the investments and improve the current state of the neighbourhood a new strategy is necessary. The strategy must provide the base for neighbourhood revitalization, make it attractive for future development as well as determine and address the problems of existing community.

Research objective
My research objective was to study the influence of the new development on the existing neighbourhood as a catalyst for urban regeneration, and the relationship between the new elements and the existing framework. The intention was to develop an urban strategy based on the research of the economic and social conditions, which will influence the neighbourhood revitalization on several levels. The new development on the former South Works site could have a more global effect by establishing a “brand” for the neighbourhood and attracting new investments and residents, while it
could also address local scale, providing necessary facilities, working places and attraction points for the local residents.

Research method

My research process was divided into several stages, addressing different aspects of architectural design and research:

1. **Urban research** was done on several scales: L – regional level (Illinois state in relation to the Midwest and the United States in general), M – city level (City of Chicago in relation to the metropolitan area and the state) and S – neighbourhood (South Chicago in relation to the city). The research covered many aspects, both quantitative and qualitative, giving a clear picture of political system, cultural values, local typologies and infrastructure.

2. **The study trip** to Chicago in October 2013 gave me an understanding of the context and local culture. The research of the SOM master plan for the vacant land of the former US Steel Mill provided an important material and an insight into the intentions of the developer, expectations of the local residents as well as the discussion with the McCaffery Interests (the developer) representatives.

3. **Literature studies** on context and Chicago planning features helped me to gain knowledge on the context, society and the local characteristics. The case studies helped me to define the strategies, provided the examples of holistic neighbourhood development and catalyst architectural interventions.

4. **Strategy development** On this stage I used the collected materials in order to develop an urban strategy for the site. I have explored different functional possibilities for the new development in terms of their relevance to the site, the neighbourhood and the city in general.

5. **Individual design** On this stage I pushed my research to the next level, by studying the relationship of the new elements and the existing framework. Through the design proposal I established the link between the functions in the master plan and the neighbourhood. The research of the site conditions and local characteristics helped me to establish the relationship with the site and historical heritage.

At each stage of the research / design I focused on the relationship between the scales and the effect of the intervention in short-term and long-term perspective.

During the final stage – architectural design – I have focused on different aspects of the building: building location in relation to the surrounding context; functional structure; external image; interior spaces (zoning, routing, integration of the walls); materialization (structural material, interior textures and surfaces); structural design (structural concept of the envelope); climatic design (sustainability).

Product

**Urban strategy**

The result of the first stage of my thesis work is an urban strategy for the South Chicago neighbourhood revitalization through the development of the Health City cluster on the former South
Works site. Based on the extensive research done in a group of 4 people, we have chosen healthcare related functions as potentially the most applicable to create a brand, attract investments and provide essential facilities for the neighbourhood.

Healthcare and social assistance is currently among the top employment sectors in the Chicago area, therefore it has the potential to provide a significant number of diverse job opportunities for local residents as well as for new arrivals. The research of the lifestyle related health conditions has become increasingly important today. Healthcare is one of the priority issues for the city government.

The concept of the Health city includes education/ research cluster and the residential clusters based on the healthy living principles. The first phase of the development is Health Education and Research cluster that will establish a platform for collaboration between Chicago Medical Schools, healthcare-related companies, based in the city of Chicago and Chicago metropolitan area, scientists and researchers. The cluster will provide a number of supporting functions for the neighborhood: education and medical facilities, public space and cultural functions. The science cluster will be interconnected with the new residential clusters on the site that will become the prototypes for the healthy city, designed according to the standards of “healthy living”.

The strategic plan creates a new important destination in the city. It addresses the infrastructure in the neighbourhood, improving the connectivity, quality of life. It relinks the existing community with the lake Michigan through the network of green spaces.

Individual design

As follows from the research objective, my research is focused on the relationship between the new urban elements and the existing framework. In my individual design research I aimed to develop a building that will become a linking element between the functional elements in the research/education cluster, existing neighbourhood and the public facilities, developed within the Health City master plan. I believe that a Conference Centre could become a link, providing collaboration space for the Science Cluster and attracting the public by facilities, exhibitions, public events and not last – an architectural quality.

It was very important for me to establish a connection between the building and the site – its existing assets and its history. One of the important characteristics of the South Works site is the industrial heritage: industrial railway tracks, old vessel slip in the heart of the site and the massive ore walls. The ore walls represent the history of the place and hold a lot of potential for redevelopment. Being out of use for more than 20 years, the walls are a part of the landscape – the distinctive feature of the site. My project is based on the relationship of old and new: a new multifunctional space within the historical framework. I believe that the ore walls could become the link between the past and the present, as well as the linking element of the campus.

I have chosen the western part of the walls for the Conference centre, as most of the office and research facilities are clustered in the western part of the campus. Situated at the base of the walls, the building will become an initial element of the composition of the walls, inviting the visitor to follow the routing between the walls.

The chosen volumetric and spatial concept of the building is the result of extensive tests with physical models and 3d visualization. The external image is created by the complex structures of the glass roof, covering the “interior street” between the ore walls.

The walls are integrated into my design as the essential parts of the structure – vertical elements of the structural frames. The structural concept (slim steel frames, reinforced by tension cables
positioned with a step of 2 m) was developed through the research of literature and references in collaboration with the structural consultant.

The materials chosen for the building (steel, glass, concrete) are also somehow related to the industrial past and supplement the massive structures of the ore walls. I have done a side research on the possibilities of application of architectural concrete in the interior. As the result I have chosen the precast concrete panels for the interior - the diverse patterns and textures could be achieved by using the moulding technique.

Through the research of possible sustainable technologies that could be integrated in the building and HVAC systems based on renewable energy, I have developed the climate concept for the building, aiming not only to make my design energy-neutral, but focusing as well on the production of excessive energy (in the form of electricity and heat energy) that could be supplied to the surrounding buildings.

**Relationship between Research and Design**

I believe that the project exhibits a clear relationship between research and design. In fact, most of the strategies proposed resulted from the research done throughout the year. A wide range of research methods provided me with an invaluable knowledge on diverse subjects and opportunity to test my decisions. Through the clear guidance of my tutors and insightful consultations with the specialists in climate and structures, I have been able to develop an interesting design solution, supported by the thorough research and analysis at all stages.

**Relationship between the Project and wider Social Context**

On one hand the urban strategy developed within the project is aimed as a possible solution for urban regeneration of a typical working class neighbourhood, dealing with the long-term consequences of deindustrialization and closing-down of the steel mill that provided employment for most of the residents. The strategy provides new opportunities for local residents as well as for business and investments.

On the other hand the project focuses on the problem of adaptive reuse of former industrial sites, buildings and structures – a very relevant problem today. I am going to work in Moscow – a large modern metropolis, facing many urban problems. Strategic redevelopment of former industrial sites is one of the main issues in Moscow today. Many ideas and solutions developed within this studio could be directly applied in the case of Moscow.