

Shuai Min Zhang 1397222

Reflection report P4 Architectural Engineering graduation studio

TU Delft Faculty of Architecture

Technological research in relation to context.

It has been for some time now that a noticeable shift is taking place in social awareness. We have been moving towards a society that is determined to create a sustainable environment for future generations. The project that is being evaluated was an attempt at creating a building that can contribute to the goal of a sustainable future. The design is a waste treatment facility that is able to transform organic waste into nutrients. The building contains a restaurant, a greenhouse and a volume with the mechanical equipment. The research started with finding solutions for the topic of food shortage as a result of rapid population growth and the large amounts of waste generated by the consumer culture. An important element in this research is the physical action humans undertake to achieve the mentioned goals and how to build space that accommodate these activities. By combining these elements an idea is created that can be evaluated with arguments. The next step is to find a technological solution that is able to solve the topic and at the same time create meaningful space for people to interact. The criteria for this technology is that it should not generate negative effects on the environment. The system has to be a closed loop that uses only minimal resources. After the choice is made the possibilities to create a design are studied. These include the size and the elements that can be used to accommodate human activity or interaction. The final phase of the project includes the preliminary design and the final design. The reason why this approach was chosen is to possibly review the possibilities in every step of the process. This is evident in the final design that shows strong connections with the technological research that was conducted.

Methodology in relation to Architectural Engineering.

The theme of Architectural Engineering studio is to create architecture that is deeply rooted in the engineering of the building or built environment. Similar to the Architectural Studio, where the technique of building is heralded as the more important aspect of the design, the chosen subject focuses on creating a building with a specific technique. The technique referred to in this case is the process to recover nutrients from waste and use it for food production.

The method can be simplified as three actions that start with studying the context, finding a technique to solve this and adding a function to make it work. The methodical line of approach of the

Architectural Engineering design studio however is studying the context, identifying a function and apply the most suitable technique to create a building. The chosen method aims to find the most suitable technology to improve the social context. This means that the resulting design serve as a precedent for a novel function in contemporary buildings.

In certain degree the approach did generate positive results. The criticism of the process however, is that the research focused too heavily on the process of the technology itself and barely on the human activity and interaction. This is mostly contributed to the fact that a lot of specialization is needed to fully operate such a system. It is possible that the method would have worked better if the research was focused on the human activities in industrial processes.

The resulting research and design has the potential to serve as a precedent for students interested in designing public buildings with industrial processes. It is recommended for future researchers to apply the latest technology in waste treatment or waste water treat. This is because the chosen methods appear dated and requires above all enormous floor space to built.

Figure: the research method in diagram

