Reflection

Bath in biomass energy station

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Aspect 1 the relationship between research and design.

My research is corresponding to IBA Parkstad in Limburg. My research question is focusing on the potential of a satellite plant system (Figure 1) in the region of Parkstad. The satellite plant system has 4 working spots in Limburg dealing with specific waste types and works with recreation activity. I researched on the possible amount of waste that could be transferred into energy and applied to the electric and heating system in urban network. Except the efforts on technology and working system, my design purpose is also to utilize free space in power station and to bring power station closer to citizens' life. In this way, the people's awareness of energy production could be enhanced living in a sustainable way. Sustainability and energy consumption are problems for all human beings. In other words, my research and my design could also be efforts from two aspects contributing to energy issues.

My design question is how to integrate recreation project (a bath centre) cohesively into a biomass energy plant in Parstad and how to build a social connection between these proposal spots and existing urban fabric. For this design work, I have chosen one of those 5 spots as a design sample for the rest in the crossing corner of Heerlen, Landgraaf and Kerkrade. It is now a tourism area with ski slope, Pinkpopplein and Gaia zoo. Bath centre would be a good choice after sports. Then, a modified energy flowing system is researched and achieved from the existing biomass energy production and working process in bath centre. In design process, I am also studying on atmosphere creation in a power station to let customs feel and experience about this power station as much as possible. The landscape is one of the important parts in design to connect with urban environment and surroundings.

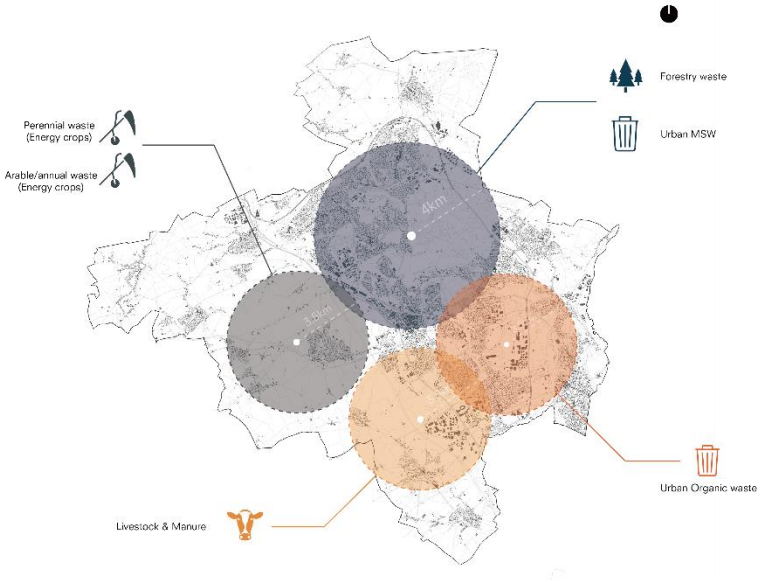

Figure 1 satellite waste-to-energy system

Aspect 2 the relationship between your graduation (project) topic, the studio topic (if applicable), your master track (A,U,BT,LA,MBE), and your master programme (MSc AUBS).

Architecture engineering is a studio focusing on applications of new technologies on building designs. Technologies on material, manufacturing and even running systems are all possible aspects. As an architect, probably we will never be scientists or inventors, but I think our duties at least should be to research and try to apply these technologies on building use interfusing in human' s life. Because technologies would only be worthy when they could improve and serve for people' s daily life.

My master programme is in IBA Parkstad. It aims to reduce urban shrinkage in Parkstad in terms of a series of aspects such as industry, education and energy. Parkstad was the area of coal mine factories in Netherlands in last century. With the development of other energy production, factories were closed in last century. My graduation topic will be a worthwhile potential exploration for the future development of energy production to alive Parkstad with a same field as industry. My programme is about a new mode between industrial buildings and recreations, and a physical impression of future factories running mode.

Aspect 3 Elaboration on research method and approach chosen by the student in relation to the graduation studio methodical line of inquiry, reflecting thereby upon the scientific relevance of the work.

The methodical approach of this graduation lab is:

1. research the site context and write an 8-page scientific paper based on this research

2. design an architectural intervention based on this scientific paper

For my research, I studied about existing working flow of biomass energy and bathhouse first. Then data about waste including amount and energy contained was roughly calculated to have a general understanding. Then the result was compared with energy consumption in Parkstad. To apply in the design, a new working flow (Figure 2) is expected from existing flows. The work of scientific paper could give a narrow direction of afterwards design work and is helpful to set design principle. It is a base that could be used in design to correspond to some pragmatic issues. Then design project could be worthier to refer to.

However, since we are students in architecture track, it could happen that we know too little about a specific field to have an overview first. Even a lot of references were read though, we lack a base and overview of knowledge framwork to estimate if we had had a comprehensive overview of a technology. Then the result might be possibly biased to issues.

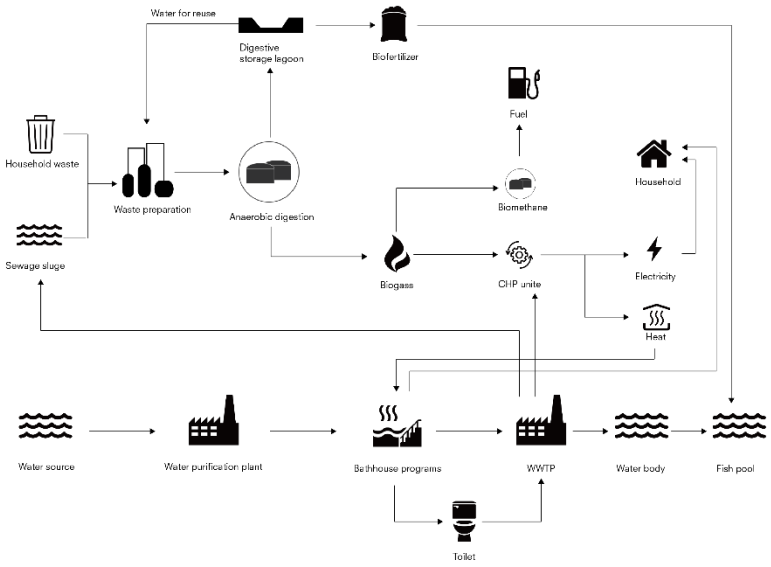

Figure 2 Proposed flow

Aspect 4 Elaboration on the relationship between the graduation project and the wider social, professional and scientific framework, touching upon the transferability of the project results.

The start point of graduation project is usually a specific nonignorable issue or question now existing in a city or a region. Topics of graduation projects will tightly relate with social or professional framework. It is not only an exploration about that issue but a method to research on this kind of issues. It is like a test about solving issues in architectural way. Even the results could not be transferred directly to other issues, but the research method could be referred to. It has its worth to be referred to when solving social and scientific framework.

This power station& bath house, as a design example in the satellite waste-to-energy system, will be a preview and referred to as a new mode first. Additionally, energy issue is a popular topic in many fields and researched on as an important issue. Industrial building as a place where energy production starts and shelters, what will it be and how will it change people's life in the future are interesting topics for architects.

Aspect 5 Discuss the ethical issues and dilemmas you may have encountered in (i) doing the research, (ii, if applicable) elaborating the design and (iii) potential applications of the results in practice.

Power station is usually located in spacial countryside area. And biomass energy plant is using waste which is not so 'beautiful' thing for people. That would be a problem why they choose to go to a waste field for fun. It challenges peoples conventical 'bias'. How to let them 'accept' waste and deal with the relationship between 'waste' and 'human' would be a big problem. Waste could become treasure if we dispose it by some scientific or specific method.

Since non-renewable energy resource is reducing, new energy will have a bigger market in the future. With the development of science, new energy production will be more efficient. Furthermore, more population will need more land. According to this situation, there is a huge possibility that power station would be closer to daily life and used for other functions at the same time. As a result, the test result of the design is possible to be a positive or negative reference and sample for future development.