Reflection

Master of Science Architectural Engineering

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Reflection

In my graduation project I will make a redevelopment of the Q-Port building, a vacant office space: On the one hand, my project focuses on the refurbishment of an office façade into an energy producing façade and on the other hand, it focuses on the establishment of a new use strategy for the Q-Port building in form of a Hotel and Congress Centre.

Out of my research and analysis of the content and the different functions found in the Brettenzone, my aim is to enhance the public live on site. I picked the Q-Port building as case study out of the location Brettenzone, because it stands for the problematic found on site. It is an unattractive empty office space with a medium energy performance and it is a bad example of urban planning when an important aspect of life – work – leads to mono-functional urban sectors. Instead of thinking in certain functional categories, I want to create spaces in the urban context in which we simply enjoy living – spaces with leeway for individuality – regardless of how large the building is. For me the Q-Port building with its side and placement in the Brettenzone has the potential to form an urban Benchmark, with an interesting energy and use strategy and enhances so the urban live in the Brettenzone. My objective is to offer room for culture activities and exhibitions, to enhance the attractiveness of this city part. Moreover, I want to establish a green building concept for the Q-Port building while fulfilling profit orientated commercial interests at the same time. A green building concept is not only hypothetical established, with a sustainable climate concept – it is also visible by the active drawing of the greenery over the building’s boundary deep into the building. This green way is the “Grüne Lunge” of the building and provides fresh air for the building service. My design is the transformation of the Q-Port building into a highlight building for the city part Brettenzone which acts like a benchmark for it and converts the Brettenzone from an empty office part of Amsterdam into an attractive leisure area.

One key point in my concept is to find an intelligent façade design that responses to the climatic conditions found on the site. The idea is to implement features in the façade which produce energy, so that the energy consumption of the buildings changes to an energy production. The methodical line of approach of my graduation lab is that I described the façade as a boundary between outdoor and indoor climate. The façade as a design element for the urban area. Therefore my method in the research was a literature study to explain the terms of outdoor climate and indoor room conditions. I pointed out which indoor circumstances influence the comfort of buildings and which relation they have to the façade. Moreover, I reflected the renewable energy sources of the earth and their potential for the energy production in the façade. Then, I gave an overview of case studies to reflect the current stand of techniques on the field of energy generating façades. In conclusion, I pointed out their potential and further development and gave an outlook which influence these technics can have for the design especially in the urban area. Many of my examined technical features for the production of energy within the façade are uncommon in buildings.
today, but they will be commonplace in years to come. With this comparison of different technologies in my research, which are suitable for the building’s skin, I developed a set of tools which could be a applied solution for my later redesign of the Q-Port building.

My redesign of the Q-Port building answered the question, aided by my research, how an active intelligent building skin can generate energy and how it can look when technical innovations are transformed into architecture. Key feature of my design is an open public way and an energy generating technology as design element of the façade to unite the urban concept and the energy concept within the façade design: The redesign of the Q-Port building is linked to the historic urban planning strategy to be a green recreational area. The open green public way spirals upwards from the street and guides the people through the building. It dominates the façade design and is key aspect of the climate concept: It is the “Grüne Lunge” of the building and guaranties natural ventilation for the building. The installation of the Media Façade with integrated BIPVs is the other key feature of the climate concept. The perforated glass in the building envelope is only broken by the transparent envelope of the way. The way in the building’s envelope can be seen from the highway or the streets and by this people get interested in the new use strategy of the Q Port building. The installation of a media façade offers a surface for commercial activities and in addition the BIPV modules at the closed façade parts produce energy. This development of an active intelligent energy generating façade will lead to a PLUS Energy design. The green way produces Oxygen as well as thermal energy and is linked to the ventilation concept. This is the next step into a more sustainable future: It generates energy within the façade and unifies the energy demands of the future.

My project, the redevelopment of the Q-Port building, is related to the wider social context: The refurbishment of the Q-Port building has an ecological, social and economic importance. These three aspects reflect my sustainable approach: The ecological relevance of the refurbishment of this old office façade is in the time of climate changes and the dwindling of natural resources the need to safe energy in order to safe natural resources. But also important is the impact of today’s people on the environment for future generations. The economical relevance is the saving of financial resources. The loadbearing structure of the Q-Port building can last for centuries while its facade and technical installations have a life span of not more than 30 years. The demolition of the total building would be a waste of capital. The social cultural relevance of the refurbishment of the Q-Port building’s façade is a high quality environment for safe and healthy living. Moreover, the new use strategy supports the development of the whole city part Brettenzone to a leisure area and enhances its attractiveness.

In conclusion, my approach worked and the transformed Q-Port building has the potential to become localized a `social condenser’ for new communities.