

Sustainable Graduation Studio: Reflection

The main objective of this thesis was to design an integrated solution for energy retrofit of buildings, that is refurbishment of a building for the purposes of reducing its energy consumption, and densification, in this case meaning the purposeful increasing of dwelling area within an urban environment in order to increase density, for a building typology of a defined region of Amsterdam Nieuw-West. Moreover, the context of the thesis derives from the City-zen project, an ongoing research project of the faculty, borrowing its research methods and approaches to frame the research of this thesis. What it required was a coherent research framework with the initial ability to move from a large scale, the urban level, down to the smaller scale, the building scale, and then to secondly be able to use findings from this process to reinform the general research results. This required a starting clarity and knowledge for the specific type of research information that was needed for the different research stages and how it related with one another in a sequential order working progressively towards the research aim.

From the onset of the thesis these requirements of the research framework were lacking these specific definitions producing a research methodology lacking in depth and understanding for the real task at hand. The remedy for this conundrum was to simply do the process and learn about what questions needed answering before being able to move onto the next stage. This is what happened when trying to use the Context Analysis of the project and analyse the potentials in energy savings and densification of the existing building stock. A small sample area from the overall research area was chosen and analysed according to these potentials. In this case, it became clear that before doing such an analysis a criteria had to be defined beforehand to determine what building typology had the 'most potential' and was therefore suitable for densification and energy retrofit measures. The set back to this strategy was that a lot of information and research was carried out but it required doing the process discover that it was not in pertinent alignment with the thesis aim.

The relationship between the research and the design was really explored in the final research phase, the case study design, which, in theory, marked the culmination of the context analysis and literature study with a reference building representing the most suitable typology of the analysis. Using the research of the literature study I was able to make informed design decisions as to what measures could be used in and in what combinations through the use of a design criteria. Nevertheless, it became clear that apart from using the design criteria as a design tool I was missing an overarching set of guidelines, based on all the research done, that demonstrated specifically how certain measures could integrate as a complete retrofit measure for this specific building typology as a whole and not only the reference building at hand. Thereby, unifying the research and answering the research question. This manifested itself as a flowchart, which focusses on the existing typological constraints of the building, demonstrating how design decisions are related to the existing typology and how different measures can be integrated on a more general basis. In other words, it attempts to catalogue the design process in a way that can then be applied to another building from the same typology.