Graduation Plan for AE students

Personal Information

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Studio

Architectural Engineering
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Argumentations of choice of the studio For my graduation project, I have three main fascination: the transformation of vacant office building, the urgent demand of housing market and the trend of customization in the architecture industry. When the three problems combine together, there could be a lot of possibilities in the process and technical potential. Therefore I choose to study in the architectural engineering track to achieve my design goal.

Title

Adaptive reuse of vacant office building with Open Building concept
Graduation Project

Problem Statement
The high vacancy rate of office building in Netherlands has been a serious issues, among all the cities, Amsterdam have been listed in top 3 with highest vacancy rate for many years. Transformation into housing is one of the possible solutions to cope with the problem, together with renovation and upgrading of the existing condition, the adaptive reuse process can also contribute to ease the pressure of the housing market in Amsterdam area. As the structure will remained for the office building, the design quality can be upgraded with the concept of Open Building, in which the structure and the service, interior system is detached from each other, and the “infill” system can be chosen based on the customer’s preference and replaced later as its different life cycle.

Objective
With the concept of Open Building, the research will focus both on the general strategy of office building adaptive reuse in the common vacant office tower while providing a specific solution for the chosen site. The design result will be a multifamily apartment which provides different level of customization to the residents to increase the living quality.

Overall design question
How to implement the concept of Open Building in the process of renovating vacant office building into dwelling project?

Thematic Research Question
What can we learn from precedents solutions and products to elevate the design of Open Building plumbing solution when transforming office building into multifamily apartments to reach the maximum adaptability in floor layout design?

Sub-Research Question:
1) What are the current common plumbing solutions in Open Building project and which one could be best fit into the context of the design project?

2) During the transformation process from office space into multifamily apartment, what is the technical advantages and limitations?
3) Which design aspect should be considered in the comparison between previous solutions? And what kind of criteria should be considered under each aspects?

4) What can we learn from the cross case study to elevate the current solutions?

**Methodologies**

The Research Questions will be answered by dividing the research paper into three phases, each with its own focus. The research framework is illustrated in Figure 1.

In the first part, a theoretical framework will be built by reviewing the literature and case studies of built project that concerned with Open Building Plumbing System Solution. The design limitations during the renovation process will also be studied to understand the technical design context. In the second part, different design aspects and criteria (Fig 2) will be applied in the comparison to understand which solutions or products meet the requirement most. The prototyping and proposals are based on the cross case study process.

**Planning**

P2:

Literature research and space design testing

Main outcome: Presentation program definition, transformation concept space study, space organization strategy. Develop masterplan and building in 1:500 and 1:200

P3:

Detail research on building technology for solutions to the facade and roof detail design. Interior space detail design finalizing.
Main outcome: Develop building design 1:200 and specific part 1:50

P4:
Conclusion to design stage and a development and integration of building construction. Elaborating presentation material.
Main outcome: Finalize master plan, building design, models, rendering, etc

P5:
The final few weeks will allow for refining presentation material.

Relevance
The value of the graduation project in the larger social and scientific framework. Is your project more generic or specific?

Literature