

# REBIRTH OF THE CHURCH

Wooden infills as a solution to vacancy



Reflection graduation studio 2024/2025



# COLOFON

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# 1. STARTING POINT

To better understand this reflection, I will shortly describe the starting point of my research and initial design ideas. In recent years, there has been a significant increase in the vacancy of churches. The long neglect, and in some cases destruction, created the fascination of designing a modular wooden infill that could be placed within the building. The idea behind the infill was that it could completely stand independently and would have no direct connection with the church's construction. Therefore, everything would be reversible without harming any part of the church. The system's requirements are focused on the applicability of the infill within churches. Lightweight, made out of wood, adaptable in size, made as an indoor module, remountable, and the possibility of multiple floors are a large number of requirements of the building system, and also form the basics of the design principles of this project.

# 2. RESEARCH AND DESIGN

## *What is the relationship between research and design?*

My thematic research started with the knowledge that 1530 of the 7110 religious buildings in the Netherlands have been repurposed in the last decade. Most of these buildings are churches; by 2030, an additional 1700 churches will become vacant. Repurposing these buildings is time-consuming, costly, and does not always satisfy the user's needs. Looking into the possibility of applying a modular wooden infill as a temporary solution to church vacancy led to the following outcomes within the research. The criteria for such a system are primarily based on functional requirements and relate to the physical context of production, transport, assembly, and disassembly rather than design goals. These criteria formed the evaluation on which several existing modular systems were analyzed, even though many of these systems all have specific potentials, only one system fulfilled all the requirements. After studying this system within three church environments, it was concluded that it was not designed efficiently enough for these indoor situations. Furthermore, this research concluded that the building properties have much influence on the technical requirements of the infill, and effective placement of functions and minimal material use are essential for optimizing these building systems for this kind of purpose. Ultimately, it was concluded that no infill is explicitly made for repurposing churches. It can be said that a modular wooden system for customizable, remountable, and multistory spaces can be developed, provided that the identified criteria, adaptability, material efficiency, modularity, and integration with existing building requirements, are prioritized while ensuring the preservation of the church architecture.

The transition from research to design led to a different approach than the research itself. After the P2, the focus was not only on the infill itself, but also on the possibility of changing the church. This design process was a different approach than I was used to. Instead of starting with a sketch design and making everything more straightforward, this approach involved constant change between scales and working from church to infill and from infill to church.

### 3. GRADUATION AND MASTER TRACK

***What is the relation between your graduation project topic, your master track and your master programme?***

This graduation project is a topic that aligns with the AE studio approach and the master track's emphasis on integrating technology and exploring circular adaptation strategies. Reusing existing property and repurposing certain buildings are parts of the circular adaptation strategy of Second Life. In other words, the focus of the graduation project is the combination of existing architecture with newly added architecture formed from engineering. This is also in line with the master track of Architecture and the urban context, the building, society, and technology of the infill are all taken into account in the design, making it in relation to the master program of AUBS.

### 4. INFLUENCE OF RESEARCH AND DESIGN

***How did your research influence your design/recommendations and how did the design/recommendations influence your research?***

The conclusions of the research formed the requirements of the infill. While designing the infill itself, the building system was frequently evaluated using the criteria created within the research. Furthermore, the church's technical properties were analysed as part of the research. This also formed the basis of the design. In other words, the research was the starting point of the design and is partly used to evaluate what has been designed and what choices were made. On the other hand, the design required more interventions within the church, as part of the recommendations in P2. This contrasts with the research of developing something reversible and not harming any part of the building. The design itself did not directly influence the research, but other criteria could be created to be more precise in a follow-up research. Different building systems could be more useful than they appear now to change things in a building, with the earlier evaluation within the research. Moreover, some building systems were seen as impossible due to their weight, but could be applicable to building within churches with the right tools. In other words, the research has mainly been a tool for evaluating the designed system, but it also functioned as a discussion on what to do with these kinds of buildings. This led to building changes, which were not part of the design.

### 5. VALUE OF WAY OF WORKING

***How do you assess the value of your way of working?***

Looking back at my approach and the methods I used in my research and project, I can conclude the following: First of all, the techniques and methodology I used worked well in getting the information and conclusions for this project. Of course, the research process could have been more effective if I had obtained the needed information and read through the topics before executing the research questions. Moreover, the formation of the research (methods, research questions, etc.) could have been developed better if it were more precisely structured in the first phase. Secondly, looking back at my approach within the design, I see that working through the different scales worked, but focusing more on the building system instead of the whole design

would have made the process smoother. It could have created a more developed building system at my P3. I still believe that the main schedule of the master has much influence on the way of working. The time spent developing the research and the research itself is too long. The design part would benefit from shortening this part of the graduation studio. Ultimately, I am confident about the research and design strategy and see the flaws in the earlier research stage as a learning experience. Looking back at the research, these flaws are apparent and easily repaired.

## 6. ACADEMIC AND SOCIETAL VALUES

***How do you assess the academic and societal value, scope and implication of your graduation project, including ethical aspects?***

The project has an essential value from an academic and societal perspective. The most important part is to open up to conversation about what to do with these types of heritage, especially on the ethical aspect, how “sacred” these buildings are, and what we can do and what is not allowed. Ultimately, these buildings have been the definition of transformation throughout time, while nowadays, we do not want to change anything. So, the societal question here is how “original” the building is and what is more important, keeping a building to look at, or using it as it was intended by the builders hundreds of years ago. From an academic perspective, the scope is how to repurpose these buildings and how we can give a second life to something that primarily forms as a landmark in the urban context. I still believe it is a fascinating subject and have many different opinions about it. However, opening the conversation and rethinking the use of other buildings are the most important things here. My project in the first phase was more about not touching anything, where, at the moment, some quite radical changes have been made. From a different scope to completely repurpose it and not think about its original function, the design would be more radical and even more controversial, but on the other hand, it would even have more importance on the societal and academic value.

## 7. VALUE OF TRANSFERABILITY

***How do you assess the value of the transferability of your project results?***

The transferability of this graduation project is part of the research and the design. Choosing a recent development as a topic and analysing it through different churches and criteria makes it realistic. Also, the project can be seen as an example of Second Life and as part of the discussion on what to do with this old building. The value of the transferability of this project from initial thoughts to the current developments within the church vacancy has always been significant. Furthermore, within this project, the literal transferability of the infill to other buildings has been part of the design process. A next step within the transferability from project to research and design that others would benefit from in the future is looking into the financial part of the development of this system.

## 8. ADAPTABILITY OF INFILL

### *How do you assess the adaptability of the infill with different functions?*

At the beginning, an important question I asked myself was mentioned as feedback at the presentations. How adaptable is my infill in the end? The first intended functions were public functions such as a food market, food hall, workspaces, etc. Even though the function of housing was always part of the possible functions, it was not in the main scope of the design. After my P2 and especially after my P3, this has been a more critical focus of the design. At the start of my design process, it was unclear how difficult it would be to make a reversible infill with the function of housing within a church. Especially, the climate control and daylight would be a more difficult part than initially thought. So, in this part of the design, I asked myself what was more important. Creating something that would give perfect living conditions, or staying as close to my initial thought of making it reversible. The reversibility was the obvious choice, considering my research and initial thoughts. The conditions to live inside such a building are not entirely perfect, but it can be seen as temporary. The housing function is designed for temporary living instead of long-term housing solutions, which could also help transition to more needed housing in the Netherlands. In the end, I see that with a few changes, it is possible to change the infill from housing to a public building, and therefore, the design is adaptable to accommodate other functions. The tricky part is in the end creating a stable indoor climate.

## 9. REVERSIBILITY OF PROJECT

### *How do you assess the reversibility of the project, how easily is the infill disassembled?*

Between the P2 and P3, the development of a reversible construction had been the primary focus of this project. However, regarding the more finished details, this idea of making it completely reversible had not been developed entirely to its point. So, after the comments on my P3, I reassessed my decisions and looked not only at easily demountable constructions of the floor and walls, but also at the biobased choices within my project. While developing the infill, it is necessary to evaluate if the materials are biobased and if they are easily disassembled and reassembled. Until now, the design choices have been based on the basics and reversible. Still, if we look at the main construction, the whole structure is disassembled from top to bottom, and it is not possible to remove parts on the ground floor without removing parts on the upper floors. While all the inner walls are always easily removable and interchangeable, the main structure is not easily disassembled into parts, but only as a whole. In certain parts, I am confident the system is reversible and easily reusable in a different church. Still, I think it needs a bit more attention to be developed completely and be understandable. This can be addressed in the final phase of my graduation project.

## 10. FINAL PHASE

### *How will the final part of the graduation be filled in?*

The focus of my project after P4 is further developing the infill and illustrating the concept from research to design as well as possible. The goal for P5 is to have a completely designed building system that fulfills all the stated criteria of the study. This is on-hand developing the ventilation system and giving a clear view of the designed construction. Furthermore, the last phase will



illustrate a clear view on appearance, experience, adaptability, and interchangeability of the infill within a church. More importantly, I would like to understand better the possibility of changing certain parts of the infill to another function. This phase will also create a clear presentation with presentable illustrations and models. Moreover, the goal is to make a VR render that can be presented at P5. So, the focus on the final phase is developing the last parts of the design and, more importantly, illustrating the whole process, design, and how the construction works.

