

# HOUSING AS A SERVICE

Setting the standard for affordable living in  
the Dutch wetlands in combination with  
farming and tourism

Keywords: Way of living, Minimalizing not compromising,  
Freedom of use, Housing as a service

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# Introduction

The housing prices have increased to a point that a lot of people are unable to find an affordable home that suits their needs. These raising prices have been caused by multiple factors. Prices of building materials have increased rapidly over the last years. At the same time the housing demand kept rising and the supply has not been able to keep up with this demand. This contributes to the shortage of housing on the market. (Brysch & Czischke, 2022) (Capital Value , 2020)

This research will focus on housing in a new landscape design of Midden Delfland. This landscape design is part of a speculative design exercise of the Delta project. The landscape designs this research focuses on are made by the landscape architect called ZUS. This new landscape requires some changes and give new opportunities for Dutch housing. This proposal of the new landscape can be distinguished in four different types of land: wetlands, peatland, forest, and urban areas. The Advanced Housing studio is exploring how to live in these types of land. This research will be part of that exploration by researching how affordable housing fits in this new plan.

The wetlands of this area are especially interesting because they create a drastic change between the present use and future use of this land. The new use of this land also creates a different ecological system in different areas. For example, a part of the current peatlands will be wetlands in the new plan. That land is currently used for livestock (such as cows and horses), but in the new plan this will not be possible on the wetlands. There are alternatives such as water buffalo's, types of rice, reed or other types of food that grow in wet areas. It's clear that this new landscape plan will require a change in ecology and with that a new type of housing. This research will explore how affordable housing will fit in the wetlands.

Threw analysis of a few sites on the ZUS landscape were explored. The results show that De Zweth is an area with a lot of potential and opportunities as one of the pilot projects from the advanced housing studio. The ecology of the Zweth can be further expanded without destroying the current community.

The personal focus of this research is about working on wetlands. This requires manual labor and creates jobs where people work during certain seasons. The workers will require affordable housing during these seasons. When the work on the farm is less intensive and the seasonal workers are not present, a part of the housing can be used for tourism as well. By combining the two target groups for the housing in the wetlands (tourism and seasonal farm workers) the area will stay active throughout the year. This creates the focus of the research towards affordable housing that is used by seasonal workers and tourism as well.

For these target groups to be able to live in an affordable way, a financial system that fits these residents is required. There are a lot of different systems that focus on affordable housing and influence the way housing is designed. With these target groups a system that allows for more freedom will be a good fit, such as housing as a service. More about this system will be explained in the framework. This system is suitable for these target groups and creates a lot of opportunities for affordable housing in the wetlands. But this raises the question: How can affordable housing be designed to provide housing as a service in the wetlands in a space for tourism and farming?

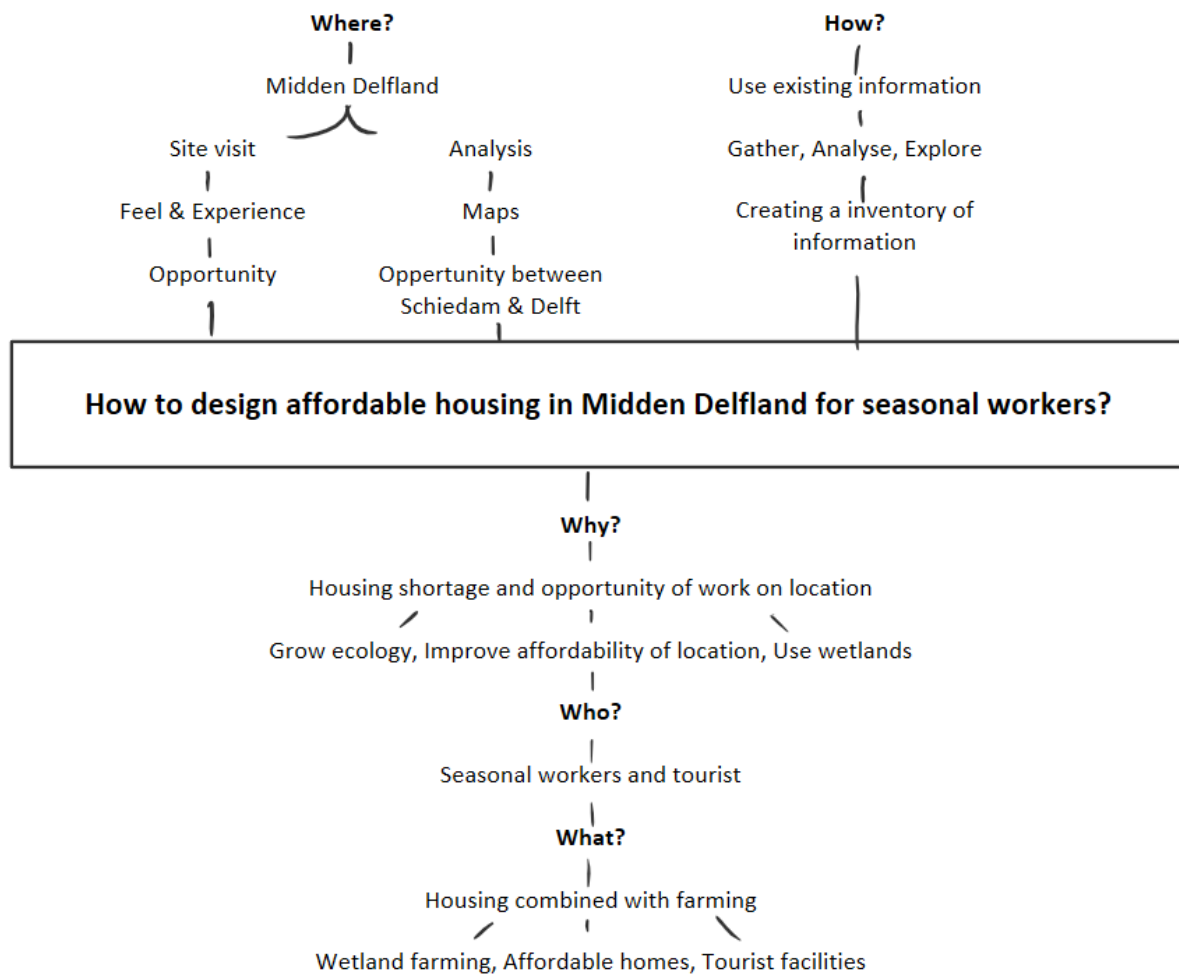


Figure 1 First research diagram

## Theoretical framework

This research focuses on affordable housing, but what affordable housing exactly is, and which position this research will take is important. Those aspects of the topic will be explained here, along with other topics that are important to this study.

### Affordable housing

*"Affordable housing is housing that a household can pay for, while still having money left over for other necessities like food, transportation, and health care. That means that what's considered "affordable" depends on a household's income."* (Local Housing Solutions, 2022)

Dwellings are properties that are exchanged between owners. The value of this property can be determined in multiple ways. The most common one is where the ownership of the property is exchanged between residents for a certain value. This value is determined by the demand for offers on the markets. However, this is not always the case, there are also systems in which the housing value is determined by a cooperative. There are several ways this can be accomplished with financial systems that include renting as well as exchange of ownership. (Brysch & Czischke, 2022)

Architecture also has an influence on the affordability of housing during the design with aspects such as: Building cost, Market value, User energy consumption, Location, Collective living. For example, by creating multipurpose functionality to make efficient use of all square meters and keeping the total amount of square meters low, to keep the market value of the home low.

But affordable housing is not just the value of a home. The income of the household is what determines what the buyer can afford. Therefore, generating an income with the home will also improve affordability. For example, generating more energy than the building uses. It's also possible to design space that the residents can use as a business to sell products.

## Housing as a service

Housing as a service is a type of ownership of real estate property. According to Rafael Presa (Presa, 2019), A lot of residents don't need to own their own real estate property.

*Minimalism their way of life, due to a wide spectrum of reasons. Most popular reasons for that pivot, includes environmental concerns, financial concerns, and the desire to have more time and freedom enjoying life. (Presa, 2019).*

The user of the property pays in real time for what they use, instead of a more traditional and restrictive daily or monthly period. The benefit of this model is that residents have more freedom, and more costs can be shared collectively.

In this graduation project there is a lot of potential for this housing as a service model as well. This brings a lot of design influence. Dwellings are a very personal space. When applying the housing as a service model, the dwellings could become mono apartments, where all the dwellings are alike, and the personality of a home is lost. To avoid this, clear design ambitions need to be formulated. A clear distinction between private use and collective use, as well as ownership, needs to be made. For example, does someone own their own fridge or is there only one fridge in a shared kitchen and with how many dwellings is this kitchen shared or does each dwelling need their own kitchen?

This research will focus on architectural design of the housing as a service concept. Thinking of spatial design, programming, experience, and use. For example, by exploring a large variety of dwellings where the user can choose a dwelling to fit their needs and pay only for the space they use. Perhaps the dwellings need to allow for easy minor adjustments to fit a large variety of possibilities. It might also be possible to include the furniture in the variety. Therefore, the people who will move often are still able to live as they like, without the need for moving their own furniture to everywhere they go. Allowing for more freedom by owning less.

Housing as a service still has financial concerns as well. With this model, the residents are paying the owner of the real estate for the things they use. This could mean the owner of the real estate is able to generate profit on every little thing that is being 'borrowed'. In this study a more cooperative inclusion of the residents is expected, to overcome these concerns of affordability. The overall owner of the housing as a service concept should be combined with a non-profit organization. Perhaps there is not one company that owns all that is being shared to turn a profit. Instead, multiple small businesses can be involved in this shared concept. Where the shared

laundry is a local business and all the buildings are not owned by one individual, but a few buildings are owned by locals instead.

The position this project will take in housing as a service is one focused on a non-profit ownership model. Furthermore, residents should have the freedom to live as they want. Not to be bound by things such as monthly payments. However, the dwellings should be able to spatially fit those different living styles and allow for personal items to create one's own home experience.

## Method

The Advanced Housing studio of which this research is part of, already contains a direction of research with the specific themes that it includes. The method on how the process will approach the topics in different scales will be explained.

With each step, all themes of the studio (living with water, social inclusion, affordability, gender equity, sustainability, resources) will be presented and explored through design. Although in each step, one theme might be more present than the other theme. For example, social inclusion has a lot to do with the programming of the masterplan and the dwelling types, as well as how the dwellings are connected to each other. While a theme such as resources is most present during the step where construction and material will be explored.

### Qualitative Methods

Qualitative research is based on non-numerical data. It may contain fieldwork, mapping, fieldnotes with information about the experience, attitudes, and beliefs. (Pathak, Bijayini, & Kalra, 2013)

The plan by ZUS for the site shows drastic changes. By using a qualitative approach, a better understanding of their approach and the context of the site will be gathered. The site and context in its current form and the site as planned in the design of ZUS will be documented to gather information that is relevant to the approach of designing affordable housing. Mapping and analyzing are a good way to document the large scope of information surrounding the environment of the site. Although it often lacks the feel and experience of the place. Through site visits this feel, and experience can be captured. By sketching, the key components of this experience will be documented. This allows for a more comprehensive analysis to complete an overview of the location.

### Case-Study analysis - morphological analysis

Housing as a service creates complex problems to be explored within architectural design. Morphological analysis is a method that can identify possible relations contained in a multidimensional problem. (Bird, Menzies, & Zimmermann, 2015)

The programming of the affordable housing design also has one of the largest impacts on the living costs and conditions of affordable housing. By finding important relations with this analysis, a clear overview will be presented, with important structures. Therefore, the programming of affordable housing design will be explored with existing projects. Case studies of these projects will be studied and compared. With the information gained from those studies, different floor plans can be tested for the design in Midden Delfland.

## Speculative design method

Speculative design is a way of not only creating things but also ideas. It's to imagine the future of how things could be, by asking the question "what if?" This method aims to start a discussion about what people want or don't want. (Dunne & Raby, 2013)

For the design of this study, the future will be explored with this method. Therefore, the design in the location will be explored by creating variants. In this method, different aspects such as the figure, arrival, form, and the design relation to the environment can be tested. The design will be tested in the landscape, by visualizing the design in the landscape with either sketching or models. This step will also focus on how the residents experience the arrival to the dwellings and how they enter and interact with the dwellings.

## Research by Design

Throughout this study the method of research by design will be used. This method explores the research that may arise from design, a proposal, model, or experiment. By consciously extracting rules about the object, with investigations such as analysis, criticism, selection, and problem formulation. (Hauberg, 2011)

This method will explore aspects such as flexibility. The building structure is an important aspect of flexibility and therefore of affordable housing as well. To find an optimal solution, different alternatives will be explored through design. Building elements and their relation or physical connection to one another goes further into the aspects of flexibility and sustainability of the design, therefore this method of research will also explore the design throughout the detailing of the project.

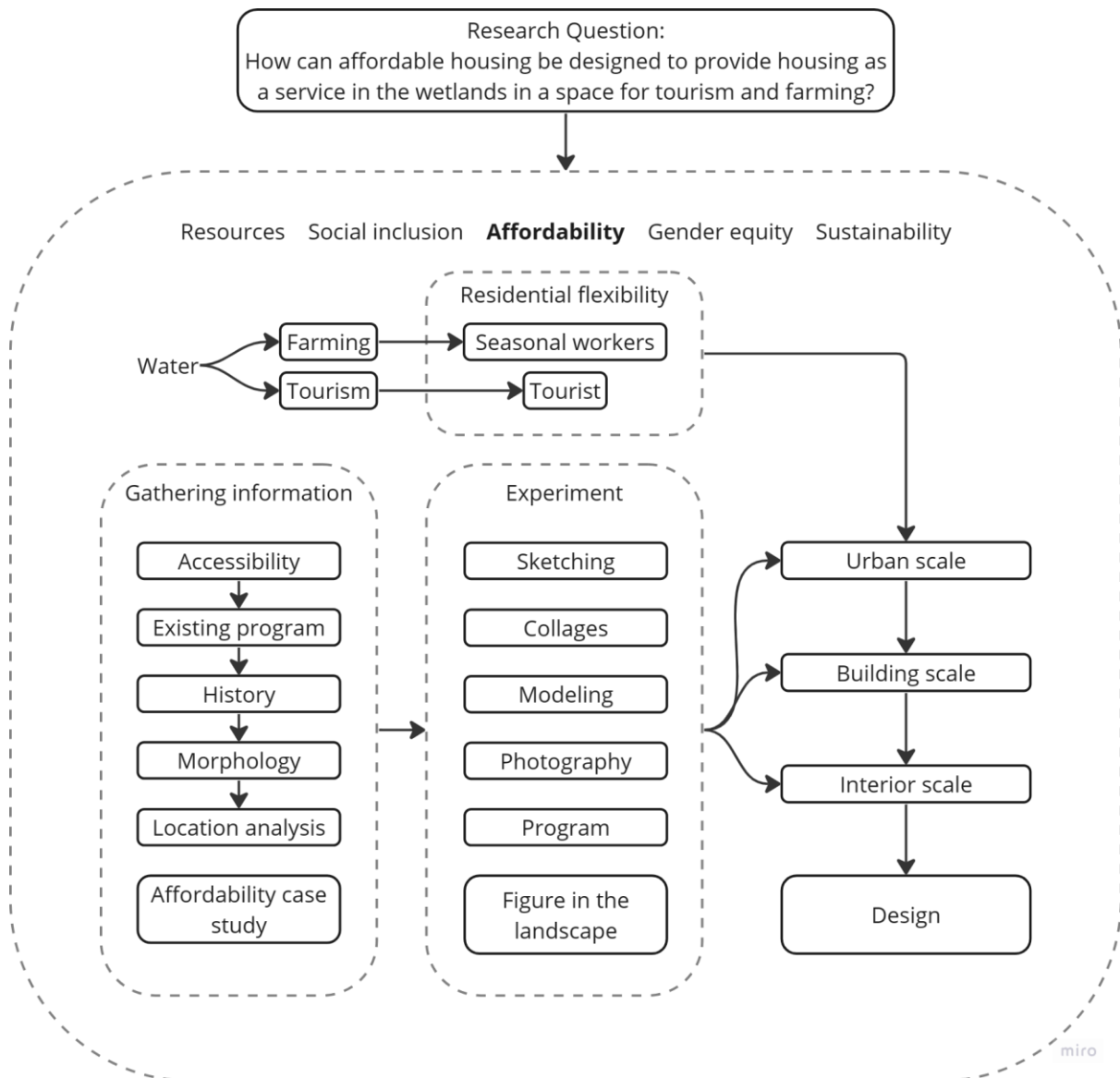


Figure 2 Research plan diagram

## Conclusion

In conclusion these methods help to answer the main question by approaching it in multiple different ways. Gathering necessary information and exploring the potential with the critical position within affordability, by exploring a non-profit housing as a service design principle. The housing as a service principle is not a new concept, but within this project new possibilities will be explored. By combining this principle in the wetlands with a non-profit model in mind.

As a student it was difficult to formulate a position early on in this project, with so many themes of the studio already present. However, this research plan did help me to plan and create an overview for this project. Eventually readings and lectures helped me to formulate a position on which the project will define relevant meaning within current events and in its location.



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