Reflection report

P5

Reducing the energy demand and creating quality for the users with observance of (historical) values in the renovation of the Intervamflats at the Camera Obscuradreef in Utrecht Overvecht.

InterVAM
Camera Obscuradreef
Utrecht Overvecht
VAM system by Intervam

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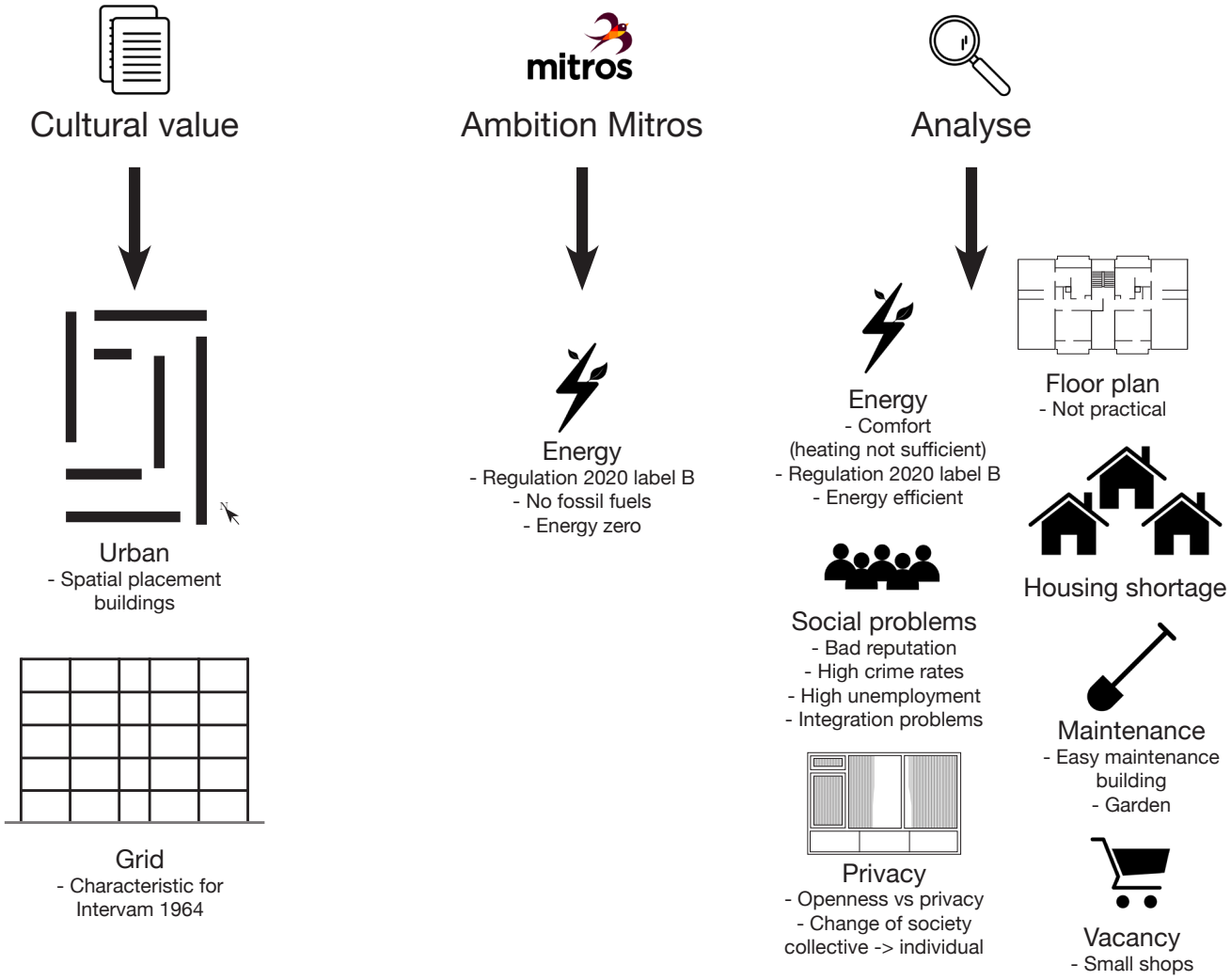
27-05-2017

1st mentor: Lidwine Spoormans (Architectural Design)
2nd mentor Bas Gremmen (Building Technology Design)
3th mentor: Nicholas Clarke (Cultural Value)

Introduction

The graduation studio 'Re-Housing' of the department Herritage & Architecture of the Master of Science Architecture, Urbanism & Building Science at the TU Delft, focuses on the transformation of mass housing in the Netherlands of the post-WOII reconstruction period. In the Netherlands, there is a high number of this mass housing which is in need for renovation in programmatic, technical, and aesthetical ways.

In the post-war period a large amount of building systems have been developed to counteract the housing shortage. Three non-traditional building methods where chosen for further research within the studio. Airey, Intervam and ERA. This reflection on the project deals with the Intervam system. The system was applied from 1962 till the end of the 1970s and mostly has been built in and around Utrecht.



Problem Statement

The Intervam case study located in Camera Obscuradreef, Utrecht Overvecht is property of housing association Mitros. According to legislation, properties of housing association should have on average energy label B in 2020 (Rijksdienst voor Ondernemend Nederland, n.d.). After analysing the case study two main problems could be found which are comfort and energy consumption.

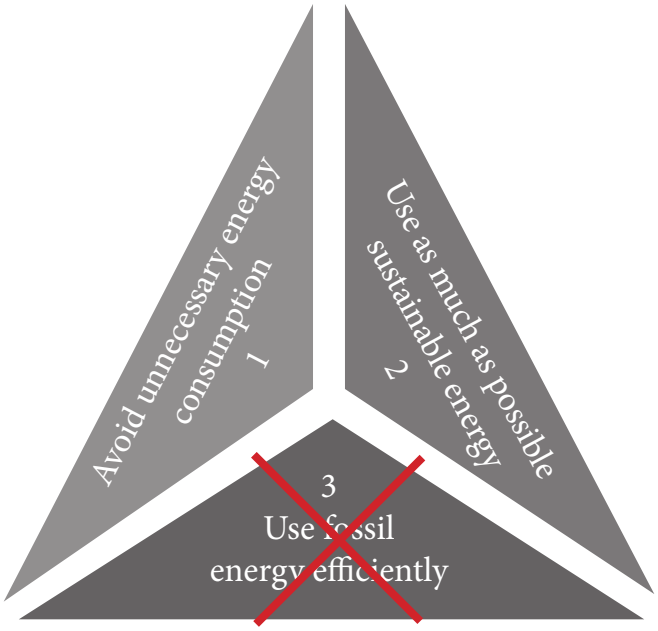
Comfort:
The building is lacking comfort in some areas. For example the floor plan lacks user quality in the layout. The bathroom is only accessible through kitchen and bedroom. And the kitchen and balcony are too small to use for multiple purposes. Privacy is missing on the ground floor. Social problems, such as high crime rates, high unemployment, integration problems and bad a reputation have a great influence on the comfort.

Energy consumption:
The portiekflats from 1964 have on average energy label G (Energie label atlas, n.d.). The buildings are not well insulated and have old heating systems, which results in spaces that cannot be heated sufficiently and have a high-energy consumption.

Concept and Design

To make these portiekflats comply with current comfort standards and legislation, a renovation is needed, which is the binding factor between the state of the art and the architectural & cultural historical values. The topic of the design is mainly about the creating a building, which is energy efficient powered without fossil fuels and creating comfort for the users on different levels. For that purpose, many interventions at different parts and scales are made. The idea is to create a sustainable environment, which enrich the quality of living of the users.

Energie label atlas. (n.d.). Camera Obscuradreef 33. Retrieved from http://energielabelatlas.nl/#Utrecht/Utrecht/17/52.1086/5.1176
Rijksdienst voor Ondernemend Nederland. (n.d.). Beleid en afspraken woningbouw. Retrieved from http://www.rvo.nl/onderwerpen/duurzaam-ondernemen/gebouwen/woningbouw/beleidskader



Trias energetica

Relevance & Relation to the Studio

The case study of Intervam at Utrecht Overvecht, property of Mitros, is one of the post-war buildings that are in need for renovation. In a wider social context one of the main drivers behind these renovations is the Paris climate agreement that resulted in legislation for housing associations. These housing associations own a lot of non-traditional post-war buildings that have to meet legislation on sustainability. Most renovations for these buildings in the Netherlands are therefore dedicated to meet the legislation.

The topic of the studio is transformation of non-traditional post-war mass housing in the Netherlands. The guest tutor of the studio, Anne Lacaton from Lacaton & Vassal main focus is in these renovations is creating quality of living for the users by creating more square meters. By this approach tenants doesn't only benefit from the comfort that comes from the energy part of the renovation but as well the programmatic interventions, which can have a positive effect on the quality of living.

The design for the case study of Intervam match well with the studio and with the idea of the approach of the guest tutor. Because the focus of the design is not only on the energy topic but as well on the comfort of the user. Which are more related with program and aesthetics of the building.

Process

To achieve the goal to create an energy efficient building without fossil fuels and create comfort for the users, research on different scales took place. By trail and error a well-considered design emerged which is based on the starting point, which are developed from the analysis of P1. For the energy concept the Trias energetica has been used in combination with a EPC calculation.