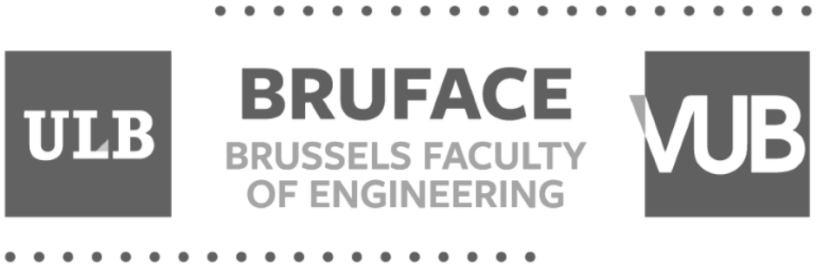

AFFORDABLE TEMPORARY HOUSING ON EMPTY FIELDS

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Academic year

2021-2022

Master thesis submitted under the supervision of

Dr. Eng.-Arch. Niels de Temmerman

The co-supervision of

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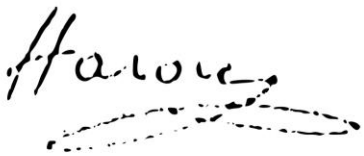

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ABSTRACT

A severe housing crisis is taking place in Brussels, partly due to a lack of affordable housing. This can be put into perspective with the high number of vacant buildings and empty spaces that are present in the city. In order to offer an affordable solution, innovative projects of temporary housing on vacant sites have taken place in Brussels over the last years. The present thesis investigates the opportunities that this housing model can offer in terms of welfare, financial savings and circular economy. It also identifies the obstacles to its ongoing development.

To do so, five case studies are assessed through different dimensions related to affordability and quality. The first three case studies concern innovative temporary housing projects in Brussels. The fourth and fifth cases are examples of companies implementing temporary building on a larger scale. For each case study, the information is completed with the help of semi-structured interviews.

The case studies show that temporary housing on vacant sites can offer opportunities to reduce land costs, to reactivate disused parts of the city, to extend service life and value thanks to transportability and flexibility, and to accommodate homeless people or low-income households. The challenges that developers are facing today are legal constraints, finding available land, technical issues related to grid -connection, current increases in price of materials and fuel, neighbourhood's acceptance, road legislations, and lack of openness towards a more flexible housing market.

KEYWORDS: Temporary housing; Vacancy; Housing crisis; Affordable housing market; Circular economy

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LIST OF ABBREVIATIONS

AIS = Agence Immobilière Sociale

AL = Adequate Livingspace

BCR = Brussels Capital Region

C = Comfort

CA = Capital Accumulation

CLT = Community Land Trust

EWU = Energy and Water Use

FIC = Fair Initial Costs

IDR = Infirmiers de Rue (=Straatverplegers)

MC = Maintenance Costs

N = Neighbourhood

NPO = Non Profit Organization

R = Responsibility

S = Safety

Sc = Scale

SC = Social Contact

SL = Service Life

SMH = Solidary Mobile Housing

So = Solidarity

TCO = Total Cost of Ownership

TCU = Total Cost of Usership

MASTER THESIS OUTLINE

CHAPTER 1: INTRODUCTION

The first chapter introduces the scope of this thesis, by stating the societal challenges that led to it (the problem statement), the research objective related to these challenges, and the methodology of this research.

CHAPTER 2: STATE OF THE ART

The second chapter studies the issues identified in the problem statement of the introduction. This includes the housing crisis and vacancy in Brussels. The state of the art continues by addressing other concepts relevant for the thesis: temporary use, circular economy and affordability.

CHAPTER 3: CASE STUDIES AND EQUITABLE HOUSING FRAMEWORK

The third chapter starts with two lists of international temporary housing projects and what was learnt from them. Then, 5 chosen case studies are introduced, with their description, the reason why they were chosen, and the sources of information that were used for their analysis. The last part of the chapter is about the method that was used to perform the case study analysis, a method that is based on the equitable housing framework.

CHAPTER 4: CASE STUDY ANALYSIS

The fourth chapter analyses the 5 case studies, using the method that was explained at the end of chapter 3. It starts with 3 temporary housing projects in Brussels, following by 2 companies implementing temporary building for residential or non-residential applications. After each subchapter, the cases are summarized and compared.

CHAPTER 5: LESSONS LEARNT

Chapter 5 presents a summary of the different lessons that were learnt from the case studies, and the design guidelines derived from these lessons, to build responsible temporary housing on empty fields in Brussels.

CHAPTER 6: REFLECTIONS AND CONCLUSION

This last chapter is dedicated to limitations of this research, the value of temporary accommodation for those who cannot find a solution in conventional housing, avenues for the expansion of temporary accommodation, future research ideas related to the subject, and a final conclusion.

CHAPTER 1

INTRODUCTION

This first chapter will introduce the scope of this master thesis, by stating the societal challenges that led to it, the research objective related to these challenges, and the methodology of this research.

1.1 PROBLEM STATEMENT

The right to decent housing has been inserted in the Belgian Constitution since 1994.[1] Yet in Brussels and many European cities, there is a serious housing crisis which prevents a part of the population from accessing housing. According to Bruss'Help, the number of homeless and inadequately housed people in Brussels has more than tripled since 2008. Despite some significant public interventions, this number continued to rise over the past 12 years. This is a common phenomenon in many European cities, partly due to a scarcity of medium-priced housing. Affordable housing is thus desperately needed.[2]

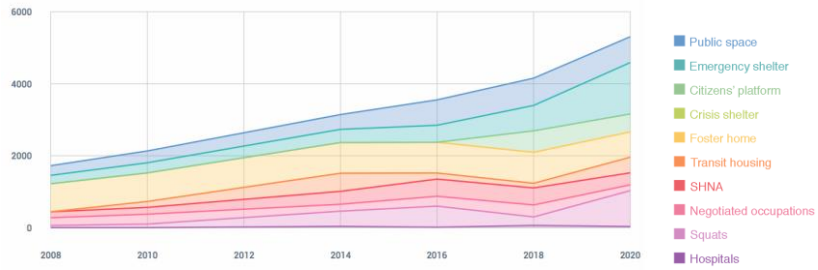

Figure 1: Evolution of the number of homeless and inadequately housed people from 2008 to 2020, Bruss'help

At the same time, it is estimated that there are 6 500 000m² of vacant spaces in Brussels, which represents 4,2% of the territory.[3] Researcher Aurelie De Smet calls these spaces "waiting spaces" or "holes in the city". These spaces are detrimental to the city because they attract vandalism and illegal activities and cause a lack of life in their neighbourhood.[4]

This vacancy is composed of empty buildings and empty fields that can have a great potential for homeless or poorly housed people. A solution could be to use these empty spaces for a limited period and benefit fully from available space in the city to find a quick response for those living in the worst situations. Moving the housing units to other vacant fields when the sites are no longer available could provide a rapid answer to the shortage of accommodation for low-income households. This concept is coming up in Brussels and some projects were already realized. Yet they are all recent and it might be interesting to question their usefulness. These temporary housing units can represent a clever and affordable housing system if they are well-designed, according to the organizational system set-up together with it.

These dwellings also constitute a type of transient housing model that is rooted in a circular economy logic. Indeed, these houses can be transported, dismantled and reused. This makes them circular by nature, encouraging their future conservation and the reuse of their components. They might therefore present an interesting model in a society where sparing materials is becoming more and more important.

1.2 RESEARCH GOALS

As mentioned above, households are struggling to get qualitative and affordable housing in Brussels and other cities and it is thus important to provide ways to address this problem. To do so, different affordable housing alternatives were born during the last decades. For example, Community Land Trust (CLT) proposes to own a dwelling but not the land on which it is built, considerably reducing the purchase price.[5]

Furthermore, Tiny Living offers a simpler lifestyle in a micro-dwelling that is less costly and requires a minimum of materials.[6]

This master thesis will explore another alternative of housing which is temporary housing on empty fields of the city. The aim will be to investigate the opportunities that this housing model can bring in terms of welfare, financial savings and circular economy. In this sense, the thesis will analyze how to design the most responsible housing modules, helped by a grid of different topics related to qualitative and affordable housing.

To do so, this thesis will analyze existing temporary housing to learn about the opportunities they bring, and how they relate to circular building. The goal is to better understand the benefits of temporary housing on empty fields and the challenges to their development in Brussels. This would help not only builders, but also the state and local municipalities in providing more affordable housing solutions.

1.3 METHOD

Like mentioned in the research goals, this thesis is conducted by learning from existing examples of temporary housing, in the framework of a case study analysis.

First of all, research was done on the problematics that were raised in the problem statement, and other concepts that were judged relevant regarding the scope of this thesis. Then, a list was made, regrouping international projects that are linked to the topic of affordable temporary housing on empty fields. This was done to get acquainted with what is happening in the world and to provide a list of references for designers and researchers in the field of temporary housing. From this list, 3 case studies were selected, all with a social character and based in Brussels. Then, 2 companies of temporary building were selected to understand what can be learnt from firms implementing this system on a bigger scale. These 5 case studies were assessed deeply through different topics related to quality, affordability and circularity. More information about the method of analyzing the case studies will be explained in chapter 3. From this case study analysis, lessons were learnt and a list of design guidelines was created to help builders, state and municipalities to implement responsible temporary housing on empty fields in Brussels.

To perform this research, information was gathered through websites, articles and semi-structured interviews that were conducted with stakeholders of the projects and the companies. A representative of the state involved in temporary housing projects was also interviewed to obtain a different perspective. All interviews can be found in the annexes.

CHAPITER 2

STATE OF THE ART

This chapter will study the problematics that were identified in the problem statement. This includes the housing crisis and vacant spaces in Brussels. Then, other concepts relevant for the thesis will be discussed: temporary use, circular economy and affordability.

2.1 BRUSSELS HOUSING CRISIS

The housing crisis

Every 2 years since 2008, Bruss'Help (formerly called La Strada) counts the number of homeless and poorly housed people in the BCR. Even if it is very complicated to know who to count and which method to use, using a continuous method over 12 years allows to observe a trend and to draw some interesting conclusions. The range of persons included in this biennial census are homeless people, spending their nights in the public space or in emergency shelters; people residing in a shelter, a reception centre or a specialized institution; people in precarious housing, temporarily staying with family or friends, occupying a dwelling without a formal lease and/or threatened with eviction; as well as people in inadequate housing, living in a temporary or non-conventional structure, or occupying uninhabitable or overcrowded housing.[7]

The night of November 9th 2020, Bruss'Help conducted the last count and counted 5.313 homeless or poorly housed people. This is an increase of 27% compared to the last census of 2018. This increase is probably linked to the Covid health crisis, but is also in line with a constant increase since 2008. In fact, this number has slightly more than tripled in the past 12 years. The proportion of homeless people included in this figure also drastically increased over the past 12 years, and the number of people living in this most precarious situation is now 5 times higher than in 2008.[8]

In recent years, the number of temporary emergency solutions has increased significantly, often to the detriment of more in-depth solutions, especially with the support of a process of accompaniment to get people out of their situation.[9] Besides, the measures employed by the public authorities are sometimes too superficial and do not address the source of the problem.

Insight in the driving causes of the housing crisis

Understanding the reasons of the housing crisis is crucial.

The first one is the increase in socio-economic inequalities. The working classes and the more fragile parts of the middle class are becoming poorer due to the rise in consumer prices and the increase in rents and housing prices. Low-income households struggle to maintain a decent way of living and in these fragile situations, life events like health problems or family ruptures can easily lead to the loss of a home.[10] Some statistics underline this growing phenomenon. For example, 1/5 of the Brussels population between 18 and 64 years old lives on a social assistance allowance or replacement income. Furthermore, 1/3 of the Brussels population is living on an income below the risk-of-poverty rate[11].[12] In addition, it is hard to measure the effect of the recent Covid crisis but one can assume that a part of the population was strongly affected.

Secondly, the number of migrants arriving in Brussels is higher every year. Some of them want to live in the capital and they have difficulties to access a right of residence. Others are on their way to Great Britain or Nordic countries and do not search any regularization. Asylum seekers from outside Europe who have been refused, or who do not dare to take the necessary steps for fear of being deported, are unable to obtain a status. They do not have access to social assistance and are forced to work undeclared. This makes their situation very fragile, and they easily tip over into homelessness or poor housing. Some newcomers from

the European Union also do not have access to social assistance because they do not meet all the administrative requirements.[13]

Finally, rising rent prices are leading to a lack of affordable housing. Today, only 1% of the housing stock is accessible to the most vulnerable households, i.e. 40% of the population (if we consider that a rent shouldn't exceed 25% of the salary).[14] There is therefore a lack of housing for these vulnerable households, which does not meet the growing demand. The high demand for housing in general influences market forces and causes prices to rise on the private market, while the number of social housing units is under developed. This pressure leads to bigger increases in the lack of affordable housing. From 2018 to 2020, the price increase for the entire housing market was of 1% in average, while it was of 7 to 8% in the least expensive stock.[15] Meanwhile, the waiting list for social housing in Brussels counted 48,675 households in 2019, with a waiting period of around 10 years.[16]

2.2 VACANCY IN BRUSSELS AND TEMPORARY USE

Vacancy

The great lack of affordable housing and social housing can be put into perspective with the high number of vacant spaces in Brussels. It was estimated that there are between 17,000 and 28,000 empty dwellings[17][18] and 1,500,000m² of empty offices.[19] To protest the city's emptiness, a group of organizations invented the 20th commune of Brussels, Saint-Vide-Leegbeek, made up entirely of vacant spaces. According to them, the total surface of empty buildings and wastelands would attain 6,500,000m², surface equivalent to the size of the Ixelles commune.[20] Within this figure, an estimated surface of 4,110,000m² goes to empty fields.[21] This figure is only an estimation. To date, one cannot be sure of the real extent of empty sites in Brussels since no well-founded study has been conducted on this subject.

What can be known is the distribution of land use in Brussels. Brussels Perspective carries out regular studies on the number and surface area of parcels according to their nature. In 2021, 436 vacant lots were identified, corresponding to 862,000m². This figure is smaller than the previous one. It is worth noting that a number of empty lots might also be found in the category 'Other', or in the big surface of non-registered sites.[22]

Nature of the plots	Brussels-Capital Region		
	Number of plots	Area	% of the total area
1. Cultivated land	2.086	492,9	3,0
2. Pastures, meadows, orchards	596	206,2	1,3
3. Gardens, parks	6.686	1.244,4	7,7
4. Woods	219	1.841,1	11,3
5. Wastelands / Vacant lots	436	86,2	0,5
6. Leisure, sports	266	233,1	1,4
7. Cadastral waters	79	86,7	0,5
8. Cadastral roads	890	109,7	0,7
9. Other	5.819	793,6	4,9
Total non-built parcels	**17.077**	**5.093,7**	**31,4**
10. Apartment buildings	502.696	2.052,9	12,6
11. Houses, farms, annexes (e.g. greenhouses)	131.180	2.984,3	18,4
12. Industrial workshops, storage buildings	4.529	664,6	4,1
13. Banks, office buildings	1.230	260,8	1,6
14. HORECA and commercial buildings	16.309	469,9	2,9
15. Public utility facilities	1.316	339,6	2,1
16. Buildings for social and health care	638	229,8	1,4
17. Buildings for education, culture and worship	1.605	551,4	3,4
18. Buildings for recreation and sports	642	194,5	1,2
19. Other	841	31,3	0,2
Total built-up parcels	**660.986**	**7.779,0**	**47,9**
Total parcels registered	**678.063**	**12.872,8**	**79,3**
Non-registered area	**:z**	**3.369,2**	**20,7**
Total area	**:z**	**16.242,0**	**100,0**

Figure 2: Number and surface area (in ha) of parcels according to their nature, 2021, Brussels Perspective

Figure 3: Example of waiting space in the BCR, Aurelie de Smet

This high number of vacancies is related to today's unpredictable and uncertain urban planning. This means that before a project can be realized, it must first go through stages of consultation, negotiation, concept design and planning.[23] From another point of view, the appearance of empty spaces is created by temporal and spatial fluctuations of capitalism. An economic expansion leads to a production of space, leaving an oversupply of space during an economic recession. Empty spaces would thus be the result of a mismatch between supply and demand. This is accentuated by the relocation of activity leaving buildings empty.[24] One could also wonder how much space was left empty because of bankruptcies or reorganizations due to the recent Covid situation. Comparing the need for affordable housing and the number of empty spaces in Brussels, leaves one to wonder if a synergy can be found between both problems?

Temporary use

Empty fields can be harmful to their neighbourhood as they are known to attract illegal activities such as vandalism or squatting. A growing phenomenon in Brussels and other cities allows to avoid these negative effects: temporary occupancy. Individuals install themselves for a given time and decide to give a use to a building or an unoccupied ground. In addition to avoiding the degradation of the place, it allows to provide a space for housing or social activities, and to revitalize a district.[25]

One of the first examples that was organised with public authorities in Brussels is *l'Allee du Kaai*, a temporary project that started in 2014. It was located next to the Brussels Canal, before the erection of a new parc. Their goal was to facilitate the future transition of the place, instead of keeping it unoccupied before its new purpose.[26] Another example is the *See U* project, located on the site of the former barracks in Etterbeek. This project gathers a multitude of activities that take place until the start of the reconversion of the site with the *Usquare* project. Today, it is one of the largest temporary occupation projects in Belgium, bringing together cultural, economic, academic and educational activities.[27]

Figure 4: Temporary occupation - Allee du Kaai (left) and See U (right)

Temporary use for housing

▪ Inside buildings

Another possibility for temporary occupation is that of housing. This is being experienced in different cities as a result of a housing crisis and a high vacancy of buildings and ground. In 2013, the Brussel Housing Code authorised temporary occupancy agreements for social housing, following the increasing number of empty social housing buildings in the city.[28] As a result, social housing companies like *Foyer Forestois* or *Ieder Zijn Huis* have allowed the temporary occupation of some vacant social dwellings, before their renovation.[29]

An international example of the emergence of a more flexible use of urban space is the Chesterfield House in London. This former office building from the sixties was left empty in 2013, because of the relocation of the former occupants and technical obsolescence of the building. At that time, there was also an overproduction of office buildings in the area, as a result the authorities converted the land use from office to housing. During this process and before the construction of a housing project, the building was used for temporary housing for 10 months. This enabled the inhabitants to get temporary access to low-cost housing, the land owners and developers to activate their building, and the local authorities to revitalise the area. Afterwards, the building was converted into two towers of expensive housing that the average households of the district could not afford.[30] One can therefore question the intention of the developers, their primary aim being to make profit, using the charitable status of temporary occupation to facilitate the process of reconversion.

More recently in Brussels, some associations created modules of housing inside unoccupied buildings, also called 'box in the box' systems. These projects are using temporary occupation contracts of 2 years. The goal is to move and reuse the houses in other empty buildings thanks to their transportability. The first

example is the Woonbox project, managed by the npo Saamo. This project includes the creation of 10 housing modules, where 34 people previously living in poor conditions are given a temporary accommodation. The modules are designed by professionals as kit-of-parts to assemble and disassemble into different buildings.[31] The second example is the Home for Less project, managed by the npo l'Ilôt, with the collaboration of architecture students. In this project, 4 demountable modules were constructed to fill in unoccupied office buildings. This second project is part of an active pedagogical dynamic where students are led to imagine and build their creations, with the different constraints that apply to the interior of unoccupied buildings.[32] The first project might present a more rapid and qualitative model while the second is anchored in a societal dynamic that involves the students. They become creators and builders, eliminating the need for costly labour.

Figure 5: Temporary housing inside vacant buildings - Woonbox (left) and Home for Less (right)

- On vacant land

Temporary housing modules are also being placed on wastelands. The goal is to use vacant fields and transport the modules to other locations when the field is no longer available. This is possible by demounting and remounting them or moving them in their entirety with the help of a truck or a trailer. In this way, land costs are saved by taking advantage of available spaces, while activating neighbourhoods. An example of this in Flanders is the transitional social housing project of *A2D Architects 2 Design* and *ModuleHome*. This one is an affordable, compact and movable module made of sustainable materials.[33] The module is completely pre-assembled in a workshop and brought to site in its entirety. It is considered circular as it is transportable, made of circular materials and there is a responsible management of water and energy. A module is also considered affordable thanks to its small size and the strong collaboration between A2D and ModuleHome.[34]

Figure 6: Transitional housing project by A2D

This typology will be further discussed in chapter 3, with examples from Brussels.

2.3 OTHER FORMS OF TEMPORARY HOUSING

The examples that were seen in the previous subchapter show that it is possible to use temporary available space to implement temporary housing modules. This transient kind of housing is not something new, as it was already used throughout history and is being implemented today for different reasons. People who use temporary accommodation can be classified into two groups. The first group chooses temporary housing by choice; people living a nomadic life, workers constantly traveling, people at a transition of their life like starters, divorcees or seniors. The second are those who need to be rehoused urgently; homeless people, victims of natural calamities, and exiles from war-torn countries.

Temporary housing as a choice: Nomadic communities

Already thousands of years ago, nomads were living a transient lifestyle. The "pastoral" nomads travelled from pasture to pasture, to sell their game, but also simply because it was their way of living. Their paths could diverge depending on their search for food, wars or climatic changes. Simplicity was very important to them, and this meant a strict minimum of possessions and very light housing. These dwellings were designed in a very intelligent way, using developed natural techniques. Among the types of housing, there were light dismountable dwellings, allowing quick and easy construction, such as huts or tents. But there were also the so-called mobile habitats, which had wheels so that they could be moved directly, such as carts, trailers, or caravans. This nomadic habitat was designed to last, and to follow humans through the ages, repairing worn parts.[35] Today we still see remainders of this nomadic lifestyle in alternative housing systems like caravans or light dismountable dwellings such as tiny houses or yurts. With the desire to live more soberly due to environmental concerns, these transitory houses are growing in number. However nomadism is often disapproved and hence considered as a societal movement that must be controlled, complicating the implementation of these housing models in an urban context.[36]

Temporary housing as a need: Natural disasters

The last decades, the number of natural disasters has drastically increased due to climate change. This is causing big impacts on the built environment. To provide a rapid solution to rehouse disaster victims, temporary housing is used. The aim is to construct easily and fast to avoid homelessness. After disasters, the goal is also to provide shelter to people during the recovery of their damaged house or the construction of their new permanent house. Two types of temporary, prefabricated units can be identified. The first ones are called ready-made units: they are completely produced in factories and transported on site. The disadvantage of these units is requirement for heavy transport systems. The second type of temporary housing units is called kit supplies: they have small elements that can be assembled on site. Their advantage is that they are small, light and easy to handle. Studies have shown that the local community is also able to participate in the construction. In addition to reduce costs of labor, this can help recovering a strong community spirit, sense of pride and well-being.[37] These housing units after disasters can be considered unsustainable if the shelters are thrown away after their temporary use.[38] However, if they are relocated and repurposed at other locations, it can make a lot of sense and it will serve as a source of inspiration for this study.

2.4 CIRCULAR ECONOMY AND AFFORDABILITY

Using temporary housing units in a circular way might be an opportunity to provide a sustainable and affordable solution.

Today, a transition towards circular building where materials are re-used in a continuous loop, is becoming vital. But the benefits of circular economy are not directly visible for everyone. To really implement it in society, people must see opportunities in it, as reusing can sometimes be time-consuming and cost ineffective on the short term. One opportunity could be the financial gains that some circular design strategies like reusing or adapting may offer in the long run. In addition to the positive impact of circular building regarding sustainability, designing more circular might thus be a way to provide more affordable housing systems.[39] However today there is no clear answer on how to exploit circular economy for more affordable housing. For temporary housing, easy transportability and reuse present circular strategies that could offer an affordable model throughout the lifetime of the housing modules

CHAPTER 3

CASE STUDIES AND METHOD

The third chapter will start with two lists of international temporary housing projects, explaining what was learnt from them. Then, the 5 chosen case studies will be introduced, with their description, the reason why they were chosen, and the sources of information that were used for their analysis. The last part of the chapter is about the method that was used to perform the case study analysis, a method that is based on the equitable housing framework.

3.1 INVENTORY OF INTERNATIONAL TEMPORARY HOUSING

This subchapter will present the list of examples that was made, regrouping international projects that are linked to the topic of affordable temporary housing on empty fields. This was done to get acquainted with what is happening in the world and to provide a list of references for designers and researchers in the field of temporary housing. The first part will present residential projects and the second part non-residential projects.

Residential

There are many examples of temporary housing projects throughout the world. To situate this research and to help researchers in the field of temporary housing, a list of international temporary housing projects was made. Table 1 shows part of this list, and the entirety of it can be found in Annex 1. The examples that are listed were chosen if they were considered valuable and if they were linked to minimum 2 of the following aspects: affordability, temporary, empty fields, modularity, circularity. They were listed in the form of a table in the software Notion, with an indication of their nature, the year they were built, their location, their principal characteristics, and an URL link for further information. In the fifth column, the characteristics of the projects makes it easier to filter them in function of specific themes. This list is regrouping 40 temporary housing projects or companies implementing temporary housing.

Name	Nature	Year	Place	Topics	ref
Solidair Mobiel Wonen : SwotMobiel	social project	2022	Brussels (Jette)	Affordable Housing, Dismountable, Empty Fields, Flexible, Prefabrication (modular), Social Housing, Temporary Housing	https://solidairmobielwonen.be/fr/
Loftcube	company	since 2003	Germany		https://loftcube.net/living
The Mobile Factory	social project	2015	Haiti	Affordable Housing, Circular Economy, Emergency Housing, Prefabrication (modular)	https://themobilefactory.org/plugplay/

Table 1: Fragment of list of international residential temporary housing projects

Creating this list made it clear that there is a growing trend towards temporary and modular forms of housing. Specialised companies are emerging, producing transportable housing modules. Low-income people like starters or status holders are often the target customers.

Searching for projects also made clear that there is a lot to learn from the Netherlands. From 2017 to 2020, roughly 7000 transportable homes were built in the Netherlands, representing 10% of the total production at that period.[40] The country has a more advanced philosophy in terms of flexibility in the housing building environment. For example, De Groot Vroomshoop, De Meeuw and Heymans are big companies that are implementing a flexible housing concept for social housing. Their flexible system is claimed circular as it is easy to move, return and reuse buildings and components. However there are still many challenges that they have to cope with, since the concept is quiet new.

Non-residential

Something that is less new is temporary buildings for non-residential applications. Many companies have been experiencing with modular and flexible techniques for temporary buildings. Study in this fields could thus provide interesting insights for the implementation of temporary housing.

For the same reasons as the previous list, a second list was made regrouping 20 temporary building companies, in Belgium and other countries of the globe. Part of this list can be found in Table 2, and the complete list can be found in Annex 2. The country of each company is indicated, with an URL link to access the company site.

Name	Place	ref
Cougnaud services	FRANCE	https://www.cougnaud-services.com/solutions/batiment-modulaire/le-batiment-temporaire/
KT modules	LITHUANIA	https://ktmodules.com/
Warsco units	NETHERLANDS	https://www.warsco.eu/
Zovos Eko	SLOVAK REPUBLIC	https://www.zovos-eko.sk/en/
Europa Prefabri	SPAIN (Madrid)	https://www.europa-prefabri.com/fr/

Table 2: Fragment of list of international non-residential temporary building companies

3.2 CHOICE AND INTRODUCTION OF CASE STUDIES

This subchapter will introduce the 5 case studies that were taken from the previous lists. First, 3 case studies of temporary housing on empty fields. Then, 2 case studies of upscaled examples of companies, the first one specialised in temporary building in Belgium, and the second one about temporary housing in the Netherlands.

Temporary housing projects on empty fields in Brussels

In 2018, inspired by the urgent housing need and the high vacancy in the city, the minister of housing in Brussels launched a call for tender for innovative modular housing in buildings or unoccupied sites.[41] This pushed associations to develop alternative ways of housing, with the help of different stakeholders. As a result, 5 projects were chosen: 2 box in the box systems and 3 modular units on empty sites. The 3 modular projects on empty sites were chosen as case studies: the SwotMobiel project by Solidair Mobiel Wonen, the housing modules project by the npo Infirmiers de Rue, and the Modulo project by the npo Diogènes.

- ### Case study 1: Solidair Mobiel Wonen – SwotMobiel project

Sources of information

Web Pages: Solidary Mobile Housing virtual exhibition[42], Saamo[43]

Journal articles[44] [45]

News articles[46]

Book section[47]

Video: Solidary Mobile Housing book launch event[48]

Interview with Geraldine Bruyneel from npo Saamo (Annex 3)

Project description

The first case study is the SwotMobile project, from the Solidary Mobile Housing action. This project is born within a big co-creation process between different actors : the npo SAAMO Brussels; the future inhabitants, 8 homeless people; the KU Leuven students, architects; and researchers. By doing this, their goal was to strengthen social inclusion and citizenship. First by empowering the homeless people that co-create their future house, and helping them through social guidance and skill building. And also by building a solidary living community with different actors and stakeholders. After this co-creation process, they obtained a design for their housing module, an affordable, qualitative, flexible, and solidary dwelling.

Figure 7: Collective space SwotMobile project, Saamo

Why it was chosen for this research

This example was chosen because it is one of the projects of temporary housing in Brussels that was subsidised by the minister of housing back in 2018. The design method that is used is also quiet innovative, and the housing module that is created respects the housing codes. It was chosen for this case study because it was possible to visit the modules, and interview one of the stakeholders, a representative of the npo Saamo.

- Case study 2 : Infirmiers de Rue – Housing Modules project

Sources of information

Web Pages: Infirmiers de Rue/Straatverplegers[49], Citydev.brussels[50] [51]

Report[52]

RTBF reportage[53]

Interview with Maxime Bonaert from npo Infirmiers de Rue/Straatverplegers (Annex 4)

Project description

The second case study is the one of the npo Infirmiers de Rue/Straatverplegers. They started a test phase in 2018 with the placement of 2 modules on a site lent by Citydev brussels in Schaarbeek. After staying 2,5

years with already 2 experiences of living, they had to relocate themselves. During the summer 2021, the units moved to another site of Citydev, in Forest.[54]

In 2018, the 2 modular homes were owned by different organizations involved in the 400Toits/400Daken campaign in Brussels, whose goal was to rehouse homeless people in the BCR. One unit, the Wald Cube, was from Infirmiers de Rue (IDR). The other unit, Moving-Nest, was from Habitat & Humanisme (a public utility foundation). Now, IDR is the only responsible of the project. They moved from the Schaerbeek site when they got a permit to implement the modules in Forest and Anderlecht, the first communes to provide a permit for these types of modular houses. Today, 4 units are on the forest site, and 2 units will come soon. The method of IDR is to completely prefabricate the units and bring them in 1 or 2 pieces to the sites. Their goal is to create a complete project that integrates the most vulnerable homeless people, activates empty land in the city, and speeds up the building of high-quality and affordable homes.

Figure 8: Modules of Infirmiers de Rue/Straatverplegers on 1st site (left) and 2nd site (right)

Why it was chosen for this research

This example was chosen because it is also one of the projects of temporary housing in Brussels that was subsidised by the minister of housing in 2018. Like the previous example, the housing modules are respecting the housing codes. It was chosen for this case study because it was possible to go the site in Forest and visit one module, and interview one of the stakeholders. What was interesting with this case study is that the units already experienced a relocation once.

- ## Case study 3: Diogènes – Modulo

Sources of information

Web Pages: Agence Immobilière Sociale de Saint-Gilles (A.I.S.)[55] [56], Diogènes[57], Catho Bruxelles[58] [59] [60]

Press release[61]

News article[62]

Interview with Aline Strens from npo Diogènes (Annex 5)

Project description

The third case study, called Modulo, is another project of temporary modules on empty fields in Brussels. Different stakeholders are involved: the Social Real Estate Agency Verhaegen who is the owner of the units

and who is signing the contracts; the npo Diogènes who is the social partner that is choosing and following the candidates; and Mokit architects who are the designers. A fourth stakeholder, the ISFSC school, is joining with a research to evaluate if the concept is worth to develop further, and to understand the impact on the homeless people.

Modulo started in 2020 with 3 units on a site around a church in Uccle. This field was available before the start of a real estate project because the church was going to be reaffected. In 2021, the 3 units were moved to another site next to a church, in Jette. While IDR's strategy is rather to find land through the landowner Citydev, here it seems that Diogenes is linking up with the church to benefit from the garden spaces that are often found around them. This is part of the Bethleem program which aims to make access to housing possible for all by valorizing the heritage of the Catholic Church. Like the first example, the units are demountable and re-mountable instead of mobile in 1 piece like in the second case.

Figure 9: Modulo project of Diogènes on 1st site (left) and 2nd site (right)

Why it was chosen for this research

Again, this project was chosen as another example of temporary housing in Brussels, being one of the innovative projects the former minister of housing of brussels subsidised in her call for tender in 2018. Secondly, it was possibility to visit the site of the modules, and to interview a representative of the npo Diogènes. Like the previous example, they already experienced a relocation. Like the two first examples, they are respecting the brussels housing codes.

Upscaled temporary building companies for non-residential and residential applications

After studying these 3 cases, it will be interesting to learn from companies producing temporary modules on a larger scale, for non-residential or residential applications. Here, it is about the commercialization of this type of module in a profitable way. The question is to understand the philosophy of the companies and what can be learnt from it to implement temporary housing modules in Brussels, providing an affordable housing alternative.

- Case study 4: De Meeuw (non-residential)

Information used

Web Page of De Meeuw[63]

Youtube account of De Meeuw[64]

Concept book De Meeuw Nezzt[65]

Interview with Jurgen Van Muylder and Ken Smets from De Meeuw Belgium (Annex 6)

Short description

De Meeuw is a building company that was born in 1929 in the Netherlands. Today, it is active throughout Europe, with offices in Belgium, the Netherlands, Switzerland and Romania. The buildings of De Meeuw are modular and flexible, and can have a permanent, semi-permanent or temporary character. The company is active in different sectors : Healthcare, Business, Education, Construction & Industry and Residential.

Figure 10: De Meeuw

Why it was chosen for this research

This company was chosen because it is an example of firm producing temporary building. The company is more active in the production of non-residential buildings. However in the Netherlands they are developing the housing sector with their home label De Meeuw Nezzt. This is not the case in Belgium but we can learn a lot from their modular construction model for other types of buildings as well. It was also possible to interview two stakeholders of the firm.

▪ Case study 5: Uuthuuske (residential)

Information used

Web pages: Uuthuuske[66], The New Makers[67], So You Think You Can Build[68], Nationale Houtbouwprijs[69], Aalten[70]

Video reportage of first Uuthuuskes in Aalten[71]

Journal article[72]

Interview with Margot Vreman, project leader of the first Uuthuuskes in Aalten (Annex 7)

Short description

Uuthuuske is the name given to a specific house imagined by The New Makers housing corporation. This company was born in 2014 and is designing, detailing, and building flexible housing solutions using digitalisation and circularity. It is based in the Netherlands. An Uuthuuske is a transportable, circulair dwelling that takes advantage of temporarily available sites. The goal is to provide a rapid answer to the housing need, with qualitative housing at lower prices. This can be an ideal accommodation for anyone with

a low income who wants to settle down in the short term, such as young adults, elderly people, or anyone in urgent need of housing (immigrants, divorcees, etc.). In July 2021, Uuthuuske won the 'So You Think You Can BUILD' concours. This was a competition in the Netherlands meant to create sustainable, circular and affordable housing concepts for one or two people. 3 housing companies won the competition, including Uuthuuske, out of 94 participants in total.

Unlike De Meeuw, Uuthuuske is very recent since the first Uuthuuskes were built in the Dutch municipality of Aalten in May 2021.

Figure 11: Uuthuuske

Why it was chosen for this research

This project seemed very interesting since it represents a commercialized model of temporary housing on vacant land. It may therefore be interesting to analyze the company's strategy in order to draw inspiration from it to encourage temporary housing in Brussels.

Unfortunately it was not possible to interview the company, but it was possible to interview the project leader of the first Uuthuuskes in the Dutch municipality of Aalten.

3.3 METHOD: EQUITABLE HOUSING FRAMEWORK

This subchapter will explain the method that was used to analyze the case studies. After explaining what this equitable housing framework is, the different dimensions that compose it will be detailed. The following point will explain how this framework was used, and how it was derived to a chart. Then, the qualities that are subdivided in the chart will be explained more precisely. Finally, some further additional reflection methods will be explained.

This analysis was done with the help of the Equitable Housing Framework, an assessment method for affordability and quality of housing projects, designed by Margaux Lespagnard within her PHD at the VUB. It is a circular grid with 15 different themes related to living, financial aspects, the dwelling in itself, and the use of the dwelling throughout its service life. These different dimensions can have a big impact on the quality and affordability of a project. The following paragraphs will explain the 15 dimensions in more detail.

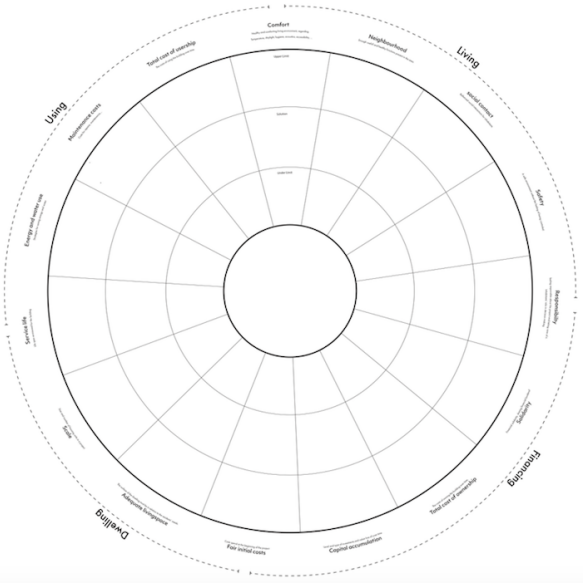

Figure 12: Equitable housing framework, Margaux Lespagnard

Dimensions

Living

Comfort. This first dimension is about well-being in a comfortable environment. This can be achieved through a certain degree of thermal comfort, sufficient natural light, a good hygiene, consistent sound insulation, qualitative materiality, accessibility for people with disabilities, …

Neighbourhood. The next one focusses on the interaction with the neighbourhood. This means living in an environment that shares sufficient presence of public facilities such as public transport or parks, but it also considers the influence a project can have on the neighbourhood.

Social contact. This entails achieving a balance of interactions between residents and with visitors. For this, it is important to organize a good management of the boundary between public, shared and private spaces.

Safety. Being at home means feeling safe and secure. That's why it's important to provide a home that excludes dangers, without oppressing the inhabitants with too invasive security systems. The type of *neighbourhood* can also play an important role in safety.

Financing

Responsibility. Residents and stakeholders may have different roles throughout the project, and may contribute in different ways. Their involvement throughout the project will determine how responsible they feel towards it. This is related to financial aspects, but also to the contribution of different people to the living environment.

Solidarity. This refers to the financial involvement of all stakeholders, and potential external support. Sometimes it is possible to help some users who are struggling more, in different ways.

Capital accumulation. The goal of capital accumulation is to increase the value of an initial investment. For real estate, that can happen through appreciation, when the value of a physical assets grows over time.[73]

Total cost of ownership. Owning a building costs money over time. You must maintain the building, repair certain things, and pay taxes in the case of housing. For example, these costs could be lower if maintenance is easy.

Dwelling

Fair initial costs. Also the initial costs are of particular importance. They are spent at the beginning of the project, and can be higher or lower depending on the design and construction methods, or the chosen materials.

Adequate livingspace. A space must be large enough for a household to feel comfortable. Obviously, this size is different for everyone. A balance must be found between a small footprint and generous interior space.

Scale. The size and number of housing units is also related to the scale of the project. Some financial or ecological strategies are more advantageous to put in place for small-scale projects, while others are more advantageous for large-scale projects.

Using

Service life. The life expectancy of a project is an important issue. Linked to this, it is interesting to consider the future evolution of the project, and its possible future adaptations.

Energy and water use. During the lifetime of a building, water and energy will be used by the inhabitants. This dimension focuses on the measures that are put in place to manage these flows.

Maintenance costs. Building maintenance is an issue that needs to be addressed. The question is who is responsible for the costs of maintenance, and what strategies should be used for adequate maintenance. This dimension is linked to the *total cost of ownership*.

Total cost of usership. This dimension will be different from the *total cost of ownership* in the case of renting. In this case, there is a reflection around the rent that users must pay every month. This price will also often depend on the water and electricity consumption. There is thus a link with *energy and water use.*

Why and how it was used

This assessment method was used to analyze and compare different case studies. By filling in a grid, the point was to understand what design decisions were taken for each dimension of the equitable housing frame. From this, the different qualities of these design decisions were searched to understand their benefits in terms of well-being, affordability and circularity.

For each case study, the circular grid was first completed on a Miro board thanks to available web info. Then, semi-structured interviews were set up with the stakeholders of the case studies and the grids were completed further. A circular way of representing allowed to arrange the dimensions following the angular

coordinate. The radial coordinate allowed to play on the importance of the elements that are put in each 'slice' of dimension. Here, this hierarchy was set up by dividing the circle into 3 rings. The top ring representing the main wish or constraint, the bottom ring representing another less important wish or constraint, and the middle ring representing how these wishes and constraint were answered through design decisions. The middle ring was thus a balance between the upper limit and the lower limit.

Let's take an example with the first case study. A semi-public landscape will be designed between the housing units. In the grid, this is represented in the 'social contact' dimension since it is about social interactions. The upper limit (further from the center) shows how they wanted to create solidarity between inhabitants. The lower limit is the wish of privacy of the inhabitants. To answer to this, the solution, in the middle ring, is to create a semi-public landscape, with private and public spaces.

Figure 13: Detailed view of equitable housing framework method

This method allowed to become familiar with the cases and to understand their constraints. However, the method had some limitations because it was not always possible to represent lower limits and upper limits. It was also not always necessary to prioritize some design decisions over others. At one point, things got too complex and it became difficult to understand links by looking back at the grid after some time. Therefore a simpler grid was created in order to present things more clearly, without hierarchization.

Equitable Housing Chart

The second assessment method is the opposite of the first. Instead of starting from the constraints and desires of the users to arrive at the design decision, it starts from the different decisions that have been made, and the qualities are derived from them. This way of analyzing the case studies will enable to see what design decisions provide the best results.

For each dimension, different design decisions were written, and 3 type of qualities were derived from them. Qualities in terms of well-being of inhabitants, affordable qualities, and circular design qualities.

	DIMENSION	DESIGN DECISIONS	DESIGN QUALITIES			LEVEL OF IMPORTANCE
			Wellbeing	Affordability	Circularity	
LIVING	Comfort					
	Neighbourhood					
	Social Contact					
	Safety					
FINANCING	Responsibility					
	Solidarity					
	Total Cost of Ownership					
	Capital Accumulation					
	Fair Initial Costs					
DWELLING	Adequate Livingspace					
	Scale					
	Service Life					
USING	Energy and Water Use					
	Maintenance Costs					
	Total Cost of Usership					

Table 3: Equitable housing chart

Qualities

Wellbeing

The wellbeing quality represents the added value of the design decision for the inhabitant, contributing to his well-being. It is important to keep in mind that this added value will be more important for one person than for another. In the grid, this quality can also represent an added value for the welfare of the neighbourhood or society in general. In the case studies, this quality is the most thought of by the stakeholders.

Affordability

The second quality, affordability, concerns cost-savings that design decisions entail. Sometimes the decision was made specifically to achieve that quality, sometimes the decision was made partly for that, and sometimes that quality is a consequence that was not even thought of by the stakeholders.

Circular Design Qualities

The circular design qualities that were used are the ones that were developed by researchers of the VUB. The purpose of each one of them is to encourage the reduced use of our resources, by anchoring them in a circular process rather than a linear one. These qualities are taken from the manual '*Building a Circular Economy : Design Qualities to Guide and Inspire Building Designers and Clients*'.[74] The following paragraphs will take the qualities as they are in the manual. For each one of them, the benefits will be explained.

Reused. 'Use building parts and components already present on site or reclaimed elsewhere.'

Benefits : Reusing objects and components extend their use over time. If the components are reclaimed on site, there is also less transport and less local nuisance.

Recycled. 'Look for building components made of low-value by-products or waste materials.'

Benefits : Recycled materials means resources that are spared, an environmental impact of constructing that is reduced, and a decrease of waste incineration and landfill.

Renewed. 'Use materials that are replenished continuously by responsible agriculture and forestry.'

Benefits : Renewable materials will always be available. Some of them can even provide a temporary storage of CO_2.

Compostable. 'Choose materials that can be degraded into natural substances biologically.'

Benefits : Degradable materials can convert into water, CO_2 or biomass, to be reused for other purposes.

Safe and healthy. 'Use components that do not harm the environment or humans during their use, reuse or recycling.'

Benefits : The utilization of healthy materials can facilitate their future reuse, remanufacturing and recycling.

Pure. 'Prefer components that consist of a single material instead of a blend.'

Benefits : Materials that are not altered are easy to recycle or remanufacture.

Durable. 'Use components that resist the wear and tear of use and reuse.'

Benefits : The value of durable, qualitative materials is kept over time. These are easy to disassembly and reuse.

Simple. 'Go for low-tech, legible solutions rather than complicated ones.'

Benefits : Understanding a system easily facilitate future adaptability, maintenance and repair.

Manageable. 'Design building components that can be grabbed, moved and handled easily.'

Benefits : Handling components easily facilitate future adaptability and reuse.

Accessible. 'Integrate components so they can be reached and recovered without much effort or damage.'

Benefits : If components are accessible, they are easy to reach and recover without damage, and easy to replace.

Reversible. 'Make it possible to undo connections without damage to the components they join.'

Benefits : Building parts with reversible connections are easy to disassemble and to recover.

Independent. 'Assemble components so they are structurally, functionally and geometrically separated.'

Benefits : Independent components are easy to disassemble without touching or removing other components. With this method, it is also easy to repair, replace and adapt.

Compatible. 'Use building components that can be interchanged and (re)combined.'

Benefits : A compatible system enables to recombine components easily and to reuse them.

Multi-purpose. 'Design buildings and spaces that support changing needs and requirements without alterations.'

Benefits : Spaces that are flexible in use can support changing needs without intensive refurbishment, and this can extend the life cycle of a building.

Varied. 'Introduce diversity rather than a one-fit-all solution.'

Benefits : Proposing different typologies in one building can touch a broader audience and encourage people to relocate themselves instead of refurbishing the buildings, it can also extend the service life of the building.

Location and site. 'Recognise and develop the qualities of a place responsibly.'

Benefits : By bringing value to a site, it can remain attractive over time. This can encourage the maintenance and redevelopment of the building and its surroundings in the future.

Additional reflections

It is important to precise that in reality, things are less rigid than this way of formalization inside a grid. Indeed, a lot of different dimensions are interacting with each other. For example, social contact can be linked to neighbourhood if some collective activities are organized on the site, or maintenance costs can be linked to total cost of ownership when the maintenance is done by the owner.

Additional reflection tools, such as graphs and schemes, were employed to compare the case studies.

In the last column of the grid, a 'level of importance' was added for each dimension to rate its importance in comparison to the other themes. This was done to understand the distribution of efforts of each case study, and to compare the case studies. Afterwards it was represented as in the following scheme.

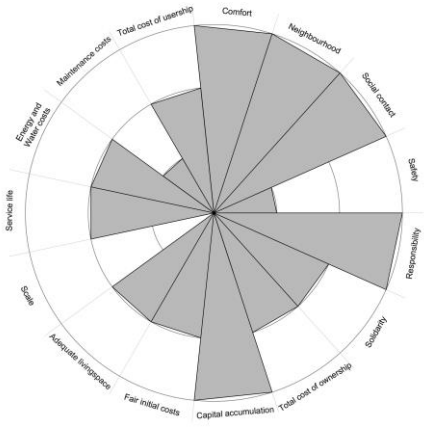

Figure 14: Importance of the different dimensions

Then, the number of cost-saving initiatives and circular qualities were put forward for the different dimensions, as shown in the following scheme. This was done to understand what dimensions are more likely to result with affordable and circular qualities. Also, this enabled to study some eventual links between affordability and circularity. The cost-saving initiatives and circular qualities of the dimensions were defined thanks to the previously completed equitable housing chart. The dimensions were disposed in a graph by counting the number of cost-saving initiatives and circular qualities and adding one unit to that. For example, Service Life (SL) is disposed in the following graph, having 1 cost-saving initiative and 4 circular qualities.

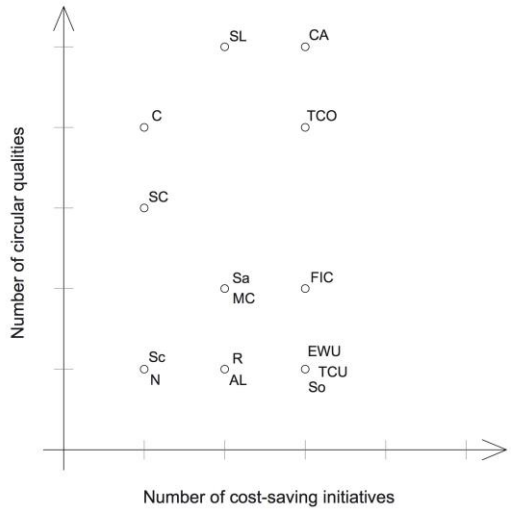

Figure 15: Number of cost-saving initatives versus circular design qualities for each dimension

The abbreviations of this graph can be found in the list of abbreviations at the beginning of this thesis.

Table of case studies and interviews

Table 4 presents an overview of the different case studies that were analysed and the interviews that were conducted.

	Temporary housing projects in Brussels			**Upscaling**		
Number	#1	#2	#3	#4	#5	
Name	Solidair Mobiel Housing / SwotMobile by Saamo	Modules by IDR	Modulo by Diogènes	De Meeuw	Uuthuuske	
Interviews						
Persons	Project leader npo and owner of modules	Project leader npo and owner of modules	Project leader npo	Structural engineer and business developer	Project leader Aalten	Advisor minister of housing
Place	Teams	On site	Café	Teams	Phone call	Teams
Place in Annex	Annex 1	Annex 2	Annex 3	Annex 4	Annex 5	Annex 6

Table 4: Summary case studies and interviews

CHAPTER 4

CASE STUDY ANALYSIS

This chapter will analyze the 5 case studies, using the method that was explained in subchapter 3.3. It will start with the 3 temporary housing projects in Brussels, following by the 2 companies implementing temporary building for residential or non-residential applications. After each part, the different case studies will be summarized and compared.

All the sources that were used for the analysis of the case studies can be found in the introduction of the case studies in subchapter 3.2.

4.1 TEMPORARY HOUSING PROJECTS ON EMPTY FIELDS IN BRUSSELS

Case study 1: Solidair Mobiel Wonen – SwotMobile project

- Equitable Housing Grid

Like explained in the method, first a circular grid was filled in, and then the following grid was completed. The next paragraphs will analyze the different dimensions, going from the dimensions that are most considered in the project, to those that are least considered.

	DIMENSION	DESIGN DECISIONS	DESIGN QUALITIES			LEVEL OF IMPORTANCE
			Wellbeing	Affordability	Circularity	
LIVING	Comfort	Units designed with inhabitant	Respond to the specific needs of each person			3
		For one unit : Loam Panels	Good acoustics, good moisture regulation		Safe and healthy	
		Materials : wood impregnated with vinegar, walls with clay, steel columns	Healthy environment		Renewed, Safe and healthy	
		Walls with clay	Healthy environment		Safe and healthy, Compostable	
	Neighbourhood	Organization of activities with neighbourhood (conversations, artistic interventions, 'collective construction days', local projects)	Build a new network for the homeless + encourage their possible future in the neighbourhood	Help from neighbourhood	Location and site	3
		Study about challenges, needs, opportunities of neighbourhood	Bring something to the neighbourood ad create a relation with neighbourhood		Location and site	
	Social Contact	Creation of a collective space for activities, creation of activity on site	Create solidarity within the group + create solidarity with neighbourhood		Location and site, Multi-purpose	3
		Semi-public landscape				
		Flexible open/closed wall panels				
		Social Guidance of the homeless people	The inhabitants are guides			
	Safety	Use of urban wastelands	Avoid squats + vandalism + lack of life in neighbourhood	Less security cost (for land owner)	Location and site	1
FINANCING	Responsibility	Co-creation process	Participate in decision making, regain a grip on their housing process + strengthen social inclusion ands citizenship, create a mutual learning environment	The inhabitants take care of their dwelling		3
	Solidarity	Solidarity among inhabitants and with neighbourhood		Help from neighbourhood		3
		Funding by BCR and Innoviris Co-create		External support		
	Total cost of ownership	Temporary land rented		Less land costs		2
		Dismountable units		Less maintenance costs	Compatible, Manageable, Reversible	
		(Wish for next unit : Technics easily reachable, digital library with numbering of panels)				
	Capital Accumulation	Transportable units	Reuse the units at different locations			3
		Flexible, dismountable unit configurations	Reuse the units different times, at different locations, adapting it to different sites and wishes	Long life expectancy	Compatible, Manageable, Reversible	
		Reversible connections	Reuse the units different times, at different locations, adapting to different sites and wishes	Long life expectancy	Reversible	
		Durable Materials	Qualitative materials	Long life expectancy	Durable	
		Standardized shapes		Possibility to sell components separately	Compatible	
DWELLING	Fair Initial Costs	Prefabrication	Short construction time, easy installation	Low installation costs	Simple	2
		Self-Construction		Less labour costs	Simple	
	Adequate Livingspace	Small living size (35m^2)	Good compared to streets	Less material costs		2
	Scale	First small scale (research costs)				0
	Service Life	Durable Materials: steel columns for structure, wood impregnated with vinegar	Long life expectancy	Less replacement costs	Durable	2
		Dismountable housing units	Moderate life expectancy (depending on the number of times the unit is moved)		Compatible, Manageable, Reversible	

DU	Service Life	Durable Materials: steel columns for structure, wood impregnated with vinegar	Long life expectancy	Less replacement costs	Durable	2
		Dismountable housing units	Moderate life expectancy (depending on the number of times the unit is moved)		Compatible, Manageable, Reversible	
USING	Energy and Water Use	Thick wood whool insulation and double glazing	Thermal comfort, less energy consumption	Less energy costs		2
		Electricity counters	Be aware of the consumption	Possibly less energy costs		
		Dry toilets	Less water use	Less water costs		
	Maintenance costs	Dismountable units	Easy to maintain components	Less maintenance costs	Accessible	1
		(Wish for next unit : Technics easily reachable, digital library with numbering of panels)				
	Total cost of usership	Thick wood whool insulation and double glazing	Thermal comfort, less energy consumption	Less energy costs		2
		Electricity counters	Be aware of the consumption	Possibly less energy costs		
		Dry toilets	Less water use	Less water costs		

Table 5: Equitable housing grid, case study 1

Significant consideration

- **Neighbourhood**

Something that was very important in this project is the integration of the neighbourhood. This was done by organizing conversations, artistic interventions, and 'collective construction days' where the neighbourhood could come to participate to construction. Thank to this, they managed to involve the surrounding streets and make them part of the project. There is a general contribution to wellbeing of society, because reflections about the city are raised, leading to innovation. The goal was also to create small-scale networks with the street and the surroundings, by doing a preliminary study about the challenges, needs, and opportunities of the neighbourhood. With this they managed to map out organisations, initiatives and stories of inhabitants and workers of the commune. In order to create this link with the surroundings, the temporary stay on the site needs to be minimum 2 or 3 years. For the inhabitants, it is about building a new network with people and eventually encouraging their future in the neighbourhood. The different activities that are done to include them created a reflection on their talents and what they can bring to the city.

Doing so, they also managed to reactivate a disused site. The point was to refurbish an urban Waiting Space, and turn it into a 'place of negotiation', a place where there is a reflection about the city, and where experimentation and innovation can take place.[75] It has a value in terms of neighbourhood, because an empty place is refurbished, and a temporary occupation can become an inspiration for the future development of the site.

In terms of affordability, integrating the neighbourhood can help a collaboration for the construction of the units in a solidary spirit, and thus diminish labour costs. It has also a value in terms of circularity since the project brings quality to the site, and thus to the neighbourhood that surrounds it. Thanks to that, the neighbourhood has higher chances to be maintained and redeveloped.

- **Social contact**

Another dimension that has received particular attention is Social contact. While everything that has been said for the neighbourhood can be linked to this dimension, also other decisions that were made in the

project are encouraging social contact. The configuration of a typical site can be seen in the next picture. It is made of 8 housing units and a collective space, surrounded by a semi-public landscape. The collective space is made for activities between inhabitants or with the neighbourhood. The semi-public landscape is meant as a transition from public (at the front of the site) to private (at the back of the site). In this way, the site is opened up with shared spaces but the inhabitants can keep some privacy. This strategy is reinforced by a flexible system of open/closed wall panels that can offer privacy or modules open to the exterior, supporting social contact with the neighbours. This support of social contact can create solidarity between inhabitants and with the neighbourhood.

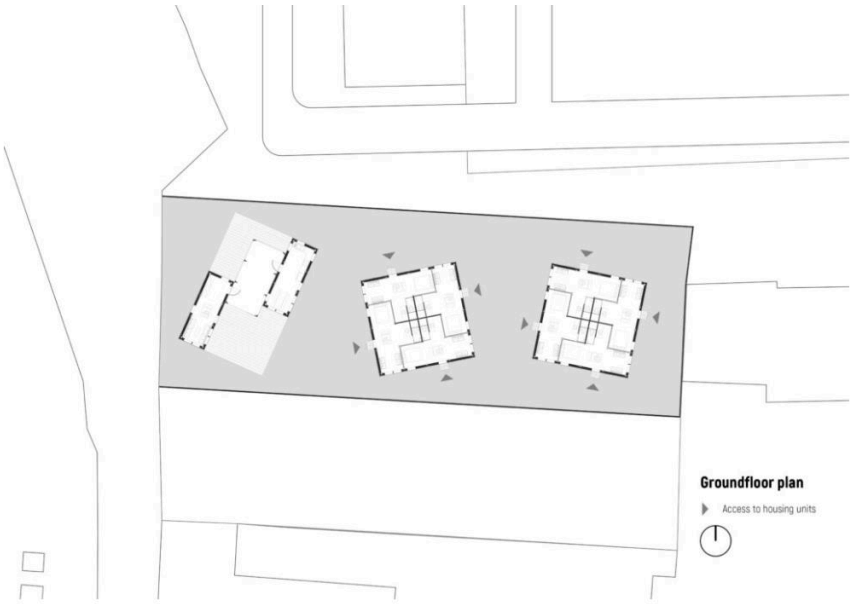

Figure 16: Site layout with 8 housing units, a collective space and a semi-public landscape

The same as for the previous dimension can be said in terms of labour costs. Here, supporting social contact can help solidarity in constructing the units. And a good bond between the stakeholders can help a more efficient collaboration, and thus less labour costs. As for the neighbourhood, bringing value to the site can encourage the future maintenance and redevelopment of the surroundings. Furthermore, a collective space is created that can be used for different purposes. This can encourage longevity of the units because it can adapt to future needs.

- **Responsibility**

The next dimension is the one related to responsibility. Like said before, a co-creation process is put in place with the different stakeholders. This means that the project is designed by different actors, each bringing their own point of views. But this co-creation is not only happening at the design level. Also the construction is managed in a collaborative way. This group work is facilitated with social guidance for the formerly homeless people. Also skill building is organised for the future inhabitants and stakeholders, with workshops about individual job coaching, carpentry and social skills. These topics are related to social contact too. For all the stakeholders of the project, the co-creation process is empowering because there is a sharing of knowledge. The inhabitants can participate in the conception of their house, empowering them and giving them a feeling of responsibility towards the project. This can help them regain a grip on their housing

process. The skill building workshops enable them to discover their talents. And if inhabitants feel responsible about the project, there is more chance that they take care of their housing units. This would lead to less repair costs.

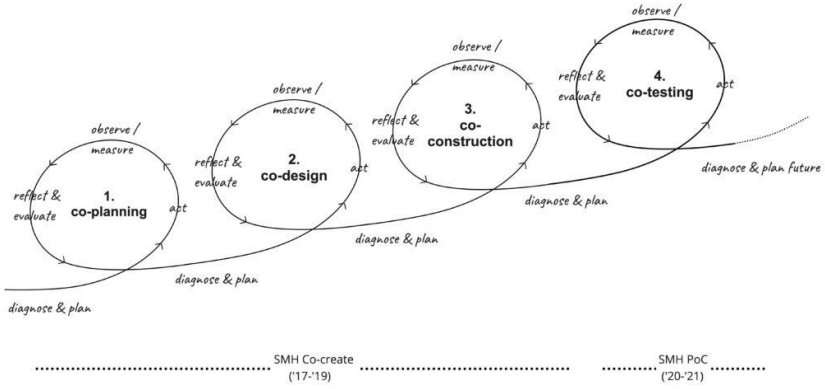

Figure 17: Schematic Representation of the Three Big Action Research Cycles of the Swotmobile Project (Image: Action research cycles by Kemmis & McTaggart (2005), adapted by Burak Pak)

- **Solidarity**

The title of the project (Solidary Mobile Housing) already shows the importance of the solidarity dimension. Solidarity is an integral part of the project, since the goal is to rehouse homeless people. This enables to get external financial support. The main funding is provided by the Minister of Housing and Innoviris Co-create. For future modules, they are looking for other ways of financing than funding. One can also imagine that the integration of the neighbourhood and the collaboration between the project's stakeholders creates a solidarity that can facilitate mutual aid and financial support.

The candidates that were chosen for the Solidair Mobiel Wonen project are 8 homeless men. They were found by going from shelter home to shelter home, explaining the project. These men showed interest. Also, they were not representing too complicated or vulnerable homeless profiles, which made it easier to collaborate with them for the pilot phase. Because it was a research project, it needed to be focused. During the process, some of the candidates dropped out and were replaced by others. The 8 men will be the first ones to test the units. In the future, it will be important to open up the focus towards more diversity, also gender wise. Indeed, a wish of different stakeholders is to find women as next candidates.

- **Capital accumulation**

There are some design decisions that have a huge impact on capital accumulation. First of all, the modules are flexible. They are made of a multifunctional unit of 2,5m by 7,5m, half of a technical unit, flexible façade panels, and removable interior walls.

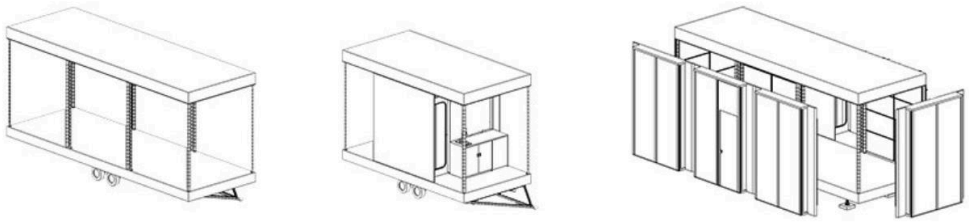

Figure 18: Multifunctional unit, technical unit (1 for 2 modules) and flexible facade panels

These units can be assembles differently to form a housing unit, in function of the site. And numerous housing units can be paired in a variety of ways, as seen in the next image. This modular system works thanks to coupled technical units that serve for 2 housing modules. In this way it is simple to adjust them to different circumstances and needs.

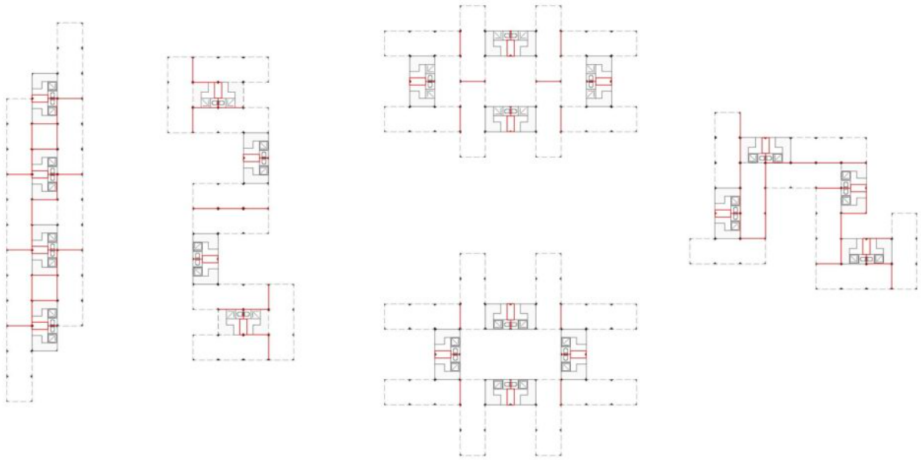

Figure 19: Different typologies of module organization

In addition to be flexible, the modules are also completely dismountable thanks to reversible connections. In this way, the housings can be easily dismantled, transported in parts, and reassembled elsewhere. The components have a standardized shape and can also be dismounted and used for other buildings. To facilitate the handling of these components, durable and qualitative materials are chosen: steel columns for the structure and Tricoya Accoya wood, impregnated with vinegar for the façade.

If the house can be kept and reshaped continuously according to the wishes of the owners, it can keep its value over time. The demountability and flexibility of the units also induce many circular design qualities. The modular system make it possible to recombine the units in different configurations, the standardized shapes of components make it possible to reuse them for other purposes, encouraging the longevity of the components. Furthermore, like explained earlier, the future reutilization of building parts is easy. The reversible connections make disassembly possible, and encourage future developments. Finally, the materials are durable and can be disassembles and reassembled without damage.

Moderate consideration

- **Comfort**

Let's move on to other dimensions of the project. First of all, comfort. As said earlier, the future inhabitants participate in the realization of the modules within the framework of co-creation. In terms of comfort, this brings them a lot because they live in a place that has been shaped according to their own expectations. This is reinforced with the flexible open/closed façade panels. For example, for one of the inhabitants that likes to draw, this gives him the possibility to have a big window for light. Secondly, the chosen materials are healthy for the inhabitants. This leads to the circular quality 'Safe and healthy', guaranteeing a better chance for future reuse of materials. The walls are made of clay, which is a compostable material, and the façade panels are made of wood, a renewable material. This results also in the circular qualities 'Compostable' and 'Renewable'. Lastly, the modules are well insulated which provides thermal comfort for the inhabitants.

- **Fair Initial Costs**

Another important dimension is related to fair initial costs. The first design procedure that is related to this is prefabrication. The components are pre-made in a workshop. The mounting process is thought in a low-tech way, facilitating self-construction. The same can be said about technical installations, they can be adapted and function connected to the grid as well as off-grid. In terms of well-being for the neighbourhood, an easy and quick construction reduces noise disturbance. For the inhabitants and stakeholders, it is also nicer to realise the modules quickly and easily. Secondly, it is empowering to construct its own house. Self-constructing quickly means also less labour costs, and prefabrication means less costs during the construction on site, as well as less transportation costs because the components are already brought in one piece. Joining more units together has also an effect on initial costs, because there is less exterior walls, meaning less heat losses and less façade panels to produce. This low-tech, simple solutions will be easy to understand and adapt in the future and a simple system of building the units will favourise their relocation. The initial cost of one unit is more or less 50 000€.

- **Adequate livingspace**

For the livingspace it was necessary to find a balance between little housing modules with small footprints, and a dwelling respecting the Belgium housing codes. These codes require to have at least 26 m² of interior space, and at least 22 m² of living space.[76] They decided to offer a total living area of 35m². The future inhabitants that lived in the streets before are glad with such a surface. In terms of affordability, tiny modules induce less labour and material costs.

- **Service life**

The service life of the modules is linked to what has been said for capital accumulation. The use of durable materials and the dismountability of the units give more chance for a long life expectancy, depending on the number of times a unit is dismounted and remounted. This quality of materials induce less replacement costs, and a durable dwelling. The compatibility also provides longevity.

- **Energy and water use**

In terms of energy and water use, qualitative insulation is put in place to reduce energy consumption. Also electricity counters are installed inside the units to raise awareness among the residents. Dry toilets are put in place, reducing water use considerably. All of this is reducing energy and water costs, and thus total cost of usership through the service life.

Little consideration

- **Safety**

As said before, using empty land can have a good impact in terms of safety of the surrounding neighbourhood because it can prevent squatting or vandalism. For the inhabitants, the framework of this co-creation process can represent a safe and secure environment during the creation process. After that, living inside the modules will of course be more secure than living in the streets.

- **Total cost of ownership**

The prototype that was build is now owned by the npo Saamo. However the researchers of the project are currently searching on a proof of concept to upscale the project. The goal is to make these solutions available for people to make their own temporary houses. To do so, a social enterprise would for example be created to be in charge of the management of the housing modules. This firm would give guidance on maintenance aspects, and eventually help in financial aspects.

Regarding the first prototype, it was partly financed by the BCR. Knowing that the Minister of Housing has dedicated 1 million euros for 5 projects of temporary housing, one can imagine that 200,000 went to each proposal. On top of that, we can add the participation of Innoviris. Therefore, a large part of the initial price of the modules was covered by these subsidies. But during the life of the modules, Saamo will also incur other expenses as owner. This includes costs related to maintenance and repairs, but also the costs of relocating the housing.

Regarding the costs of relocation, what is interesting about the Saamo project is that there are two possibilities to relocate a module. The first one is to dismantle a module and reassemble it on the new site. This allows for component repairs to be made at the same time or for the module to be reassembled in a different way at the new site. The second option to simply move the entire module without demounting it, this is possible as it is placed on a trailer. This last option would save time and money.

- **Scale**

The scale of the project is kept small for now, but we can imagine a future expansion of this Solidary Mobile Housing concept, that would probably diminish the total costs. This would be possible after the first experience of living, when people will experience the modules. This will enable to see if the concept is working in practice and what can be ameliorated.

- **Maintenance costs**

Maintenance is facilitated by the demountability of components. However at this stage a clear method for maintenance has not been established yet. During the interview, it was explained that efficient maintenance

was something that would be thought for the next projects. This would happen with more reachable technics and a digital library with numbering of panels.

- **Total cost of usership**

The total cost of usership represents the costs that the users of the units will have to pay during their stay. In the case of SMH, they will have to pay a small contribution every month. That money will be used for maintenance and repair. When moving inside the units, they will also invest an amount of money, that they will get back when they move out, to eventually search for a new accommodation.

▪ Reflections

The SwotMobiel project is focused on 5 dimensions. Integrating the neighbourhood, social contact by creating a well-thought private and public distribution of space with collective spaces, responsibility of inhabitants and different stakeholders by integrating them in a co-creation process, solidarity by joining multiple forces to rehouse homeless people, and capital accumulation is encouraged thanks to a demountable housing system.

It is important to clarify the current stage of the project and the long process it was part of. The co-creation started in 2017 (already before the call for tender of the BCR), and the first constructions started in summer 2019. Today, the collective space and a living module have been built on the site in Jette. Several events have been organised, but modules have not yet been inhabited. There are several reasons for this long waiting time. Firstly, the Covid situation may have strongly influenced the implementation of the project. Secondly, this is a pilot project within a whole research framework. Indeed, it is the first step that is the most complicated because it is something that has never been done before, and the research around it present a huge time investment. Finally, the situation on the ground is tense. The temporary occupation agreement stipulated an occupation equal to the period of waiting for planning permission for the project that the owners of the land wanted to build. However, they were refused permission. The climate on the site is no longer good and SAAMO is looking for a new empty field to relocate. The full theory has therefore not yet been fully tested in practice and the project is not yet complete. During this long process, the future residents were able to receive temporary shelter in 2 houses.

However this investment of time and money in research and co-creation is not done in vain. Indeed, research allows us to understand the effects of such a project and how to implement it at bigger scale. This pilot phase is meant as an inspiration, a prototype for bigger developers. Secondly, as stated above, co-creation allows for the reintegration of the poor and collective learning. Some of the objectives are already being achieved, like the activation of the site bringing value to the neighbourhood, or the empowerment of the future inhabitants and participants of the project.

Case study 2: Infirmiers de Rue – Housing Modules project

- Equitable Housing Grid

	DIMENSION	DESIGN DECISIONS	DESIGN QUALITIES			LEVEL OF IMPORTANCE
			Wellbeing	Affordability	Circularity	
LIVING	Comfort	Modules turned towards the forest, to prevent views with streetwalkers	Privacy, benefits of nature			3
		Modules Ameliorated after 1st site experience	A growing environment	The inhabitants will take care of their dwelling		
		Direct contact with exterior, nature, streets	No claustrophobic sensations (for people that lived in the streets)			
		Good accoustic and thermal insulation	No noise pollution, even for sites in dense urban areas, thermal comfort			
	Neighbourhood	Communication with the neighbourhood	Contat with neighbours			1
	Social Contact	6 individual modules, on 1 shared site	Privacy and shared spaces			2
		Mixed social profiles	Dynamic where the inhabitants pull themselves up			
		Social Guidance of the homeless people	The inhabitants are guides	The inhabitants will take care of their dwelling		
	Safety	Use of urban wastelands	Avoid squats + vandalism + lack of life in neighbourhood	Less security cost (for land owner)	Location and site	1
		Individual support of inhabitants				
		Site closed with fences	Secured site			
FINANCING	Responsibility	Equality in quality of houses between different inhabitants on 1 site	Fair feeling	The inhabitants will take care of their dwelling		1
		Mailboxes	Sense of belonging is reinforced			
	Solidarity	For future expansion: they do not only rely on subsidies but also trying to find real 'social' investors for the units		The investors are willing to invest for their profit, but also for a good cause		2
		Funding by BCR		External aid		
	Total Cost of Ownership	Land temporary rented		Less land costs		1
		For 2 units: Carpentry was reused to create new units (based on dimensions of existing parts)		Less materials costs	Reuse	
	Capital Accumulation	The units can be transported in 1 piece		Small construction costs	Simple, Reuse	2
DWELLING	Fair Initial Costs	Parts of units constructed in the framework of learning system for students: work training companies	Learning environment	Less labour expenses		3
		Total prefabrication of units, that are brought to site in 1 piece/2piece	Short construction time, easy installation	Low installation cost	Simple	
	Adequate Livingspace	Small living size (25m^2)	Good compared to streets, small and practical at the same time	Less materials costs		2
	Scale	Willingness to scale up				2
	Service Life	Units can be transported		Longer service life	Reuse	1
USING	Energy and Water Use	Modules are well insulated		Less energy costs		1
		Speak to inhabitants to sensibilise them		Less energy costs		
	Maintenance Costs					0
	Total Cost of Usership	System of fixed expenses, and the surplus gets back to inhabitants ever 2 years		Way to put some money aside/ spare for inhabitants		2

Table 6: Equitable housing grid, case study 2

Significant consideration

- **Comfort**

Comfort is a dimension that is really important for this project. The philosophy of IDR is to think that the inhabitants need to feel comfortable in their own house to be able to reinsert themselves into society. Living in temporary modules can serve as a way to regain grip on their life. This is why they don't want to produce quick and low-cost units but sustainable and qualitative ones. In order to provide comfort, different things are put in place. On the terrain of Forest, all the units are turned towards the forest, with the closest façade towards the street. Thanks to this, the inhabitants can benefit of a direct contact with nature and more privacy. In IDR's view, the very concept of lightweight modules and tiny houses is suitable for formerly homeless people as it offers direct contact with the outside world, whereas some may feel claustrophobic in closed buildings. In addition, it offers an individual unit that is well insulated, giving freedom to listen to music without disturbing because there are no shared walls.

Furthermore the first experience on the Schaerbeek site has allowed the modules to be improved for the second site in Forest. The experience of the very first inhabitants revealed some defects, especially in one of the first two modules, where insulation and ventilation was not sufficient, leading to cold in winter and overheating in summer. On the Forest site, this module will be removed to avoid inequalities between the quality of life of the different inhabitants. These decisions can have financial benefits because inhabitants are more likely to take care about their dwelling if they like it and if they feel heard about the defects of it.

- **Fair Initial Costs**

In this case, prefabrication is even more important than in the previous case study, since the modules are completely prefabricated and brought to the site by truck. This is called ready-made units. On site, they are placed on blocks with a crane. The blocks follow the topography of the land, without changing it. Some modules are already brought in one piece, while other modules are brought in two parts and connected on site. This greatly reduces the initial costs, as the installation on site is very quick.

To further reduce initial costs, the workshop construction is coupled with a learning system for students. Architecture students participated in the construction of 2 modules. According to IDR, this system was very interesting but it would be difficult to implement it on a larger scale, since there would not be enough student demands. One possibility would be to undertake these learning experiences for part of their modules, and produce other parts of the modules in a more industrialised way. At the end, they reached an average initial cost of 40 000€/module.

Moderate consideration

- **Social Contact**

From the start, the inhabitants are aware of the temporary module system. At the time of relocation, they can decide to stay in the modules or to not. The choice of the 2 inhabitants of the first modules in Schaerbeek was to stay. The change to Forest was a bit complicated and it took some time before they felt

completely comfortable in the new place. But now, they had the time to adapt and they can benefit from even more social interaction than before as they are more on site.

These additional social interactions can be beneficial but represent also a risk in case of tension. Indeed, they are now 4 and will soon become 6. The third person integrated very quickly as she already knew the other two. For the fourth person, the agreement could be more complicated because she has psychiatric problems. So far, the relationship is cordial but nothing is certain about the future, and the arrival of the next two could disrupt the cohabitation. IDR's strategy is to bring together a mix of social profiles, in order to obtain a positive dynamic with inhabitants who pull each other up.

In order to focus on the individual follow-up of each person, IDR uses a Social Real Estate Agency to manage the modules. Before people can live in a module, they must have their papers in order, have mutual insurance, and be registered with the CPAS to receive their social integration income. These are the steps that IDR has to take with the homeless in order to get them off the streets, and then they have to follow-up the persons so that they regain a grip on their lives and pay a certain amount of rent every month. In this way, they can keep contact with the individuals, even if they are removed from a module.

- **Solidarity**

As with the previous project, the project represent solidarity because it rehouses homeless people. The region represents external financial support as it is one of the projects chosen in the 2018 call for tender, and IDR also receives other subsidies. But the support from the region is coming to an end, and IDR is now looking for other means of funding. Since they believe that the modules are not particularly the best investment for someone that wants to make a maximum of benefits, they are more looking for social investors who are willing to receive a certain amount of rent each month, while giving the opportunity to get someone off the street.

- **Capital Accumulation**

The fact that the modules are transportable is a real added value. For example, if the area where a module is placed has lost value, shifting the module to somewhere else could restore its importance.

- **Adequate Livingspace**

As for the previous project, the aim was to create dwellings that were as small as possible, but still respecting the housing codes. The surface area of the modules is equal to 25m², which suits the inhabitants well. The space does not feel too small as it is in direct contact with the outside, and far more qualitative than for example the underside of a bridge or a tent. Again, these small sizes of modules is a sparing of materials.

- **Scale**

Here, the scale dimension is put in the 'moderate consideration' category because IDR is really looking to expand. they have several sites on their radar, and the real intention to implement more modules in the city of Brussels. Their objective is set to 20 modules by 2024. But they are also wanting to scale up in Liège, which is a city that is also suffering a lot from a housing crisis.

Little consideration

- **Neighbourhood**

Unlike the previous case, this project is not part of a special effort to integrate the neighbourhood. The Forest site is surrounded by a railway station, the police station at the opposite side of the street, and the commune under construction, which is not currently inhabited. There are therefore no direct neighbours, and communication was not considered important at the beginning. However, after conducting a press campaign, some of the neighbours were disappointed with the lack of information they had received. This is why IDR is now committed to be more involved in communication, and to inviting them to the inauguration when the last modules will arrive. Even though no efforts have been made to reach out to the neighbourhood, this does not prevent some natural interaction with passers-by. And it turns out that the inhabitants are quite happy to explain the concept to curious street walkers. Moreover, interesting interactions have taken place with the police station across the street.

The site of Forest is pleasant because it is rather calm and skirts a small forest. On the other hand, things were rather complicated and expensive on the technical level, for the connection to the sewage, electricity and water networks. This was a big investment, that could pay off for a long period of stay. This period of stay was stipulated in the temporary occupancy contract, and set to 2 years. However today there is no real estate project chosen yet so it is very likely that they could renew this contract and stay for 4 or 5 years, a longer period that would be more suitable for the efforts that were done related to the grid-connections.

- **Safety**

Like for the previous project, activating the site in Forest could provide safety to the neighbourhood. In terms of safety for inhabitants, it is managed by the Social Real Estate Agency. However the candidates were chosen by IDR. The goal of IDR is to rehouse the most vulnerable homeless people, the ones that have the most trouble to be accepted by other aids. These are often men older than 50 year that have a long history of homelessness. Like said before, different profiles were chosen in order to create a positive dynamic. Safety is ensured by providing consistent follow-ups for each individual. Regarding the environment, the site is located in a quiet neighbourhood and next to a very calm street. In addition barriers are installed around the site to provide more privacy with the street.

- **Responsibility**

In order to push the inhabitants to feel responsible about their housing units, IDR tries to provide qualitative units. To reinforce this responsibility, they also provide equal modules in terms of qualities. The modules are equal, yet there are still some differences that also bring a personal identity, and a feeling of belonging. The inhabitants are feeling equal and like said before, there is more chance that they will take care of their dwelling. Mailboxes are installed at the entrance of the site, reinforcing this sense of belonging. However inhabitants do not get a world to say in the design of the modules.

- **Total Cost of Ownership**

The modules are rented to the inhabitants, who pay a monthly rent together with the costs of their water and energy use. IDR is the owner of the units and like any landlord, it will have to undertake multiple expenses over the lifetime of the modules. In the case of the temporary modules, these include the costs

associated with the regular removal of the modules. Each relocation requires a study of the new site's terrain as well as connection management. But that's not all, because there also has to be thought about the costs of maintenance and repairs, as it was the case for one of the first defective modules. However, it is conceivable that the modules will become better and better designed as the inhabitants experience them, requiring fewer repairs or improvements in the future.

One of the cost savings for the owner is the land cost. The land is rented temporarily thanks to the temporary occupation agreement. There are no taxes to pay and the terrain is used as a temporary gift. To reduce other costs, IDR decided to reuse the carpentry of the defective module of the first site in Schaerbeek. Based on the dimensions of the doors and window frames, another module could be created. This reduced the material cost of the new module, while at the same time enhancing the value of the components of the old module, reusing them in a circular way. This was very interesting but also induced a bigger thinking process.

- **Service Life**

It is difficult to estimate the life span of such modules, just as it is difficult to estimate the life span of tiny houses. In this project, little is done to ensure a maximum lifespan. The modules are not flexible and modular, although they have a simple and timeless form. Their lifespan also depends on the number of times the modules will be moved, because moving them could lead to breakage or wear out the modules more quickly. However, the mobility of the modules means that they can endure several lives.

- **Energy and water use**

The users of the modules are former homeless people, who are not really familiar with the concept of energy saving. Raising awareness about energy consumption is therefore important for IDR, to be more environmentally conscious but also to reduce electricity costs. Unfortunately, some people do not yet understand this concept. Qualitative insulation is also being implemented. A system of solar panels shared with the neighbourhood is being thought out by IDR, since the surfaces of the roofs of the modules are a bit too small to implement solar panels. To recuperate water, there needs to be well separated internal circuits with recuperated water and city water, because they cannot be mixed. This requires space and is thus not a priority today.

- **Maintenance costs**

In this project, nothing is done to facilitate maintenance costs in order to also reduce the total cost of ownership.

- **Total cost of usership**

The last dimension concerns the total cost of usership. As mentioned earlier, this represents the rent of the inhabitants and the costs of their water and electricity use. They are asked to pay 260€ of rent, with 100€ of provision of charges, thus 360€ each month. The cost of the charges is set at €100, which will be closer to the real price in winter, and represents a surplus in summer. In reality, expenses equal an average of 50 to 60€ throughout the year, for a module that is well insulated. Each year after the statement of charges, the

inhabitants receive the surplus back. This can be seen as a way to put money aside. The inhabitants paying their rent is part of the reinsertion process.

- Reflections

For the module project by IDR, providing a comfortable living environment for inhabitants and reducing initial costs by using a prefabrication system are the most important aspects. This project might seem less qualitative than the previous example since most of the dimensions are weaker. However things are more nuanced and a comparison will be established in point 1.4.2.

For this project, the process was more rapid as it was not part of a research or co-creation framework. In August 2018, the two first modules were placed in Schaerbeek, already before the call for tender of the BCR. After two and a half year, they moved to the Forest site. The inauguration of this second site with 6 modules was organised very recently, on 2 June 2022.

Case study 3: Diogènes – Modulo

- Equitable Housing Grid

	DIMENSION	DESIGN DECISIONS	DESIGN QUALITIES			LEVEL OF IMPORTANCE
			Wellbeing	Affordability	Circularity	
LIVING	Comfort	Units well insulated (14cm), double glazing	Thermal comfort, energy savings	Less energy costs		3
		Heat recovery ventilation	Thermal comfort and good air quality	Less energy costs		
		Different exterior finishes possible	Identity of inhabitant on site			
		Ask for the needs of the inhabitants before designing the units	Respond to the specific needs of inhabitants			
	Neighbourhood	Existing site is preserved		No slope modification costs / foundation costs	Location and site	1
		Units on site around a church	Sense of safety			
		Possibility to go on land that is difficult to access with machines	More possibilities			
	Social Contact	Social guidance of the homeless people	The inhabitants are guides			2
		Mixed social profiles	Dynamic where the inhabitants pull themselves up			
	Safety	Use of urban wastelands	Avoid squats + vandalism + lack of life in neighbourhood	Less security cost (for land owner)	Location and site	1
		Units around a church	Feeling of safety			
	Responsibility	Qualitative housing units		The inhabitants will take care of their dwelling		1
FINANCING	Solidarity	Funding by BCR		External help		2
	Total Cost of Ownership	Dismountable units	Easy to fix parts	Less replacement costs	Simple, Accessible	2
	Capital Accumulation	Transportable units	Reuse the units at different locations	Long life expectancy		3
		Durable, qualitative material	No degradation	Less material costs	Durable	
		Demountable units	Easy to move the units to somewhere else	Long life expectancy	Compatible, Manageable, Reversible	
DWELLING	Fair Initial Costs	Easy mounting process (like LEGO)	Quick construction	Less labour costs	Simple	3
		Mounting done by different stakeholders	Empowering to construct the porject with different persons involved	Less labour costs		
		Prefabrication	Short construction time, easy installation	Low installation costs	Simple	
	Adequate Livingspace	Small living size (28m^2)	Good compared to streets	Less material costs		2
	Scale					1
	Service Life	Durable, qualitative material	No degradation	Less material costs	Durable	2
		Dismountable housing units	Moderate life expectancy (depending on the number of times the unit is moved)		Compatible, Manageable, Reversible	
USING	Energy and Water Use	Units well insulated	Thermal comfort, energy savings	Less energy costs		1
	Maintenance Costs	Dismountable units	Easy to fix parts	Less replacement costs	Accessible	1
	Total Cost of Usership	Units well insulated	Thermal comfort, energy savings	Less energy costs		2
		Realistic rent fixed	Empowered inhabitants			

Table 7: Equitable housing grid, case study 3

Significant consideration

- **Comfort**

As it was the case in the previous examples, the modulo project is part of a desire to offer qualitative housing to its candidates. It is not a question of movable containers made in a hurry, but rather of housing modules that have been thought out in such a way as to offer a comfortable environment to those who live in them.

To offer this comfort, the group of architects thought of several things. First of all, the modules are well insulated to offer thermal comfort and energy savings. There is a 14cm layer of insulation, double glazing, and a heat recovery ventilation system. Then there is work on the aesthetics of the modules. Each unit has its own identity with a different exterior finishing. This can help the resident to feel really at home.

- **Capital accumulation**

This case study is also interesting in terms of capital accumulation. Like the two previous examples, the modules are transportable. This can be advantageous because it can represent a way to give value back to the modules when they are relocated. On top of this, the units are demountable like in project 1.

- **Fair initial costs**

The construction of the modules is quite fast since it is about the assembly of prefabricated parts. In the case of the Modulo's, this assembly is done in a family atmosphere between the different actors involved in the project, thus mostly low-skilled people. This allows to save on labour costs. On the other hand, it allows the different stakeholders to meet around the concrete realization of their project and discover the modules in real life. The initial cost of the module is around 35 000€.

Moderate consideration

- **Social contact**

As with IDR, residents can decide whether to stay or not at the time of relocation. They have the choice between renewing their temporary agreement of stay in the Modulo or moving to a more permanent housing, but in both cases they will still be followed by Diogenes. At the time of the relocation, 1 out of 3 residents decided to stay. The other 2 were relocated by the social real estate agency Verhaegen. The one who decided to stay was able to visit the site before moving in, in order to prepare himself. To ensure him a smooth transition, he was able to stay in an empty module during the dismantling and reassembly of his own module (as the 2 other inhabitants had left). The new candidates who are chosen to live in the modules are carefully selected by the Diogenes association.

As for the atmosphere between the inhabitants, it was better on the first site. The relations between the inhabitants of the second site are more complicated, which sometimes creates nuisances, reinforcing the existing tensions with the neighbourhood. Currently Diogenes follows each person individually, but the association thinks that a community cohesion project should be put in place as is the case for some of its co-housing projects. Something that they also understood now is that 3 modules is not a good number, because 2 inhabitants will always get closer.

- **Solidarity**

Again, this project is representing a solidary joint venture to rehouse homeless. In terms of financial help, the main subsidy that was given for this project is the one from the minister of housing, like for the 2 previous cases. Unfortunately, the support from the region is also coming to an end. This is a big stress for the real estate agency because they need to rent the units for 2 years before being refunded of the investment. This is questioned in the framework of the ISFSC research: is the model worth it financially or is it better to just renovate existing housing to rehouse the homeless?

- **Total cost of ownership**

The owner of the modules is the social real estate agency. As for the previous projects, they have to finance the relocation, which sometimes requires important costs for the connection to the grid, and travel costs. Regarding the relocation, it is a question of dismantling the modules and reassembling them on the new site. The modules are composed of panels of 1,2m by 0,9m which contain wood whool insulation surrounded by two OSB panels. A structure is added on top, and then a cover is added for waterproofing. They mount the units in approximately 1 month by assembling the panels thanks to a convenient LEGO system. This system enables to maintain and replace easily some parts that would be damaged. Unlike project 1 and 2, here it is not possible to move the whole unit in 1 piece.

- **Adequate livingspace**

The surface of a modulo is 28m², which respects the standards of housing. The inhabitants are satisfied with it, since it is already way better than their previous living situation in the streets.

- **Service life**

As for the other case studies, the service life of the modules would also depend on the number of times the modules are relocated. And in this case, every relocation goes with a demounting and remounting process. However this demounting process offers a better chance for longevity since it is easier to replace defective parts.

- **Total cost of usership**

As in the previous cases, residents must pay their rent, water and electricity expenses. Their rent is set at more or less 400 euro per month, that they manage to pay thanks to their social integration income from the CPAS.

Little consideration

- **Neighbourhood**

Nothing is really set up to sensitize the neighbourhood, except flyers in the mailboxes and a meeting with the direct neighbours. The modules were well accepted in the first neighbourhood which was a social housing area. However, the second location present more difficulties. What is good about this second site is that the temporary agreement will probably be extended, as it is the case for IDR in Forest. Thanks to the partnership with the research of the ISFSC school, Verhaegen and Diogenes didn't needed any urbanistic permit until now. However this is something that they will need in the future.

The actors give a lot of importance to the preservation of the site. The site is used temporarily, so it is important to maintain a minimal impact and leave no traces when leaving.

- **Safety**

Like the 2 previous case studies, the activation of the site of Diogènes can be beneficial for its surroundings. Whereas the chosen candidates in the first example were more stable, and those in the second were more precarious, here we have a mixture of both types of profiles. As explained, this ended in some conflictual relations. We may envision a sense of security that comes with the modules being positioned adjacent to a church.

- **Responsibility**

As said earlier, different stakeholders are involved in the project. Here, there is no question of collaboration in order to facilitate the process. To gain time and efficiency, each one remains focused on his own responsibility. The inhabitants do not have a say in the design of the modules, but the architects call on the Diogenes npo to understand what priorities to put in place to meet the needs of future residents. Like for IDR, the housing units are qualitative to make the inhabitants love their home, inviting them to take care of it.

- **Scale**

Today, the different actors of this project are not ready to start other projects of this type. For the moment, they are limited to this pilot project and are not yet convinced that the time and investment that is put in place is up to the result. However, this project is interesting because it already offers an additional possibility of rehousing. This is an additional chance to motivate some people to return to a normal life, thanks to a type of housing that is a little more diversified.

- **Energy and water use**

Apart from the extensive insulation, nothing has been put in place to reduce energy or recover rainwater. This could be put in place but the stakeholders do not have the desire to invest more time in these aspects for the moment.

- **Maintenance costs**

The social real estate agency is responsible for the costs related to maintenance and repairs. They work with a rental guarantee system, where the inhabitants are responsible in case of breakage or damage.

▪ Reflections

In this case of the Modulo case study, the main effort is put on the comfort dimension by providing a well-thought design, with interior and exterior quality. Furthermore, fair initial costs are diminished by creating a kit of part that is easy to assemble, and that was assembled by the stakeholders. Capital accumulation is important thanks to the demountability of the units, as in project 1.

Unlike the first example, this project was not part of a co-creation process, which accelerated the process. The Modulo project started in 2020 in Uccle, and was moved to the Jette site during the summer 2021. It is also part of a research project, which has provided some funding.

Reflections about temporary housing on empty fields

The different actors of the previous case studies believe in the valorization of vacant sites to rehouse the homeless. These multiple projects prove a certain interest for modular housing during these past years in Brussels, especially in the framework of social projects. While some don't know if a further development is worth it because of the big investment it represents (Diogenes), others are convinced of the opposite and have big plans for the future (IDR).

To get an additional opinion, another interview was conducted with the adviser of the Minister of Housing, Jeremy Onkelinx. This interview can be found in Annex 8. At the government level, this type of housing has been encouraged since the 2018 call for projects. Today, the region confirms its interest as it collaborates with SAAMO and IDR to design modules to accommodate Ukrainian families in the coming months. These modules will represent a temporary shelter for Ukrainian refugees from the war situation in their country. The goal is to distribute 100 modules across different sites in Brussels. These modules will be dedicated to small households of 1 or 2 people. After the Ukrainian war, it is conceivable that these modules will be available for the region for crisis situations. For example, to temporary house people living in a social housing tower that needs to be renovated urgently.[77]

▪ Challenges

Several challenges were identified related to this housing model.

First, the **legislative** barriers. Although each of the different actors in the analysed cases received funding from the Minister of Housing, nothing was put in place to facilitate the problems of urban planning permits. The nonprofit organizations were left to manage complicated administrative issues due to the particularity of their innovative housing models, and this slowed them down considerably. But today these barriers are gradually lifted, as the first municipalities have approved planning permits for temporary housing modules, one in Forest and one in Anderlecht for IDR.

Another important challenge is the identification of **vacant land**. Saamo sees great potential in the number of available sites, but finds it very difficult to access them. According to Saamo there should be a clear census of such lands. One of the problems is that large sites such as the Barracks of Etterbeek, the Josaphat wasteland or the Wiels marsh are open for temporary use but for economic and attractive activities rather than for housing. For IDR, finding land is not a problem at the moment, as they have several opportunities, among others thanks to Citydev. But the association believes that after a certain time, land will be less and less available in the context of urbanization of cities. And for Diogenes, it is said that the number of available sites is high but there are not so many available sites in practice. According to Jeremy Onkelinx, adviser of the Minister of Housing, there will always be several available sites, but environmentalists will increasingly defend biodiversity in cities. They believe that remaining green spaces in the city should be preserved.

Then there is the **technical** challenge. This includes the connection to the sewage, electricity and water networks. This connection can be complicated and expensive in some cases. But perhaps the city's networks will be more and more accessible in the future. Sometimes, this technical challenge can also represent the depollution of soils, on certain industrial wastelands, notably around the Brussels Canal. A final technical aspect is about the differences of topography between the sites.

Another challenge that should be studied more carefully is the **affordability** of a module over its lifetime. This is still quite complicated to evaluate as we are still at the beginning of the experiments in Brussels. Some associations seemed to be struggling to keep up, wondering if the renovation of more traditional housing was not more advantageous and saving time and money. Some were also really searching for new funding, and for investors willing to buy the modules. While the small size of the modules and the temporary renting of the land offer a cost advantage, the costs of moving are rather disadvantageous (but it all depends on the frequency of moving). The initial cost of a module varied from 35 000€ to 50 000€. But the economic context of today tends to an important inflation, and the cost of wood will increase considerably.

Another challenge identified is the acceptance of the **neighbourhood** and the NIMBY effect[78]. The Brussels population can feel uncomfortable having a group of homeless people as neighbors, with sometimes complicated profiles. For this, a change of mentality is simply needed. A solution could be the approach of SAAMO, where the neighbourhood is really integrated in the project. But as we saw in the last example, to ease tensions with the neighbourhood, we also need to avoid tensions between residents sharing the same site. This understanding between the inhabitants can be managed by contacting organizations specialized in relations between co-inhabitants.

- Comparison of the first case studies

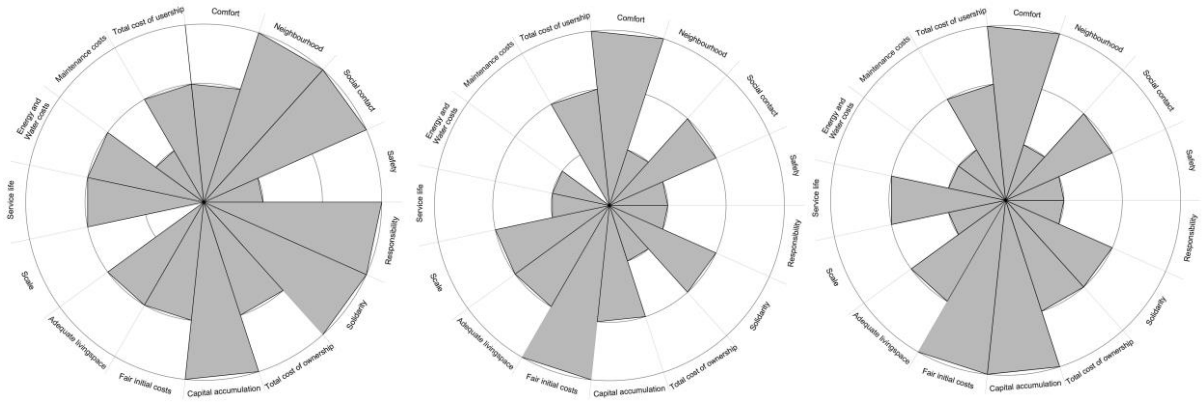

Figure 20: Level of importance of the different dimensions in case studies 1, 2 and 3 (from left to right)

The previous diagrams allow us to compare the different cases. At first sight, we can observe that the different dimensions are more developed for project 1. Indeed, SAAMO wanted to invest in a participative approach of co-creation, which favors the contact with the **neighbourhood** and the **social contacts** between the inhabitants. Moreover, it allows the inhabitants to create new relationships and an eventual permanent future in the neighbourhood. This is an interesting approach because it reactivates a disused site, opening it up to its direct environment. The other two projects did not develop this, which on the other

hand gave them the opportunity to go faster. We can therefore question the approach of the first case study, and ask ourselves if such an investment is worth it for this kind of temporary project.

The **comfort** of the inhabitants was a priority for all 3 projects, but it is graded higher for the 2 last projects because they could improve the modules after their first experience. In each case, the emphasis was on the desire to create qualitative housing, to make the inhabitants feel good. The philosophy is that reintegration into society is more likely if one lives in a qualitative dwelling and not in for example a low-class container. However, none of the 3 projects has yet integrated the inclusion of people with reduced mobility. This is a complicated point to implement, because in each case the modules are elevated to have a minimum impact on the site.

As explained earlier, the first project involves inhabitants with simpler profiles, to include them easily in the creation process. This gives more **responsibility** to the inhabitants, which is not present in the other examples. But the other two projects also include a section of the population that is even more precarious and rejected by the system. This sometimes includes profiles with a long history of homelessness and addiction problems. Including these people in a co-creation process would considerably slow down the project. This also gives another dimension of **solidarity** to these 2 projects that are including the most rejected part of the homeless. But in all three projects solidarity is a very important aspect. Thanks to this dimension they also all receive external financial support.

The demountability of the modules in projects 1 and 3 has an influence on different dimensions. First, in terms of **maintenance costs**. Being able to separate the different components of a module makes it easier to maintain them, for example by replacing defective parts without damaging others. This is also linked to the **total cost of ownership**, because maintenance is something that will have to be done by the owner of the module, through the service life of the property. Secondly, the 3 projects represent a good **capital accumulation** thanks to the mobility of the modules. The fact that they can be moved to other locations allows them to have a higher residual value. But this is even more emphasized for project 1 and 3 where the modules are transported by demounting and remounting them at other locations, making them more flexible over time, especially for project 1 that plays with modularity. This also leads to a probable longer **service life**. The second project uses a different method, where the modules are not dismantled but transported in one piece. This has disadvantages for the dimensions of capital accumulation and service life, but can have a positive impact on **fair initial costs** because it reduces the installation time. Project 1 combines this advantage as it also offers the possibility of moving the entire module with the help of a trailer.

Finally, the **scale** dimension was graded differently for the three projects. It is set to 0 for the first one, because the modules have not been lived yet. For the third case, it is set to 1 because the modules have already been relocated once but the stakeholders do not intend to move on with other sites at the moment. And finally, it is set to 2 for the second project because they already had the opportunity to relocate and they have other prospects in mind, and the intention to upscale.

- Cost-saving initiatives and circularity

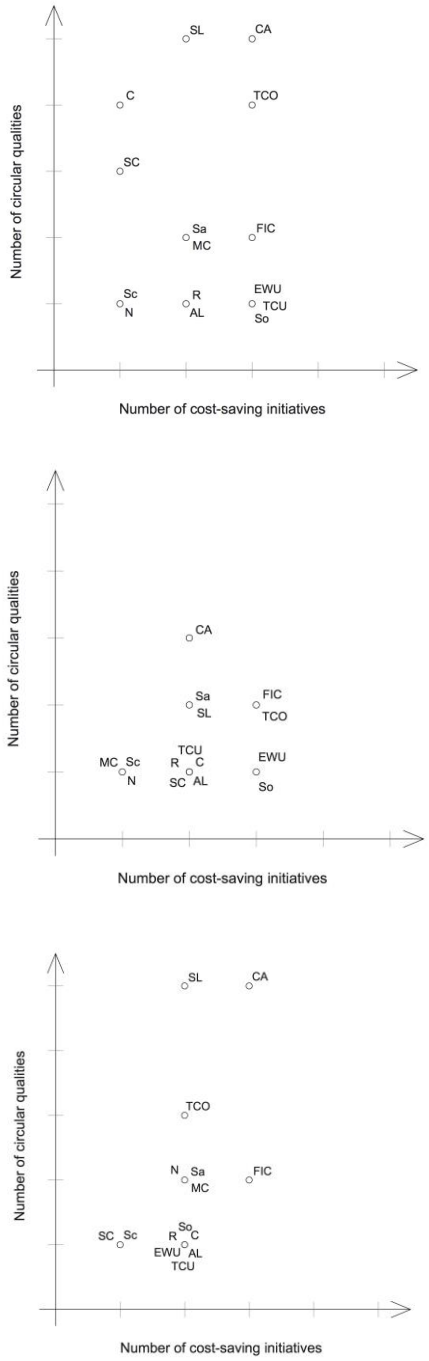

Figure 21: Number of cost-saving initiatives versus circular qualities, case studies 1, 2 and 3 (from top to bottom)

Figure 21 show a representation of the dimensions in relation to the number of cost-saving initiatives and the number of circular design qualities, like explained in subchapter 3.3. For some dimensions, this enabled to link cost savings to circular aspects.

In these graphs, we can observe that Service Life (SL) and Capital Accumulation (CA) are the highest for project 1 and 3, because these projects are demountable. We can observe that this has a link with the number of cost-savings. Indeed, the independency of the components facilitate their maintenance and increase the

residual value of the units. This is also related to Maintenance Costs (MC), and Total Cost of Ownership (TCO) that are higher in these cases. CA for project 2 is still important in terms of circularity thanks to the transportability of the modules that facilitate their reuse, but less than the 2 other projects. It is thus also weaker financially because maintenance is more complicated, and residual value is not as important. As CA and SL relate to long-term thinking, they are related to circular design qualities in each case study.

The circular quality of simplicity has also an effect on Fair Initial Costs (FIC) as it is related to the amount of labour that will be invested for constructing the units. It also has an effect on Total Cost of ownership (TCO) as a simple transportation will make it easier and diminish relocalisation costs. This was put forward in each project.

Finally, valorising the location of the projects is a circular quality that was put forward in the framework of the Neighbourhood dimension (N). A first example of this is the inclusion of the neighbourhood, by organizing events, also re-activating a disused site, as in project 1. This could include cost-savings when the neighbourhood is for example participating in the construction of the project. From another perspective, valorizing the neighbourhood can also mean having a minimal impact on the site. This is also reducing costs as it eliminates the need for foundations.

4.2 UPSCALED TEMPORARY BUILDING COMPANIES FOR NON-RESIDENTIAL AND RESIDENTIAL APPLICATIONS

Case study 4: De Meeuw

- Equitable Housing Grid

	DIMENSION	DESIGN DECISIONS	DESIGN QUALITIES			LEVEL OF IMPORTANCE
			Wellbeing	Affordability	Circularity	
LIVING	Comfort	Modules completely designed with the client before production	Respond to the specific needs of each person	No costly modifications during production		2
		Accessibility for disabled people is possible	Social inclusion			
		Good interior climate control	Thermal comfort	Optimal energy costs, no heat losses		
		Big reflexion about implementation, orientation of building modules (fixed openings)	Enough daylight and no overheating		Location and site	
	Neighbourhood	Fast instalation: little on-site disturbances	No disturbance for neighbourhood			1
	Social Contact					0
	Safety	Prefarication of modules	Good working conditions	Less construction site accidents and mistakes	Safe and healthy	1
FINANCING	Responsibility	The building solution is being thought-of with the client from the beginning	The client feel responsible about the project	The client will take care of the building		2
		System of maintenance contract that involves the client in maintening the building	The client feel responsible about the maintenance	The client will take care of the building		
	Solidarity					0
	Total Cost of Ownership	Maintenance contracts	Client has an agreement with the company to beneficiate from regular check-ups			2
		Reverse logistics	Company gets materials back into their construction process	Less material cost	Reuse, Recycle	
	Capital Accumulation	A building can be adapted and reshaped		Less material cost	Compatible	3
		Qualitative, durable materials	Qualitative space	Longer lifespan of components	Durable	
		Intensive work at detail level	No thermal bridges,...	Longer lifespan		
		Standardized shapes	Different choices available	Easy prefabrication	Compatible	
DWELLING	Fair Initial Costs	Use of BIM	Facilitates the management of the construction	Reduces mistakes and provides a cost monitoring		3
		Complete prefabrication production process	Nice work environment for workers	Less labour costs, construction costs	Simple	
		Temporary modules brought to site by truck, in their entirety	Easy for workers to install the modules on site	Les installation costs	Simple	
		Reverse logistics	Material stock is already available for the company	Less material cost	Reuse, Recycle	
	Adequate Livingspace	Well-thought standardised shapes	Comfort for client			1
	Scale	Efficient prefabrication production process		Lower total costs		3
	Service Life	Qualitative materials	Qualitative space	Bigger lifespan of components	Durable	2
		Transportable units	Client can choose the site	Longer lifespan		
USING	Energy and Water Use	Units produced in factory with the most energy-efficient techniques: maximum efficiency, minimum waste	Quick process	Less energy costs, material costs		2
		Possibility to add sustainable options like solar pannels, heat pumps,...	Environmentally friendly	Less energy costs, water costs		
	Maintenance Costs	Maintenance contracts	Client has an agreement with the company to beneficiate from regular check-ups	Longer lifespan		2
		Secondary structure to let people hang things without damaging the building	Appropriation of the place by its users	Longer lifespan		
	Total Cost of Usership					1

Table 8: Equitable housing grid, case study 4

Significant consideration

- **Fair initial costs**

De Meeuw uses a prefabrication production system. This allows them to save construction time compared to conventional building, and to produce less waste during construction. Thanks to a variety of standardized modules, the company manages to industrialize while offering freedom of choice for the customer. These different standardized typologies apply especially in the case of temporary buildings. For buildings with a more permanent character, the company also offers custom-made options, which costs more because it is less standardised. In any case, De Meeuw uses BIM, which induces financial benefits by avoiding mistakes.

Another thing that makes De Meeuw's temporary buildings more affordable is how they are brought to site. Most of the modules are transported directly in one piece. For permanent buildings requiring a more sophisticated interior design, the components are brought to site as flat packs, with floor, outer walls and roof components brought separately and assembled on site. In any case, transportation must be carefully considered in relation to road legislation, which is different in each country. These rules concern, for example, the maximum dimensions authorized on bridges and highways which have width, height and weight limits.

Another thing that is lowering the initial costs of buildings for the company is the large quantities of building components that are coming back to the industries. As previously explained, De Meeuw favors reverse logistics. They therefore have a large stock of components from their old projects, which they can continuously reuse.

- **Scale**

De Meeuw's efficient production process allows the company to build at high speed. In the Netherlands, it is able to produce dozens of modules per day and transport them to the site very quickly.

Moderate consideration

- **Comfort**

At De Meeuw, buildings are designed entirely according to the needs of the users, depending on the type of building application (school, hospital,…). The goal is to offer the best option to the client and to help him as much as possible with good advice. The idea is to invest as much time as possible with the customer at the beginning, so that everything is fixed before production starts. In modular building this is a necessity in order to be as efficient as possible, because it is too complex to make changes when a building is already starting to be produced. In contrast with the 3 previous case studies, here De Meeuw offers solutions for people with reduced mobility. The widths of the access doors and the access ramps are adapted to the requirements of the legislation. Thermal comfort is also of great importance and is ensured thanks to good climate control.

As the standardized modules have window and door openings which are fixed, it is important not to neglect the implementation of a building and its orientation in relation to the sun. In order to avoid overheating or

a lack of natural light, this orientation is carefully thought out by the architect and the client. It is also possible to add shading devices near the windows to block the sun.

- **Safety**

De Meeuw offers optimal working conditions to its employees, who have the opportunity to build the modules indoors. This is beneficial for them because they will not have to face difficult weather conditions. This could also lower the costs related to mistakes on a difficult construction site. As far as the inhabitants are concerned, too little information has been found about what is put in place for their safety during the stay in the buildings, but one can assume that it is possible to install alarms like in conventional buildings. The structure of the building is carefully established with a stability engineer.

- **Responsibility**

Different entities are responsible of De Meeuw's projects. De Meeuw itself, eventual architects involved in a more specific design, and the client. The client's responsibility is important in De Meeuw's model, as he is involved in the process from the beginning. But if the building only belongs to him temporarily, one could question how responsible he feels towards its maintenance. For this reason, De Meeuw sets up a system of warranty and maintenance contracts.

- **Total cost of ownership**

De Meeuw provides different possibilities in terms of financial models, also related to the type of buildings. It is possible to lease from the bank, to rent from De Meeuw or the bank, or to make a buyback system where the building is bought and sold back after a certain number of years. The last model is not very frequent in practice. Indeed, it is difficult to re-evaluate the cost of the building after some years because sometimes the buildings are not well maintained by the client.

The model of De Meeuw allows them to remain the owner of most of their constructions. This is rather advantageous in terms of costs, but also in terms of circular economy. The buildings are either reused by other clients of the company, or they return to the company and are either stored as a whole, or dismantled in order to recover the components for other projects. This is called reverse logistics. However, this system may incur certain costs for the company related to the management, storage and displacement of the modules during their life cycle.

- **Capital accumulation**

De Meeuw uses materials that are as qualitative for temporary buildings than for permanent ones, to obtain a long lifespan in both cases, in terms of components or the building itself. The buildings are mostly made of steel (for the structure), wood, EPDM (for the roof). In addition to a careful choice of materials, their exact position in the building is thought out intelligently. Indeed, this can have a big impact on the lifespan and the value of the building over time. For example thermal bridges caused by a lack of detailed work can cause condensation and a quicker deterioration of the building. To facilitate the production process and support the future development of the modules, De Meeuw works with 3 different types of standardized

shapes. Finally, it is always possible to reshape a building. To do so the steel skeleton can stay and the rest can be rebuild.

- **Service life**

The service life of De Meeuw buildings is the same as for traditional building; more or less 30 years. Indeed, the materials that are used are as qualitative for permanent than for temporary building. The fact that the buildings are temporary does not particularly shorten their lifespan, but it makes them more transportable. Temporary modules can be transported from 4 to 6 times, and semi-permanent ones can be relocated 3 times.

- **Energy and water use**

The buildings of De Meeuw are connected to the sewage, electricity and water networks in the same way as for conventional buildings. It is also possible to add greenroofs, solair panels, heat pumps, rainwater collect, and any other sustainable strategy. Secondly, the units are produced in factory, using energy-efficient techniques. This is reducing energy consumption while minimizing waste.

- **Maintenance costs**

The maintenance of a building is very important for De Meeuw, since it also defines its longevity. This is handled in 2 different ways. Larger clients often have their own employees in charge of building techniques such as maintenance. For smaller projects, De Meeuw sets up customer-specific maintenance contracts. This can include maintenance of data, heating, cooling, rooftop, or other things. A breakage will for example not be included in this type of contract, since one have to pay for the repair and the working hours of the workers. This will be taken from the tenant's guarantee or will be paid directly by the tenant. Also, secondary structure systems are put in place to offer the client the possibility to hang things without damaging the building. This can also allow him a better appropriation of the place. This way, the customer can hang whatever he wants without causing any holes or damage to the building. For example, this happens a lot with school boards in the case of education.

Little consideration

- **Neighbourhood**

De Meeuw is specialized in modular production, but the company is not dealing with the surroundings of the sites during the life cycle of its buildings. This is the responsibility of the customer. However, the company's prefabrication system allow for very quick on-site installation, considerably reducing nuisance during the construction time.

Most of the time, clients stay in a building for 5 to 10 years. After that, the building is reused for other clients, or moved and reused by another customer somewhere else, or the building returns to the industry's production line. Usually it is thus not the case that the customer move to somewhere else with the building.

- **Adequate livingspace**

The standardized typologies of modules that De Meeuw proposes for the temporary buildings are thought-out to offer adapted spaces to the client. Since the company is already active since 1929, one can assume that they have had the time to reshape these modules towards better livingspaces.

- **Total cost of usership**

In the case of De Meeuw it is the customer who is in charge of contacting the electricity and water companies directly concerning the expenses. The rent is the only cost that users have to pay to De Meeuw.

▪ Reflections

As seen in the previous paragraphs, De Meeuw is more related to the dimensions of Fair Initial Costs and Scale, thanks to its industrialized production process. This production process is also efficient regarding energy use, and safety of workers. Further, the company focuses on reverse logistics, by taking back their buildings after their temporary use, keeping them in one piece or demounting them. This increases capital accumulation, service life, total cost of ownership and maintenance. Maintenance is considered as a priority for the longevity of the buildings. The company also cares about the clients and their comfort, inviting them to participate in the design of the building from the start. This gives the client a certain responsibility, which is further enhanced during the term of occupancy.

It can be interesting to also highlight the challenges the company is facing today. These include the **roads legislation**, restricting them in dimensions of what they want to transport. Another challenge that the company has to cope with is the **double competitiveness**. First, there is a competition with all other temporary building companies. This market is in expansion today and is expected to grow further in the future because of the rising awareness in material savings, and the desire to build quickly. Secondly, there is a competition with conventional building companies, because they also produce permanent building. On top of that, the market has changed a lot these past years because of the Covid situation. Since then, the number of temporary housing regarding to permanent ones has increased significantly.

A further step for De Meeuw Belgium at this moment would be to implement temporary building for the housing sector too, like De Meeuw Nezzt in the Netherlands. The opinion of the two stakeholders that were interviewed is that Belgium is not yet as evolved as the Netherlands in terms of flexible housing systems. People would have to change their mindsets related to this type of housing before De Meeuw enters this market. Furthermore, the problem with the implementation of housing in the company is the difference in legislation between countries. The Dutch concept should thus be adapted to Belgian restrictions before.

Case study 5: Uuthuuske

- Equitable Housing Grid

	DIMENSION	DESIGN DECISIONS	DESIGN QUALITIES			LEVEL OF IMPORTANCE
			Wellbeing	Affordability	Circularity	
LIVING	Comfort	Bio-based materials	Healthy indoor climate		Safe and Healthy, Renewed	3
		Flexbility in design (space, materiality, windows)	Respond to the need of each inhabitant			
		Floor to ceiling windows, large skylights	Optmal daylight and view		Safe and Healthy	
		Wheelchair access possible	Social inclusion			
		High-quality finishes	A qualitative environment			
		High quality insulation: wood fibre, without toxic glues	Thermal comfort	Energy savings	Safe and Healthy, Renewed	
		Thermostat for each room	Thermal comfort	Energy savings		
	Neighbourhood	Fast instalation: little on-site disturbances	No disturbance for neighbourhood	Less installation costs		2
		Site previously studied with a drone	Good implementation on site	Time saving		
		'Uutwijkske': communities of uuthuusks on temporary land	Solidarity between neighbourhoods			
		Local building companies to assemble a kit-of-parts	Offers jobs in the neighbourhood			
	Social Contact	'Uutwijkske': communities of uuthuusks on temporary land	Solidarity between neighbourhoods			1
	Safety	Prefarication of modules	Good working conditions	Less construction site accidents and mistakes	Safe and healthy	1
FINANCING	Responsibility	Participation of inhabitant to the design of his house	Inhabitant feel respnsible, valued	Inhabitant will take care of his dwelling		2
		Teamwork with different stakeholders	People learn from eachother, improve	Production process improved		
	Solidarity	Agreements with housing corporations		Financial fundings		1
	Total Cost of Ownership	Plug and play: easy to maintain		Low maintenance cost	Manageable	2
	Capital Accumulation	Plug and play : easy to mount and demount (3 levels of dissasembly)	Easy to move/adapt modules	High residual value	Simple, Manageable, Reversible, Compatible	3
		Flexibility over time	Inhabitant can adapt the house to feel at home	High residual value	Manageable, Accessible	
		Low-weight dwelling	Easy transport	High residual value	Manageable	
		Foundation: removable screw piles	Reuse the piles somwhere else	Less material costs	Reuse	
DWELLING	Fair Initial Costs	Digital production, prefab	Easy and fast process	Less failure costs	Simple	3
		Plug and play: easy to mount and demount	Easy to instal	Low installation cost	Simple, manageable	
		Module transported in one piece to site	Easy installation	Less installation costs	Simple	
	Adequate Livingspace	Small living size, huge bedroom, living area				2
	Scale	Digital production	Easy upscaling			3
		Easy to esseble by low-skilled people	Easy upscaling		Simple	
USING	Service Life	Plug and play: easy to mount and demount	Lifespan of 50 years	High residual value	Manageable, Reversible, Compatible	3
		Flexibility over time	Can adapt to future		Compatible	
	Energy and Water Use	Comfort Cabin	Comfort of services			2
		Almost energy neutral (high-quality insulation and clever integration of service installation)	Environmental value	Less energy costs		
		Good temperature and ventilation management	Thermal comfort			
	Maintenance Costs	Plug and play: easy to maintain		Low maintenance cost	Accessible, Manageable, Reversible, Compatible	3
	Total Cost of Usership	Almost energy neutral (high-quality insulation and clever integration of service installation)	Environmental value	Less energy costs		2

Table 9: Equitable housing grid, case study 5

Significant consideration

- **Comfort**

In order to provide qualitative housing, Uuthuuske puts several things in place for optimal comfort. Firstly, the modules are made entirely of bio-based materials. The use of natural materials which are mostly wood create an airy and healthy climate for the occupant. Even the insulation is made of wood fibre without toxic glues, which blocks the heat longer than other more conventional insulation. This provides a cooler environment during hot summers. In addition, each room has its own thermostat which allows the temperature to be adjusted as required. The choice of materials has other beneficial effects, as it is estimated that 7 tons of CO_2 are stored per Uuthuuske. All of the timber used in the Uuthuuskes is certified and originates from European forests that are carefully maintained.

Secondly, the modules are very flexible, allowing customers to choose from a wide range of possibilities. Different space configurations are possible, by playing with the modularity of the modules. This is facilitated by the digitisation process that is put in place for the manufacture of the modules. There are an infinite number of architectural possibilities. This is a real added value for the future inhabitant who will be able to really appropriate his house while keeping an affordable price. This customization option exists to create spaces, but is also present for the choice of interior and exterior materiality. Or the choice of window openings. These can be created in different forms, for example as large skylights or as floor to ceiling opening. Natural daylight can thus be handled as the customer wishes. It is also possible to add certain facilities such as wheelchair access for people with reduced mobility. All this can be easily modified through an online platform accessible by the various stakeholders, which saves a lot of time. Everything meets the standard norms for permanent accommodation, as they are defined in the Netherlands.

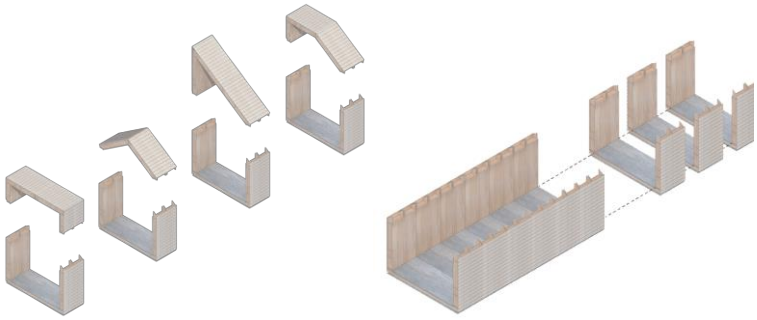

Figure 22: Uuthuuske section selection (left) and length selection (right)

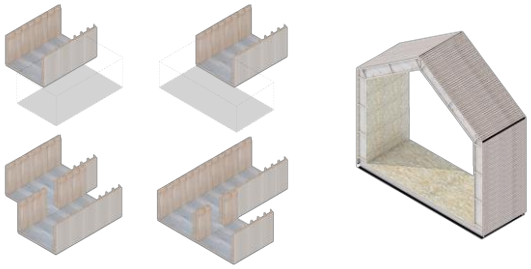

Figure 23: Uuthuuske unit configurations (left) and materiality choice (right)

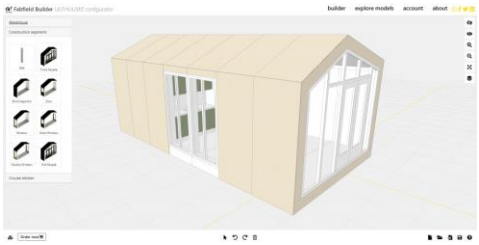

Figure 24: Uuthuuske online platform

- **Capital accumulation**

The assembly system of an Uuthuuske is plug and play. This means that the modules are easy to assemble and disassemble. The houses can be disassembled on three levels, making it easier to adapt them in the future. Firstly, the houses can be disassembled into different entities. Secondly, the dwellings are formed by juxtaposing different 'slices' of 1.2m wide sections, which can be detached to adapt or move the building. Finally, these module slices can be completely dismantled to recover the materials. This easy assembly is also present in technical installation. As for the foundations, they are adapted to the local conditions of each site. In most cases, removable screw piles are used, enabling to reuse them for a next location. The configuration of the modules also allows them to be adapted over time and changed according to the wishes of the inhabitants living there.

This multi-level disassembly and flexibility over time greatly increase the residual value of the house and its components. Indeed, after a certain number of years it is easy to replace defective elements while keeping the main structure. Or it would be easy to remodel the house for a new inhabitant. The residual value is also increased by an easy transport of the houses, facilitated by their light weight. This transport is possible with simple trailers.

- **Fair initial costs**

The production process of Uuthuuske is 100% digital. After modelling and drawing on the computer, a kit of parts is created using CNC milling machines. These different machines cut the wood to the nearest 0.1mm, so that the elements can then easily be assembled like LEGO's. This kit of parts is sent to the 'makers', in this case Wam & Van Duren. The assembly system is easy and one day of training is enough to understand the method. So, as De Meeuw, The New Makers manage to obtain a fast industrialized system while still providing a wide variety of possibilities for the customer. Once the modules have been mounted, the technical installations are also easy to add. The power lines are already certified from the factory. No electricians, plumbers or tilers are required, which greatly reduces the amount of labour. This also reduces costs, and speeds up the process considerably. The prefabrication and material cutting process eliminates error costs and produces elements quickly, which when assembled form a very stable structure.

In the workshop, the houses are built on an integrated foundation frame, that will be the base of the house. After a house has been assembled, it can be transported to the site in an unique piece with a trailer. It is this transport that defines the maximum width of a Uuthuuske section. In the Netherlands, the maximum width for transport is 4,5m. Once the house has arrived on site, the base is placed directly on the removable screw piles previously installed on site.

The Uuthuuskes are also equipped with the "comfort cabin", a compact prefabricated module including kitchen, bathroom and toilet. This module is an intelligent creation that saves space and facilitates the construction process.

- **Scale**

The manufacturing process of the houses is such that it is not complicated to increase production, also for the assembling part. The ease of the "IKEA-kits" makes it possible for anyone to build the modules. Today, *WAM&VanDuren* builders are able to build 4 modules at a time in their workshops. The modules can also form row-houses. Research is invested into the feasibility of stacking the modules.

- **Service life**

Even if the modules are temporary, their lifetime is estimated at 50 years. The modules are called temporary for 2 reasons. Firstly, in terms of the rental agreement. People under 28 can rent for a maximum of 5 years, and people over 28 can only stay for 2 years. And then they are also temporary because they are transportable, in the case of a location that would no longer suit.

During this life, it can be imagined that it will undertake many changes of inhabitants and adaptations of the building itself. An inflexible conventional dwelling would lose value over time and be more likely to be destroyed. On the other hand the Uuthuuske gains in lifespan as it evolves with its inhabitants thanks to its modularity.

Special attention is dedicated to the choice and quality of the materials, also encouraging the durability of the module. For the exterior façade for example, different finishings can be chosen. Wood from European woods can be chosen to have the same life duration as hardwood due to thermal preservation. Aluminium recyclable panels can be chosen because they are easy to maintain, with a 30-year color guarantee.

- **Maintenance costs**

The modules are easy to assemble and disassemble, making them easy to maintain. A 10-year warranty is offered to the customer.

Moderate consideration

- **Neighbourhood**

As in the previous case studies, the uuthuuskes are very quickly installed on site, which reduces disturbance for the neighbourhood. Before installing the modules at their final location, the site is carefully studied with a 3D visualisation thank to drone shots.

As the modules are set up temporarily, and the company is only in charge of creating and setting up the modules, nothing is set up with the neighbourhood. However, the company hopes to create "Uutwijkskes", villages of Uuthuuskes on temporary land. In this case, one can imagine the birth of a real community life.

- **Responsibility**

Different actors are involved in the process of creating the uuthuuske's, from design to installation on site. Everything is a group effort, composed of one third of architects, one third of structural engineers and one third of 'makers'. The architects are in charge of the design, in close collaboration with the client. It can therefore be said that the client also has a share of responsibility in the process. The structural engineers are responsible for stability and innovation. Finally, the "makers" are responsible for assembling the modules and installing them on site. They make up only one third of the total team, thanks to a mainly automated production. All the stakeholders are working in a collaborative way through digitalization. In order to achieve optimum efficiency, a good teamwork between the different stakeholders is very important. This collaboration helps to understand the problems of the other partners and to solve them. Thanks to that, innovation can be achieved and things can be improved.

- **Total cost of ownership**

The plug and play system of an Uuthuuske makes it easy to maintain the units over time, but some costs related to relocalisation of modules will have to be taken into account too. The first Uuthuuskes that were built in Aalten in the Netherlands are owned by the municipality but are rented out and managed by the *Achterhoekse Wooncooperation* (AWC) founded for this purpose.

- **Adequate livingspace**

One of the goals of the Uuthuuske is to produce pleasant spaces in a small living size of more or less 60m². The dwellings use small footprints, to have a minimal impact. By an efficient space organization, it is still managed to create huge bedrooms and living areas.

- **Energy and water use**

The houses are almost energy-neutral. The building complies with the Dutch BENG standards (Bijna Energieneutrale Gebouwen). This is achieved through high-quality insulation, and clever integration of service installation. This intelligent integration of services is provided by the Comfort Cabin, which integrates sanitary facilities and kitchen in a smart way. Usually, these service systems are an expensive part of a dwelling and this Comfort Cabin allows to save costs. This module has the same floor level as the rest of the house, as the shower channel has been integrated into the floor. It can therefore be accessed without a threshold.

To avoid overheating during summer, temperature and ventilation management is carefully considered. Everything is managed electrically, with hybrid service systems, balanced ventilation, and heat recovery and cooling. Different systems are possible for heating and ventilation. Heating can be provided with an electric system made of infrared radiation panels. Ventilation can work with an air-to-air heat pump. Thermostats are installed in each rooms to have a full control over the temperature. Energy can be gathered on the roof with PV panels.

- **Total cost of usership**

For the first constructed Uuthuuskes in Aalten, the rent is set to 525€/month. The fact that the Uuthuuske is practically energy neutral greatly reduces the cost of the expenses.

Little consideration

- **Social contact**

The uutwijkskes could generate a large number of social contacts.

This social contact is already very present in the creation of the modules, since this creation requires collaboration between different stakeholders.

- **Safety**

Like De Meeuw, the Uuthuuskes are completely build indoors, offering good working conditions for workers and less costs related to mistakes or injuries.

- **Solidarity**

The Uuthuuskes can have a solidair character. Indeed, the purpose is to propose an affordable housing solution. some Uuthuuskes were already build in a commune of the Netherlands: Aalten. In this case, the Uuthuuskes are managed by a housing corporation that was formed specifically for this reason, and the dwellings are meant for young people who want to live on their own, but cannot afford to buy conventional building.

▪ Reflections

There are different important dimensions for the Uuthuuske. First, it is providing a comfortable living environment, thanks to flexibility and involvement of the client in the design process. Then, demountability and transportability of the modules influences capital accumulation, service life, maintenance costs and total cost of ownership. Fair initial costs and scale are also important thanks to an efficient production process and easy mounting.

It is importance to notice that, unlike De Meeuw, Uuthuuske is a very recent company, with the first modules that were built in May 2021. It was therefore not evaluated on a long-term basis.

Reflections about temporary building companies

▪ Challenges

Two common challenges have been identified for De Meeuw and Uuthuuske. First of all, they have to deal with **road legislation** as they move their modules in one piece. Secondly, the ongoing **inflation** presents a real problem for the future, in terms of the price of materials and transport.

▪ Comparison with temporary housing projects in Brussels

The following graphs allow to observe and compare different aspects of the 2 last analysed case studies, compared to the first ones.

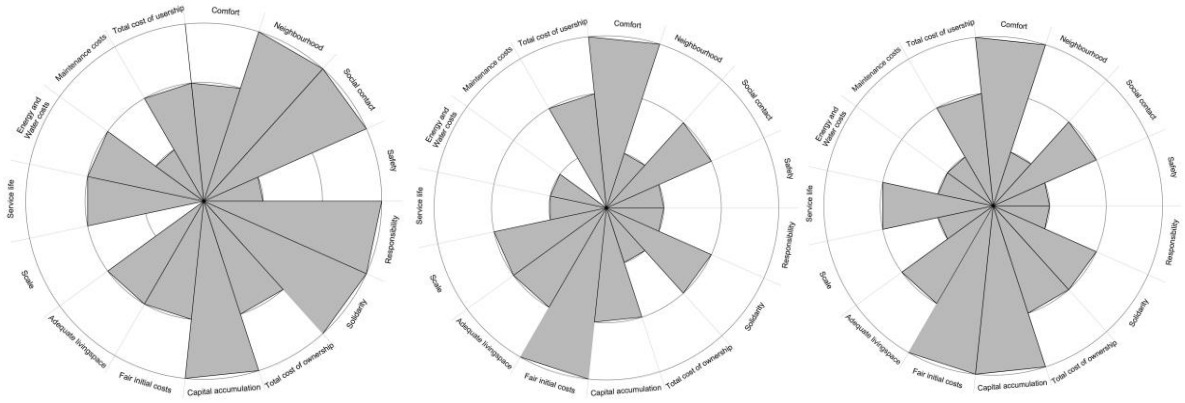

Figure 25: Level of importance of the different dimensions in case studies 1, 2 and 3 (from left to right)

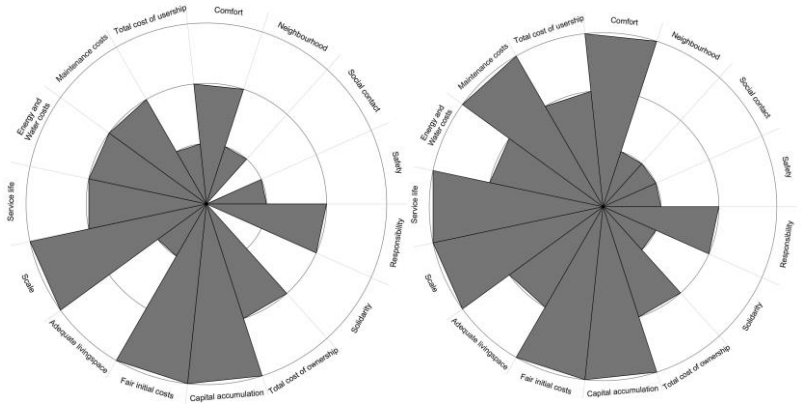

Figure 26: Level of importance of the differente dimesions in case studies 4 and 5 (from left to right)

First, the **capital accumulation** dimension is strongly present for the last two case studies, as it was for the first three case studies. This is due to the temporal character and the dismantlability of the De Meeuw and Uuthuuske modules, which increases their residual values. This influences **service life**, as parts of the modules can easily be repaired or maintained, especially in the case of the Uuthuuskes. This also influences the **total cost of ownership** and **maintenance costs**. For De Meeuw, reverse logistics enables the company to recuperate the temporary buildings after their use, in their entirety or in separate components. This present financial and circular opportunities.

Secondly, the **scale** dimension is maximised for the companies, as they are embedded in a larger production system. This upscaling is possible thanks to the high expertise of De Meeuw, and a shorter but still important expertise of The New Makers for the Uuthuuske. To do this, both use digitalisation to collaborate with different stakeholders (BIM for De Meeuw).

The companies do not put aside the freedom of the client in favour of industrialisation, since the flexibility of the modules offers the client a large choice to participate to its **comfort**. This is done through a range of standardised typologies for De Meeuw. For the Uuthuuske is done through modularity and a range of choices offered to the client, related to the sections, lengths of modules, assembling of entities and materiality. Both companies offer more options, including for disables people, unlike the first 3 examples (subchapter 4.1).

This more industrialised production takes away the more local and collaborative dimension of the projects in Brussels, which had a beneficial effect on **neighbourhood** and **social contact**. However for Uuthuuske, one can say that the neighbourhood is more valued since the kit-of-parts of the modules that were made in factory are sent to local builders for the assembling phase. This is offering jobs in the environment of the site where the module will be installed. For the Uuthuuskes in Aalten, the neighbourhood also participated to decisions.

Although this upscaled model removes some of the more human dimensions in some cases, it can also offer the possibility to create new types of **responsibilities** and **solidarities** between the state, municipalities and housing companies. Indeed, with de Meeuw, this is reflected in the different financial models that the company proposes. In the Netherlands, De Meeuw Nezzt works with the state and housing corporations to implement temporary modules for social housing. The same happened for the first Uuthuuskes in Aalten, but this case focusses more on young adults who want to live on their own. The upscaled models offer thus other possibilities, changing with context and desires, offering solutions for low-income households.

CHAPTER 5

LESSONS LEARNT

Through the analysis of the five case studies, Chapter 4 has provided a better understanding of temporary housing in its various forms, through examples of specific projects from Brussels and examples at bigger scale. It has also allowed to learn from design decisions of different stakeholders, and what qualities these decisions involved. Chapter 5 will present a summary of the different lessons that were learnt from these case studies, and the design guidelines derived from these lessons, to build responsible temporary housing on empty fields in Brussels.

5.1 LESSONS LEARNT FROM THE CASE STUDIES

Similarities

As we have seen in the previous chapter, some aspects were coming back in every case study. This is because temporary housing on empty fields, in general, already has an influence on the dimensions that were assessed. Just because it is temporary housing and not because of the way it was applied. These characteristics emerged when progressing threw the analysis.

The first aspect concerns the **transportability** of the modules. Whether they are dismantled or transported in one piece, this has an influence on capital accumulation and service life. Indeed, relocating the modules after a certain period gives the possibility to extend their life and value. Related to that, we also saw that the number of cost saving initiatives and circular design qualities has an effect on long-term thinking.

Secondly, the **temporary use of vacant sites** has two effects. First, in terms of total cost of ownership. Land costs are greatly reduced or eliminated. However, other costs may arise from the relocation of the modules. To diminish this the elaboration of an easy transport system is essential, as well as the choice of an adequate field. Secondly, reactivating vacant sites has a positive effect on safety for the neighbourhood, as it limits illegal squatting or vandalism.

The last aspect is the **social purpose** of temporary housing, and how this housing alternative can participate to a more affordable housing market. This solidarity part appeared in each case study, in different forms. In the first three cases, it was about providing homes for homeless persons. In the fourth case it was about social housing with the specific example of De Meeuw Nezzt in the Netherlands. The last case was about low-income housing for starters with Uuthuuske.

Differences

Lessons could be learnt from the similar characteristics of the projects, related to the nature of temporary housing. But it was also possible to learn from each case separately, or from aspects that came back in different projects.

The first aspect is the **integration of the neighbourhood**, through different interventions like in the SwotMobile project (events, podcasts, collective construction days...). As we have seen, this offers added value to the neighbourhood, but also to the inhabitants who can build up a new network of relationships. This enhances the value of a neighbourhood and the aid that is generated can bring up cost savings. This intervention can also be done by taking into account the opinion of the neighbourhood on the design and implementation of the modules, before they are put in place, as in the Uuthuuskes project in Aalten. For some projects, this could maybe prevent NIMBY effects.

Another aspect that can be retained from the SwotMobile project is the process of **co-creation**. Bringing together different realities allowed them to open up to other viewpoints and to learn from eachother. This connection of knowledge that took place in the Solidary Mobile Housing project is very rare in our society. It has included the homeless and put them on the same footing as other actors, which is very empowering for them. This co-creation process leads to rethink disciplines, adapting them to current societal issues. This

makes us question who the real architects are, and if the effects of a design are not improved by joining the forces of different actors.[79]

Demountability is another strategy that has shown opportunities for temporary housing. This was implemented in projects 1, 3 and 5. This strategy allows for an increase in residual value, having a beneficial effect on capital accumulation and service life. Being able to separate the different components of a module also facilitates their maintenance, for example by replacing defective parts without damaging others. Projects 1 and 5 have also shown that this demountability offers the possible to play with other module configurations in the future. In these cases, ease of assembly and reassembly is crucial to limit the efforts and encourage longevity. In cases where modules need to be relocated without changing their configuration and without making repairs, it may make sense to move the modules without dismantling them. This would avoid unnecessary damage and save time. This is applied in projects 1 and 3.

The last point concerns the **production system** of the modules. We have seen in cases 4 and 5 that an efficient production system can contribute to upscaling. To do this, both De Meeuw and uuthuuske companies use digitalization, to connect expertise of different stakeholders. The modules are then quickly built in factory, and brought to site by truck. This makes it possible to open up temporary housing to a wider public, a public composed of low-income households looking for temporary accommodation.

5.2 DESIGN GUIDELINES

Table 10 present design guidelines that were derived from the lessons learnt of the analysed case studies. They can be applied for responsible temporary housing on empty fields in Brussels. Builders and stakeholders can consult these guidelines and decide what dimensions they want to focus on. The purpose is to think about each dimension but decide 5 main dimensions that will be priorities in the project. For each dimension, design guidelines are proposed to help the developers. For each of these design guidelines, well-being, affordable and circular qualities are presented. Other dimensions that are related to a certain decision is indicated as well. Lastly, examples of how these decisions were applied is indicated in the last column and can be found in the case studies of this thesis.

	DIMENSION	DESIGN GUIDELINES	DESIGN QUALITIES				
			Wellbeing	Affordability	Circularity	Related Dimensions	Done in Case Study
LIVING	Comfort	Involve the inhabitant in the design process	The inhabitant has the opportunity to have a grip on his housing process, and adapt it to his needs and desires	The inhabitant will take care of his dwelling			1, 4, 5
		Listen to feedback of experiences to ameliorate the units when relocating them to a new site	The living conditions of inhabitants are ameliorated	The inhabitant will take care of his dwelling			2, 3
		Choose for bio-based materials	Healthy indoor climate		Safe and healthy, Renewable		1
		Offer a real contact with the exterior through openings and views	Sense of freedom, contact with nature				1, 2, 3, 5
		Provide good accoustic insulation	No noise pollution, even for sites that are situated in a dense urban area				2
		Provide good thermal insulation	Thermal comfort	Less energy costs	Safe and healthy	EWU - TCU	1,2
		Provide a flexibility of design enabling to add options, for example solutions for disabled people	More diverse targets, social inclusion				4, 5
		Choose an optimal implementations on site, regarding solar orientation and streets	No overheating, enough daylight, adequate views	Natural warming from the sun (less enery costs)		EWU - TCU	
	Neighbourhood	Integrate the neighbourhood in the project	Build a new network for the inhabitants and encourage their possible (more permanent) future in the neighbourhood		Location and site		1
		Inform the neighbourhood well about the project	Better acceptance of the project				1
		Preserve the existing site (by elevate the units on blocks or using removable screw piles)		No slope modification costs / foundation costs	Location and site		1,2,3,5
		Collaborate with housing corporations, municipalities	Joined forces			SC	1,2,3,4,5
	Social Contact	Provide privacy and collective spaces	Create solidarity within the group		Location and site, Varied		1,2
		Put mixed social profiles on 1 site	The inhabitants pull themselves up				2
		Make sure the inhabitants are on the same page (group discussions, organization of common spaces)	Good community spirit				
	Safety	Use urban wastelands	Avoid squats + vandalism + lack of life in the neighbourhood	Less security cost (for land owner)	Location and site		concept
FINANCING	Responsibility	Co-create your housing units with different involved stakeholders	Encourage citizenship and social integration, learn from eachother	The inhabitant will take care of his dwelling		SC	1
		Provide equal levels of qualities for different units on 1 site	Fair feeling	The inhabitant will take care of his dwelling		SC	1,2
	Solidarity	Try to find 'social' investors for the units		The investors are willing to invest for their profit, but also for a good cause			2
	Total Cost of Ownership	Rent the land thanks to temporary occupation contracts		Less land costs			concept
		Arrange components so that they are easily reachable, and create a digital library of these components		Less repair costs	Accessible	MC	
	Capital Accumulation	Create flexible housing units (reversible connections, modularity)	Possibility to adapt a house in function of needs or context	Long life expectancy	Compatible	SL	1
		Create dismountable units (reversible connections)	Possibility to move the house in function of available sites/needs	Long life expectancy	Compatible, Reused, reversible	TCO - SL - MC	1,3
		Choose for durable materials	Qualitative materials for inhabitants	Long life expectancy	Durable	SL	1,3
		Use standardized shapes		High residual value	Compatible, independent		1

DWELLING	**Fair Initial Costs**	Use prefabrication methods for parts of the units	Easy construction	time (low installation costs)			1,2,3
		Imagine a simple construction system	Fast construction	Less labour costs	Simple, manageable		1,3
		Use work training companies: Combine the construction of the units with teaching classes for students	Learning environment	Less labour costs			2
	Adequate Livingspace	Keep small sizes of units, but in line with the minimum regulations	Live simply, eas to have everything close	Less materials costs	Simple		1,2,3
	Scale						
USING	**Service Life**	Choose for durable materials	Easy to demount an re-mount the units without breaking anything	Less replacement/repair costs	Durable	CA	1,2,3
		Create dismountable (reversible connections)			Compatible	TCO - CA - MC	1,3
	Energy and Water Use	Provide good thermal insulation	Thermal comfort, less energy comsumption	Less energy costs		C - TCU	1,2
		Provide electricity counters in the units	Awareness about consumption	Possibly less energy costs		TCU	2
		Use dry toilets	Less water use	Less water costs		TCU	1
		Speak to inhabitants to sensibilise them to energy savings	Less energy cnsumption	Less energy costs		TCU	2
	Maintenance Costs	Arrange components so that they are easily reachable, and create a digital library of these components		Less replacement/repair costs	Accessible, Simple	TCO	
	Total Cost of Usership	Provide good thermal insulation	Thermal comfort, less energy comsumption	Less energy costs		C - EWU	1,2
		Provide electricity counters in the units	Awareness about consumption	Possibly less energy costs		EWU	2
		Use dry toilets	Less water use	Less water costs		EWU	1
		Speak to inhabitants to sensibilise them to energy savings	Less energy consumption	Less energy costs		EWU	2
		Use a system of fixed expenses, and the surplus gets back to the inhabitants ever 2 years		money aside/ spare for inhabitants			2

Table 10: Design guidelines for temporary housing on empty fields

CHAPTER 6

REFLECTIONS AND CONCLUSION

This last chapter will be dedicated to limitations of this research, the value of temporary accommodation for those who cannot find a solution in conventional housing, avenues for the expansion of temporary accommodation, future research ideas related to the subject, and a final conclusion. The first point will concern the method that was used to analyze the cases and its limitations. The second point will deal with future research in the field, to continue the investigation around temporary dwellings in Brussels and elsewhere. A final conclusion will end the thesis.

6.1 LIMITATIONS

This thesis has two main limitations, both related to relatively intuitive procedures that were conducted when analyzing the case studies.

The first one is about the level of importance that was given to the different dimensions of the case studies. This was done based on information that could be found and on the things that were stressed the most during the interviews. But the whole design process was not followed, so the amount of attention that was actually paid during the design of the projects is unknown. Also, the projects are not yet evaluated on a long-term basis, so the implications of the different decisions is still uncertain. This is why this rather intuitive approach was used, because data about the past and the future is limited and the only certain situation is the present. The second argument has to do with the qualitative approach that is being taken in relation to the concept of affordability. Quantitative data or life-cycle costings are not the focus of this thesis. The qualitative method examines project design decisions and their quality and affordability implications.

6.2 MEANING OF A HOME

It is important to clarify that temporary housing on empty fields does not claim to be the general solution to the housing crisis, but rather an additional housing possibility. Interviewed stakeholders emphasized this point. Indeed, a single solution would not be enough, given the many different needs and desires of human beings. In the case of homelessness, this concept presents a model for people who do not fit the existing solutions. To goal would thus be to combine social housing with less conventional, diversified housing models.

Many researchers have investigated the meaning of home. Overtoom conducted a survey on more than 100 people in the Netherlands, and discovered how meaning of home can be different for each person.[80] Refugees will give more importance to the representation of a house to have the feeling of being normal, like the others. They will be more satisfied if their house looks like a real house rather than a container. Women will give more importance to the notion of privacy, this is maybe related to the still unequal society we live in, or fear for domestic abuse. Young people aged between 20 and 30 will be focused on short term because they don't know where they will be in a few years. For people living alone, privacy and safety are important. Because of changing needs and desires, the meaning of a home could represent a shelter, a space to socialize or to be alone, a representation of identity, … This is why flexibility over time is very important, because of the changing inhabitants that a temporary housing could have over its lifetime. In the case studies, the notion of home is approached as a temporary shelter for single persons, for whom privacy and safety might thus be important. However, it might be wise to think about other types of people in the future and what this housing model implies in their home perception.

6.3 TRACKS FOR UPSCALING OF TEMPORARY HOUSING IN BRUSSELS

As seen in the first three case studies, the innovation of the concept of temporary housing on empty fields in Brussels involved a very slow and complicated process. It was the dedication of the different stakeholders that made the projects possible. Thanks to their involvement, that has already permitted a change in urbanistic permits for temporary housing, it is perhaps possible to push the concept to a larger scale.

This upscaling must happen on different levels, responding to the legal, technical, economic, social, organizational and spatial challenges that were addressed in chapter 4, point 1.4.1. Firstly, the concept needs to be shown to the world through media and research. All the case studies were mediatized, and Saamo and Diogènes are collaborating with research organizations, which can also help to raise the interest of the academic field. The Solidair Mobile Housing book, created by the joint venture of the actors of the first project, is another way to raise awareness and show opportunities. Something else that could facilitate the finding of sites is a clear inventory of available sites in Brussels, managed by the state or municipalities.

To continue, there is the problem of funding. Several projects have received subsidies which are coming to an end, and other means must now be found. This could be done through a possible commercialization of the modules, perhaps through a social enterprise created for this purpose, to deal with management and ownership of the units. This is a possibility envisaged by the researchers of the SwotMobile project.

Nor will the expansion of temporary housing take place without considering a wider range of people. Until now, priority was given to homeless men living alone. The consideration of this particular group is not irrelevant since it represents those who are mostly rejected from shelters. However, including other types of households could be beneficial for the implementation of temporary housing in Brussels. Other targets could be women, with or without children. But also, any low-income person looking for temporary accommodation. Furthermore, encouraging collaboration between stakeholders of different projects is primordial to learn from each other. This collaboration can also take place with stakeholders of social housing companies, and even the Community Land Trust. Finally, law's on temporary housing are already changing and the development of a legal framework around this specific model has to continue.

6.4 FUTURE RESEARCH

All the above points are ways to address the challenges of temporary housing on wastelands. Further investigation on these points should be done in order to implement temporary housing in Brussels and Belgium.

Future research could also focus on a long-term analysis of the cases that were seen in this thesis, a few years from now. This would allow for a more comprehensive view of this trend in hindsight. The research around the existing projects should not stop as it will allow for a better understanding of the use of vacant sites for temporary housing.

In addition, research should focus on the temporary housing project for Ukrainian families that is underway in Brussels. It will be important to know the outcome of this collaboration, and also what happens to the

modules afterwards. This research is important in the current context of global warming, and the possible victims of natural disasters that could multiply in the years to come. The GIEC rapports state that all regions of the world already experience the effects of climate change, and that these effects are likely to become more important in the future.[81] This will have a huge impact on the build environment. In Belgium, we could see an example of this during the floods of July in Wallonia, that left us with thousands of people losing their homes. What would appear first is that we need to construct differently, taking note of the eventual future climate conditions. If we assume that possible natural disasters will happen in the coming years, and that the building infrastructure will not stand them, we will need emergency housing solutions like temporary housing.

6.5 CONCLUSION

Annual counts of the number of homeless and inadequately housed people in Brussels show a steady increase over the past twelve years. In order to address this problem, it is necessary to understand the causes, which lies partly in the general increase in rental prices. This can be contrasted with the high number of vacant buildings and plots of land in the city, which offer an opportunity of space to rehouse homeless people or low-income households. In this context, innovative modular housing projects on empty fields have emerged in Brussels. The present thesis looks into the opportunities of this housing model in terms of quality and affordability, and the barriers against its development. This is done to help stakeholders to provide more affordable housing solutions for homeless people and low-income households. To do so, different case studies are analysed with the help of a grid composed of fifteen dimensions related to living, financial aspects, the dwelling in itself, and the use of the dwelling throughout its service life. The case study consists of three projects of temporary housing on empty fields in Brussels, followed by two companies producing temporary building on a larger scale, the first one having a non-residential purpose and the second one having a residential use. While the first three cases present very concrete examples of recent projects, the last two ones are examples of business models that serve as inspiration for the development of temporary housing on vacant sites.

The different case studies highlight some similar aspects, due to the nature of the housing model itself. One of these aspects concerns the transportability of the modules, considerably affecting capital accumulation and service life. Another aspect is about the temporary use of vacant land, reducing land costs while reactivating empty fields. However, attention has to be paid to the costs related to relocation of the modules, by elaborating a well-thought transport system and choosing for adequate terrains. A third similarity is about the provision of affordable and temporary housing as a social purpose, whether for the homeless or for any low-income household looking for temporary accommodation at an acceptable price.

The different cases also have their own strategies that can be learned from. Among these strategies, there is the integration of the neighbourhood, which creates social contact and mutual help, encourages the acceptance of the modules by the surrounding neighbours, and creates a new network for the inhabitants. Secondly, a co-creation process makes it possible to improve the project by working with experts of different fields, creating knowledge sharing and putting the inhabitants at the heart of the decisions. Another strategy is the disassembly of the modules, having a beneficial effect on capital accumulation, service life and maintenance costs. This also offers the possibility to easily adapt the modules in the future. Finally, efficient

production systems with digital modeling, industrialized production and easy construction can contribute to upscaling. In the case of a more industrial and automated system, it is however important to offer the future inhabitant a certain freedom for customization in order to respond to his needs and wishes.

Because of their innovative and unusual character, the temporary housing projects of Brussels have had difficulties to establish themselves. There are many interrogations that arise to their development today. The legislative challenge is gradually being lifted, but temporary use of land for housing still needs to be anchored in a better defined legal framework. Technically, developers are struggling with connections of modules to electricity and water grids. Also, the concept has to evolve towards and economic model were there is no more need of subsidies. Until now, the projects have focused more on one typology of person which is the single homeless men. Considering other types of households could offer other possibilities, socially and economically. Another challenge is the finding of empty land. Working on these different issues in further research and on the field could enable further upscaling of the housing model.

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ANNEXES

ANNEX 1: INTERNATIONAL TEMPORARY HOUSING PROJECTS

Name	Nature	Year	Place	Topics	ref
APROP	social project	2019	Barcelona	Circular Economy, Dismountable, Ecological, Empty Fields, Prefabrication (modular), Shipping Containers, Social Housing, Temporary Housing	https://diariodesign.com/2020/10/aprop-una-inte
HomeCeption	company		Belgium	Temporary Housing	https://homeception.be/
Rubick's BOXES	company		Belgium	Ecological, Prefabrication (modular), Shipping Containers	
Green Lodges	company		Belgium		https://www.greenlodges.be/contact/
Degotte	company		Belgium	Prefabrication (modular)	https://www.degotte.com/
préfabois	company		Belgium	Prefabrication (modular)	https://www.prefabois.be/
Modulart	company		Belgium	Prefabrication (modular)	https://modulart.be/
Hahbo, Llexx	company		Belgium		https://www.hahbo.be/fr/Accueil.aspx?gclid=CjwKCAjwjtOTBhAvEiwASG4bCPa66BGI
Ark-Shelter	company		Belgium	Affordable Housing, Ecological, Flexible, Mobile, Prefabrication (modular), Temporary Housing	https://ark-shelter.com/
Tiny House Belgium	company		Belgium	Affordable Housing, Mobile, Temporary Housing	https://tinyhousebelgium.be/tiny-houses/
Stido	company		Belgium	Ecological, Flexible, Prefabrication (modular)	https://www.stido.be/
Warsco Units	company		Belgium	Flexible, Prefabrication (modular), Temporary Housing	https://www.warsco.eu/fr/location/habitation
Kabien	company		Belgium	Affordable Housing, Flexible, Temporary Housing	https://www.kabien.be/
Mobble	company		Belgium	Ecological, Flexible, Prefabrication (modular), Transportable/Movable	https://www.mobble.be/

Name	Nature	Year	Place	Topics	ref
ModuleHomes	company		Belgium	Flexible Prefabrication (modular) Temporary Housing Transportable/Movable	https://www.modulehome.be/wp-content/upload
UP SQUARE (website not found)	company		Belgium	Temporary Housing	https://upsquare.be/en/
Transitional social housing project (too big units)	social project	2021	Belgium	Affordable Housing Empty Fields Social Housing Temporary Housing Transportable/Movable	http://www.a2d.be/news/publication-our-transitic
Cofcube (website not found)	company		Belgium (Liège)	Affordable Housing Prefabrication (modular)	https://www.facebook.com/COF3-113028746907
Modulo	social project		Brussels	Dismountable Empty Fields Social Housing Temporary Housing Transportable/Movable	http://www.aissaintgilles.be/Lancement-du-proje
WoonBox	inside building		Brussels	Dismountable Social Housing Temporary Housing	https://www.saamo.be/fr/bruxelles/model/woonb
Home for Less	inside building		Brussels	Dismountable Social Housing Temporary Housing	http://homeforlessbxl.blogspot.com/p/blog-page
'Tiny house' voor daklozen	social project	2018	Brussels	Empty Fields Prefabrication (modular) Social Housing Temporary Housing Transportable/Movable	https://www.bruzz.be/stedenbouw/tiny-house-vo
Skilpod	project by company	2015	Brussels	Ecological Flexible Mobile Prefabrication (modular) Social Housing Transportable/Movable	https://inhabitat.com/skilpod-micro-houses-are-a energy-plus-2/
Moving Nest and Wald Cube	social project	2018	Brussels (Brussels)	Affordable Housing Empty Fields Mobile Prefabrication (modular) Social Housing Temporary Housing Transportable/Movable	https://www.citydev.brussels/fr/projets/bridgecity

Name	Nature	Year	Place	Topics	ref
Solidair Mobiel Wonen : SwotMobiel	social project	2022	Brussels (Jette)	Affordable Housing, Dismountable, Empty Fields, Flexible, Prefabrication (modular), Social Housing, Temporary Housing	https://solidairmobielwonen.be/fr/
Loftcube	company	since 2003	Germany		https://loftcube.net/living
The Mobile Factory	social project	2015	Haiti	Affordable Housing, Circular Economy, Emergency Housing, Prefabrication (modular)	https://themobilefactory.org/plugplay/
Emergency housing for the homeless in London	social project	2017	London	Affordable Housing, Emergency Housing, Empty Fields, Flexible, Prefabrication (modular), Shipping Containers, Temporary Housing, Transportable/Movable	https://inhabitat.com/londons-marston-court-trar
Urgent housing on vacant land in Melbourne	social project	2017	Melbourne	Affordable Housing, Empty Fields, Prefabrication (modular), Temporary Housing, Transportable/Movable	https://architectureau.com/articles/portable-units
Jan snel	company		Netherlands		https://jansnel.com/marktsegmenten/wonen/slim
Hodes Huisvesting	company		Netherlands		https://www.hodes-huisvesting.nl/
Hardeman	company		Netherlands		https://systeembouw.hardeman.nl/woningbouw/
Heijmans ONE	company		Netherlands		https://www.heijmans.nl/nl/producten-diensten/v
Cubestee	company		Netherlands		https://www.cubestee.nl/
De Meeuw / Nezzt	company		Netherlands		https://www.demeeuw.com/markten/wonen/
Cube homes	company		Netherlands		https://www.cube-homes.com/nl/
Casco Totaal	company		Netherlands		https://www.cascototaal.com/
Barli	company		Netherlands	Affordable Housing, Circular Economy, Prefabrication (modular), Temporary Housing, Transportable/Movable	https://www.barli.nl/

Name	Nature	Year	Place	Topics	ref
C3 living	company		Netherlands	Affordable Housing Circular Economy Prefabrication (modular) Social Housing Temporary Housing Transportable/Movable	https://c3living.nl/oplossingen/projecten
Plug and play housing	company		Netherlands	Affordable Housing Circular Economy Prefabrication (modular)	https://www.plugandplayhousing.com/en/
TempoHousing	company		Netherlands	Prefabrication (modular) Temporary Housing Transportable/Movable	http://www.tempohousing.com/projects/
Finch buildings (De Groot Vroomshoop)	company		Netherlands	Circular Economy Prefabrication (modular) Transportable/Movable	https://finchbuildings.com/
Uuthuuske	company		Netherlands	Affordable Housing Dismountable Flexible Prefabrication (modular) Temporary Housing Transportable/Movable	https://www.uuthuuske.nl/
Skeave Huse	project by company	2006	Netherlands (Amsterdam)	Prefabrication (modular) Shipping Containers Social Housing Temporary Housing Transportable/Movable	http://www.tempohousing.com/projects/skaeve-l
KEETWONEN	project by company	2005	Netherlands (Amsterdam)	Prefabrication (modular) Shipping Containers Temporary Housing Transportable/Movable	http://www.tempohousing.com/projects/keetwon
LOT-EK	company		New York	Mobile Shipping Containers	https://lot-ek.com/MDU-Mobile-Dwelling-Unit-co
Container Temporary Housing	social project	2011	Onagawa (Japan)	Emergency Housing Mobile Shipping Containers Temporary Housing	https://arquitecturaviva.com/works/viviendas-ter
Viviendas para inmigrantes	social project	2019	Spain (Almeria)	Prefabrication (modular) Social Housing	https://customhome.es/casas-contenedor/vivien
Temporary modular housing	social project	2020	Vancouver	Empty Fields Shipping Containers Temporary Housing	https://vancouver.ca/people-programs/temporar

ANNEX 2: INTERNATIONAL TEMPORARY BUILDING COMPANIES

Name	Place	ref
Algeco	BELGIUM (Beringen, Thorembais-les-Béguines)	https://www.algeco.be/fr
Portakabin	BELGIUM (Braine-l'Alleud, Melsele)	https://www.portakabin.com/be-fr/
Skilpod	BELGIUM (Geel)	https://skilpod.com/en
CMDH	BELGIUM (Genappe)	https://cmdh.be/
Degotte	BELGIUM (Herstal)	https://www.degotte.com/
Symobo	BELGIUM (Kampenhout)	https://www.symobo.be/fr/home
DS units	BELGIUM (Merchtem)	https://www.dsunits.be/
Real	BELGIUM (Sint-Gillis-Waas)	https://www.real-nv.com/fr
Modulco	BELGIUM (Strépy-Bracquegnies)	https://www.modulco.be/fr/accueil
Gecima	BELGIUM (Villers-le-bouillet, Wavre)	https://www.gecima.be/fr
Hahbo (Llexx)	BELGIUM (Wijnegem)	https://www.hahbo.be/fr/Applications/Accueil.aspx
De Meeuw	BELGIUM (Willebroek) , NETHERLANDS	https://www.demeeuw.com/en/market/
Idelco	BELGIUM (Zwevezele)	https://www.idelco.be/fr/
BOXX Modular	CANADA	https://www.blackdiamondgroup.com/boxx-modular/canada/quebec/batiments-modulaires/
Capsa	FRANCE	https://www.capsa-container.com/
Pro Contain	FRANCE	https://www.procontain.com/fr/applications/
Modul Market	FRANCE	https://modulmarket.fr/
Containex	FRANCE	https://www.containex.com/fr/fr
Cougnaud services	FRANCE	https://www.cougnaud-services.com/solutions/batiment-modulaire/le-batiment-temporaire/
KT modules	LITHUANIA	https://ktmodules.com/
Warsco units	NETHERLANDS	https://www.warsco.eu/
Zovos Eko	SLOVAK REPUBLIC	https://www.zovos-eko.sk/en/
Europa Prefabri	SPAIN (Madrid)	https://www.europa-prefabri.com/fr/
Prefabrik Yapi	TURKEY	https://fr.prefabrikyapi.com/
Module-T	TURKEY	https://module-t.com/
Karmod	TURKEY	https://karmod.eu/products/modular-buildings
Untitled		

ANNEX 3: INTERVIEW 1 - GERALDINE BRUYNEEL

0. To start

What is your implication in the project?

I'm the manager of the project, this means that my role is meanly to try to find terrains, try to coordinate everything that has to do with the building. So I am more like a Networker, trying to organize the expertise's that are needed around topics we need to solve. So that is a bit my main goal for the project.

What is the current situation in Jette. Are the two units finished and when will the inhabitants move in?

So for the site in Jette, we have a site convention of temporary use. What we have there is that we have contracts, its legal. We did a kind of negotiation with the Imam who assured us, because it took about 6 month, the negotiation, because he wanted to make sure the people from his community where on board with the project, which I thought was absolutely necessary. And they said 'as long as we don't have the permit for the mosk, you can stay'. So that was also in the contract. And then he launched the permit, but it was refused because it was a very very big project, and very expensive, and it was problematic for different reasons, so it was not accepted. And then his community was very angry with him, so they didn't want anything anymore on the terrain. It was not because of us but… So legally we can stay, but it is not a comfortable situation to put people in. And that is a bit a problem for temporary use so you have a lot of spaces but there is not a lot of availability. Fin, there is a lot of empty space but to get access it is really not so easy. And so we continued to finish, they are not totally finished, the 4 units. But the idea is to, when we have another terrain, to be able to put them on another terrain. Because it is not a good idea to stay there, even if it is a real pithy because we invested kind of a lot in that site. So for the moment we are negotiating for other terrains. So we have a few options, mainly in Anderlecht, so that wouldn't be too bad because that is where the 7 inhabitants are already living now into buildings, into apartments, into houses. So that would be interesting to maybe stay there, also because they have domiciliation, or they have already someone from the CPAS. So we are looking into that, and also in Molenbeek we have a few leeds but we don't have anything signed yet, so that is what we really are looking for. So Jette it is a story that is finished because it is not…

1. COMFORT

How did you chose for the placement and orientation of the units on the site in Jette?

First of all we chose to have 2 blocks of 4 units, because that was, for this project it was kind of a cost thing also because the less units you put together, the more it cost, because you have the production of more panels, but we also looked at the site and we made an implementation plan on the site, where the panels can be placed according to kind of need, for example one of the inhabitants likes to draw so he likes to have the lights, the big window to be able to do a good drawing. So we already did some simulations on other sites where we had more a longer shape and more, yeah.. But, for this one, it was more kind of a thing about the price and a thing about orientation also, yes.

2. NEIGHBOURHOOD

There is a real search to create a link with the neighbourhood but the units will move after some time, will you start it all over again?

Yes, this is really part of the model actually, that the group on itself can have these links between them because their network is not so big anymore, so it is kind of rebuilding a network together, but also with the neighbourhood. So ,

ideally we can stay for a couple of years, also, so you have the time to create these links, and also you are very visible also on the terrain, so it is also important to be able to have these links and also to maybe have, if possible an attachment to the future project, or also for the inhabitants with maybe their future in the neighbourhood, if there are opportunities or possibilities, who knows. So for different reasons I think it is important.

Do you have a clear number of the available site you can choose from?

No, in the beginning what we asked at perspectives to have list of the sites that kind of met our requirements. End, there was a big list, but it was not readable, so, luckily we had an architect in our team who could translate it, just to be readable already. But there is no clear inventory of empty sites, so you have different players who have different sites, but you don't have like this clear, they did count it once and there is about 411ha of space sites. So this is a number, that has been used by 'le RBDH', but it is very dispersed I have the feeling, it is not something… like in Amsterdam you have a clear mapping of sites that are available, how long they are available. Here it is like very much, you have to go and look in different, you have to look citydev, you have to … everyone has its own rules and it is very complicated.

There is a huge opportunity of space, that is for sure, but yeah it is very difficult to get access. That is kind of absurd.

6. SOLIDARITY

Did Brussels participated to the funding with the call for tender by the minister for housing?

Yeah, so we got 2 main subsidies. The first one is Innoviris co-create. So where we also had this research aspect but where we also built, try to build the research. So it is also a very bottom-up project which has up-sides and down-sides maybe. Enfin it is always an up-side but it is not always easy. So that was a part of the funding and another part of the funding was by also, yeah, the call for tender in which Infirmiers de Rue (IDR), Modulo was also chosen.

Did you received other subsidies/financial help?

Yeah, so we really like laid down kind of a puzzle, we also had some subsidies from la foundation Roi Baudoin, from… and then also things that have to do with neighbourhood, integration from the VGC (it is like the cocof but for the Flemish). And also, because we also provided a skill-building part, we also had some funding by Actiris.

7. TOTAL COST OF OWNERSHIP

Who is owning the land?

Actually, it is a cultural organization, 'Avarroès', from the philosopher. And they mainly want to build kind of cultural center, mosque,… I don't know, their project I think has changed a bit, because it was so big, so but mainly it is a kind of a mosque/library/… And actually the land has been purchased by the different people from the mosque who gave money, so it is not something subsidized from outside, it is the community that…, so maybe that is also why there is this really emotional bond of course to the site, I guess.

How open are land owners to rent their sites temporarily?

Yeah that is what we also try to highlight so what is the advantage. So some of them are really very open, like 'community land trust', or 'un logement pour tous', but you need to have a match, also like because Community Land Trust also for the moment they don't have any land, but they are very open to it because it is a perfect match with

their kind of project. And then un logement pour tous, they proposed a land but it was like, haha, it was a kind of a , a tremple so it was not possible, there were very high differences in levels and it was not possible of course, but they are kind of open to the idea. Or we also had maybe a proposition but is was in Flanders, and so we can't do it because it is not… we are subsidies by brussels. But those are very open. And then you have others, they are very like, it depends. I think you have a lot of big projects for the moment like Casernes, and Josaphat and all that kind of… and they are kind of open to temporary use but I have the feeling, and I am not the only one, that housing is last on the list like, they don't really… I think they like the more commercial stuff, the more attractive, fun stuff. But you can feel that for housing it is still very difficult to get access to that kind of terrains. So it depends you have really a whole diverse… I also had like oh it is going to be built very soon, and then actually it is not, like. So yeah you have a multitude of …

maintenance and repair/replacement : *Are the building components integrated so that they can be reached and recovered without much effort or damage*?

Yeah that is the philosophy also the technics are easily reachable so you can really access everything and I also have a building coordinator now on the team which is something we really lacked before. And he is also making a digital library, so that every panel is numbered so that when a panel is broken that you can order a new one, so to have this more professional approach to your houses. And that is what we also see with the first prototype that you went to see, yeah that was very difficult. And now we are looking to work with a more professional builder and it is a totally different story. So it is also trying to professionalize that.

Who is financially responsible for the maintenance costs?

We are SAAMO, we are the constructors, we own the houses.

8. CAPITAL ACCUMULATION

What is your financial model? How much responsibility goes to the inhabitant in relation to the financial model?

The inhabitants, already now, they pay for the houses they are living in now, so they pay a contribution it's not 'un loyer', it is more like a contribution for temporary use. But they do pay a low amount, all included. That money is kept aside if it is necessary to do repairs or other things, so we have to use it sometimes, because also in the building the heating broke down, or something. So it will be used for repairs. We also have someone on the team who is more technical, who can also do repairs for them. Also when they move into the new units they will also be able to 'épargne une partie'. So there will also be a small amount that is also kept and that money they get back when they leave the project so it gives them a kind of amount that they can use maybe for when they move to an apartment or something.

9. FAIR INITIAL COSTS

What is the cost of 1 unit?

More or less 50 000€. So now because the 4 next units we are redeveloping some aspects, like the principle stays the same, but the trailer system, so now every house has a trailer, but there are systems now that you don't need to have a trailer for every house because it's actually quite expensive if you do this. So you could actually also work with kind of a platform. Or also the choice of the wood, especially now that the price of wood has gone up really badly. So of course we still want to keep that quality of 'durabilité' but we are also working with possible future producers, how we can cut down on the costs but still be qualitative. So it will be around, I guess, 50 000€/unit, yeah.

10. ADEQUATE LIVINGSPACE

Do you think the inhabitants would feel comfortable in the 35m^2 living space today? (with the big change with their life of before on the streets)

Yeah that would be also the experience. So, we don't know. They came from 'des maisons d'acceuil', so where they didn't had any space at all. But for the moment they are staying in 2 houses where they have actually more space now, but the houses are going away, they are being demolished. Not because they are being in such a bad shape but it's because of 'un contrat de quartier'. But this will be the thing, like, how will this be for them? Maybe for some of them it will not be as they thought or maybe for others it can be very much what they like, so this will be also to see, if it suits everybody.

15. TOTAL COST OF USERSHIP

Is the rent of the users variable in function of their energy and water consumptions? How much is the rent?

Yes, so every unit will have its own electricity counter. But for water the idea is not to do it because it doesn't really make sense. So I don't know, because I am not really a technical person, I don't know if we will stick to that but we decided that we wouldn't do that. But every inhabitant will pay their consummation, so maybe in a later stage it could be interesting to see how we can maybe invest in kind of energy production but we're not as far yet. But that could be for the future, how we cut down on costs on energy.

---- still some time left → other questions asked

1. COMFORT

Accessibility : Is it possible for users in wheelchairs to access/live in the units?

No, for the moment there is not. So that is also interesting. The project was developed with the people themselves and a whole group and also students. And I was once at 'une bourse pour habitat léger', and there was this girl who was in a wheelchair and she asked, and I said no actually not because it was not thought of. So this was a very good point that she made. So that is something we also need to look into for the development, for next ones. So that's something we need to think about, because also, even the door is not wide enough. That is something you really become aware of, it's developed from your own point of view from yeah people who do not have problem to access. So that's something we are also looking into.

Are the materials complying with norms and regulations on environmental and human toxicity?

I think for the most parts yes, but I would have to double check with the architect, so for the most part yes, so we have like for example wood that is impregnated with vinegar, so it's saturated but it's not with a kind of toxic thing. We are also working with 'argile' for the walls. We are working with steel so that's something that goes a long way. I think the only thing that is kind of toxic and that we also have to rethink for the next 4, is that the bathroom is a kind of unit like a boat, where they work with polyester. So that is not very ecological I think. So I understand the idea but it's very difficult to work with, and it's not very ecological. So I think mostly yess, but not everything yet.

2. NEIGHBOURHOOD

Are the inhabitants supposed to move with the units when they will be relocated?

Yeah what we said was that, especially with that group of people, people are not ready to make the move, can stay. And that's something we want to stick by but we are also seeing the reality for the moment that it is so difficult to access, that the people have been a long time, long time in the project, and it's still not there, mainly because of the terrain but also because of the production of the first 4 ones, with the social entrepreneur it was a very difficult process. So the idea is yes but we will have to see how we do this because we don't want to give false hope to people also. So it's something we really need to address, how we will do that. But the idea is yes, if it's possible and people are not ready, they can move to another site yes.

But, as I said, I am confident it's going to happen, but it has been such a slow process and sometimes a very difficult process. We need to rethink a little bit how we work on that.

7. TOTAL COST OF OWNERSHIP

Do you have to pay taxes for the owning of the units?

Not that I know of, no. Not yet, I don't think so no.

8. CAPITAL ACCUMULATION

Are the materials chosen to last in time?

Yes, like the Tricoya Accoya is something that is very durable because we wanted to make sure that it doesn't lose its form, especially if you mount and demount, and so it can have a long durability. Also with the steel columns. So that's the idea actually, yes.

Do the components have a standardized shape and size?

Yeah, normally they should be. As you saw maybe with the first 4, it was too much conceived as traditional built, but for the next 4 the idea is that it is in a production line and that you have these standard shapes. That was the idea with the first 4 but it was difficult, so we will need to, when we demount it we will also need to rebuild some things I guess. We want be able to take it totally like it was, but that's the idea. Also for the new production, the idea is that it is built in atelier, and then it's assembled on the site, maybe with lower-skilled people that can assemble it or that you don't need super big skills but that they can help mount it.

11. SCALE

Do you think that a scaling up of the project could diminishing the total costs?

Yes, now we are really in a developing stage and it's I think more costly, also if we would produce more, the cost I guess would go down, so we are also having a reflection, in our organization itself like how would our solutions, inside and outside, how are we going to scale it up, who is going to do this because we are an asbl, this is not our core business. So first, we still need to really build and prove our project of Solidair Mobile Housing because it has not been lived in yet. But once it is built and lived in, it is the idea to be able to maybe present it as kind of solution, and to create a separate entity that can sell, etc, so we are looking into all that. But first we need to complete this project and then once the prototype is totally finished and that the model is clear, then we have to see like how can we scale this up and who could be interested, so that is also stuff that we are thinking about.

16. End

After the experience you gained, do you still think it has a potential to work with temporary housing on empty fields? What are the positives or negatives points? What are the challenges?

Yes, I do still believe in it, I think, I do believe in the model, but the access to sites… As said, there is enough but the access is very difficult, so this will be really important in the future. If we want to have a future, we will really need to have this. And also legally there are still constraints that are being worked on now, but also that is very important to be able to do this. So these 2 aspects are super important to have kind of an impact.

ANNEX 4: INTERVIEW 2 - MAXIME BONAERT

0. To start (Pour commencer)

Quelle est votre implication dans le projet ? Quelle est la situation actuelle du projet ? A Forest, quelles sont les types de modules (Wald Cube / Moving Nest / autre types) ?

Je vais te refaire un peu l'historique, je pense que ça peut être intéressant. Donc moi j'ai été engagé il y a 1 an. Plus d'un an maintenant, en janvier. Mais le projet module a vraiment commencer à germer dans la tête d'infirmiers de rue plus ou moins en 2016. A ce moment-là ils se sont rendus compte que capter des logements pour reloger des personnes sans abri, c'était vraiment compliqué. Donc c'était dur d'aller chercher, motiver des bailleurs, de leur donner des logements. Et donc ils se sont dit voilà, on a des partenariats mais ça va pas assez vite, parfois justement on conçoit des appartements mais ça peut prendre 4, à 6 ans parfois. Donc ils se sont dit il faut qu'on parvienne à créer du logement nous-mêmes pour en être propriétaire et décider. Donc ils se sont dit on va se lancer dans le logement modulaire. Puis en 2018 il y a eu un appel à projet de la ministre du logement Fremault, qui avait offert 1 million d'euro pour des projets d'habitat innovants. Donc c'est comme ça que SAAMO, Diogenes, l'Ilot, on a tous répondu à cet appel à projet. Nous c'était pour le projet Moving Nest. Donc c'est comme ça que, à l'époque, Infirmiers de Rue a acheté le Wald Cube, et Habitat et Humanisme, avec qui on était en partenariat, a acheté le premier Moving Nest. Et on les a placé sur le terrain au Pont Van Praet, donc sur un terrain que Citydev nous avait prêté pour 3 mois. Et au final on est restés 2 ans et demi. Donc c'est intéressant. Parce que ce qui était compliqué c'était de défricher complètement le terrain, le législatif, juridique par rapport à ça… Au départ nos modules étaient pas considérées comme du logement, donc c'était compliqué… C'était une phase test, oui, c'était pour montrer, voilà il faut le faire.

Et donc au départ on avait pas de permis d'urbanisme pour les 2 modules au Pont van Praet. Puis après ça, Citydev voulait récupérer ce terrain-là, ce qui était logique. On signe toujours des conventions d'occupation temporaire de 2 ans, c'est pas un contrat de bail quoi, y'a pas de loyer à payer, c'est juste 2 ans, c'est précaire mais c'est renouvelable. Et donc c'est comme ça qu'ils nous ont proposés ce terrain-ci ou on va pouvoir mettre 6 modules. Et c'est comme ça que les… ces 2 modules-là ont déménagés fin aout. Et les 2 autres derrière étaient déjà là mais ils étaient pas encore habités, donc maintenant ils le sont, et donc maintenant ta le nouveau qui est arrivé ici fin décembre et les 2 autres vont arriver dès que celui-là sera parti.

Quand ils ont mis les 2 modules sur le pont van Praet ils se sont dit c'est génial ça va dérouler, on a fait le plus dur, et en fait pas vraiment. Il fallait encore tout faire, donc obtenir le 1er permis d'urbanisme, et puis continuer à établir des partenariats, trouver des nouveaux terrains et ce genre de choses.

Donc à l'époque c'était un petit peu tout le monde au sein d'Infirmiers de Rue, enfin pas tout le monde mais quand même pas mal de gens, qui faisaient un petit peu tout. Mais du coup la formation se perdait, il y avait des trucs qui prenaient trop de temps. Et donc ils se sont dit si on veut vraiment arriver à mettre ce projet en place et pour qu'il grandisse, il faut qu'on puisse, enfin il faut qu'on engage quelqu'un qui soit dédié à ça à 100%. Et c'est comme ça que je suis arrivé vraiment pilepoil au bon moment. Parce que moi j'ai vécu en Tiny House à Bruxelles, pendant 2 ans.

On a dû partir la en octobre, parce que la région est revenu vers nous avec... Et donc c'est ça on a forcé un peu la chose, on savait très bien que c'était pas légal mais on essayait de montrer qu'il y avait une autre manière de vivre à Bruxelles et qu'il fallait pas d'office passer dans du logement traditionnel, et donc on a essayé de montrer, on a essayé de faire bouger les lignes mais voilà la commune était vraiment intransigeante ils ont dit non, les règles c'est les règles, nous on ne fait qu'appliquer le règlement régional d'urbanisme qui est dicté par la région donc c'est pas à nous de décider si on peut ou pas vous autoriser. Donc ils nous ont dressé un procès-verbal d'infraction qui a été envoyé à la

région, puis la région est revenue vers nous avec une grosse amande. Mais on a toujours pas de nouvelles. En gros c'était 'l'amande maximale provisoire est de 5700 euros', si on restait là, et en plus si on restait longtemps ça risquait de doubler. Et donc là à ce moment-là on a décidé de partir, et ça faisait déjà 2 ans, ça allait, et puis on a un enfant on aimerait bien.. fin bon c'est pas le sujet aujourd'hui mais bon on savait très bien que la vie en Tiny House pour nous allait se terminer. Donc on était juste un peu forcés à partir mais on allait bientôt s'en aller aussi quoi.

Donc moi je cherchais quand même avec des copains de développer ce type d'habitat, essayer de trouver des friches à Bruxelles, pour mettre ça en place, essayer de comprendre un peu plus la législation et ce genre de choses. Et puis c'est comme ça que de fil en aiguille je suis tombé sur l'architecte du projet ici qui travaille en free-lance pour infirmiers de rue, et c'est comme ça qu'elle m'a mis en relation, et c'est comme ça que j'ai trouvé du boulot, et c'est comme ça que je suis arrivé ici. Donc c'est vraiment toute mon affinité pour l'habitat léger et pour le droit au logement sur Bruxelles qui a fait que je suis arrivé au bon endroit, au bon moment, et maintenant je travaille ici pour Infirmiers de Rue.

Mais donc mon rôle principal c'est vraiment ça, c'est trouver des partenariats avec des propriétaires terriens pour activer des terrains, trouver des friches.

Pour le moment Citydev c'est vraiment un partenaire privilégié. Parce que Citydev c'est la société de développement et de rénovation urbaine et en gros c'est régional, ils ont beaucoup d'argent et ils ont beaucoup de foncier, ils rachètent à tour de bras un peu partout. Y'a beaucoup de projets Citydev, donc c'est des logements acquisitifs à prix plancher, qui t'empêche de revendre avec une plus-value pendant je pense 25 ans. C'est quand même un modèle assez intéressant pour essayer de geler un peu les loyers pour éviter la surrenchère. Donc c'est des modèles intéressant, ou parfois ils achètent des terrains et ils les revendent à des promoteurs immobiliers et donc après ils imposent parfois certains logements ; il faut X logements sociaux, X logements moyens. C'est pas toujours nickel nickel mais bon c'est pas mal.

1. COMFORT (Comfort)

Lumière du jour : Comment avez-vous choisi l'emplacement et l'orientation des unités sur les différents sites ? (Bruxelles et Forest)

Ici c'est pas vraiment moi qui ai choisi parce que c'était l'architecte de l'époque qui avait déjà fait le plan d'implantation. On a décidé de tourner les modules plutôt vers le bois. En tout cas pour les 2 modules qui sont au fond c'est très très chouette parce qu'ils ont une super vue sur du vert, ce qui est très beau. Donc c'était d'un côté pour éviter le vis-à-vis avec les passants et les gens qui passent sur le trottoir, et d'un autre côté c'était pour éviter la surchauffe en été à cause du soleil. Parce qu'on a quand même des grandes baies vitrées ou des grandes fenêtres.

Et donc ça c'est tous des retours d'expériences qu'on a eu de nos locataires ; Et donc on a essayé de mettre ça en place pour leur apporter un minimum de confort, et c'est comme ça aussi qu'on a décidé de se débarrasser de ce module-là qui n'est plus du tout vraiment bien pensé, il est plus nickel. Donc on a essayé d'évoluer et c'est comme ça qu'à chaque fois y'a plusieurs modèles. Le premier qui est pas terrible et puis on a les 2 là-bas derrière qui sont déjà un peu mieux. Y'a mon expérience en Tiny House qui fait que j'ai déjà certaines idées, certains aménagements, y'a le retour des locataires, et puis en fait après à chaque fois on discute avec de nouveaux constructeurs, c'est ça le problème aussi c'est qu'on a du mal pour le moment…

C'est pas toujours les même ; ici on a Ecolodge, là on a les français, derrière ça a été genre 2 artisans qui ont été trouvés par Habitat et Humanisme, et qui se sont dits tien on va faire du modulaire c'est génial c'est facile. C'est pas si facile que ça non plus, y'a quand même pas mal d'expérience à acquérir c'est pas juste une boîte. Puis maintenant on a trouvé encore d'autres constructeurs, qui sont très très chouette, qui ont été en fait les seuls à l'époque (on cherchait de nouveaux constructeurs) à se poser à la table avec nous et à réfléchir à des modèles, pour pouvoir l'améliorer. La

plupart du temps, quand on va dans les grosses boites, les grosses entreprises, ils ont leur modèles et ils disent voilà, si vous voulez ça, ce sera autant, point barre. Et donc on a très peu de marche de manœuvre, ce qu'on aimait pas trop au départ. Mais voilà avec eux c'est plutôt un collectif. Vraiment des artisans, c'est pas du tout des professionnels dans le sens où ils ont pas une ligne de travail. Donc ils ne peuvent pas nous sortir 3 modules par mois par exemple. C'est très compliqué de sortir 3 modules par mois mais ils ont un peu plus de mal à suivre la demande. Donc là on leur a commandé 3 modules, toujours avec le subside Fremault, et donc ça va mais maintenant on aimerait bien que le projet grandisse et qu'on puisse doubler, voire tripler le nombre de modules assez rapidement et on sait qu'ils vont avoir du mal à suivre.

Là on a déjà d'autres terrains, on a déjà signé une convention avec le CPAS de 1000 Bruxelles. Pour un terrain à Leden Morenbeek ou il y aura 6 modules, et il y aura un terrain à Jette ou il y aura 2 modules. Et donc ça c'est le prochain projet et puis on a d'autres terrains.

Ce sera des nouveaux modules maintenant c'est vraiment ça il faut qu'on, on est en recherche de nouveaux subsides ou en tout cas de nouvelles donations ou de nouvelles manières d'investir dans les modules pour qu'on puisse continuer à en construire. Parce que pour le moment les terrains on les trouve, côté administratif ou législatif on a trouvé une solution donc maintenant ils sont reconnus comme du logement donc on peut s'appuyer là-dessus pour aller motiver les autres communes et leur dire écoutez c'est possible, voici comment on a fait avec Forest par exemple. Donc maintenant on sait que y'a moyen, et ce qu'il nous faut c'est des sous, pour pouvoir continuer à construire.

Accessibilité : Les personnes en fauteuil roulant peuvent-elles accéder aux logements ou y vivre ? (porche..)

Pas pour le moment : quelque chose à creuser.

2. NEIGHBOURHOOD (Voisinage)

Le voisinage est-il impliqué dans le projet ? Par exemple, activités sur le site/ sensibilisation et information ? (ou pas car variable quand les unités déménagent ?)

Ici en fait on s'est pas vraiment rendus compte, on a pas de voisins directs. Donc il y a beaucoup de gens de passage, il y a la gare juste ici au-dessus, la commune mais qui n'est pas habitée pour le moment il sont en travaux depuis 2/3 ans et ils seront encore en travaux pour 2 ans, on a le commissariat qui est juste en face. Là on est quand même un peu en contact on a dû aller se brancher chez eux d'ailleurs pour l'électricité. Pour ce terrain-ci on a réfléchi à comment bien communiquer avec le voisinage, mais on avait l'impression de pas vraiment impacter le voisinage, donc on a pas vraiment communiqué.

Mais on a eu des retours de voisins qui sont en fait là-bas au fond. On a eu une campagne de presse il y a 2 semaines/1 mois donc suite à ça on a quelques retours. De toute façon c'était prévu mais maintenant on va vraiment faire attention à les inviter. Et donc le jour de l'inauguration du terrain, quand les 6 modules seront là, on invitera du coup la commune, les partenaires, et les riverains, pour leur parler du projet.

Et c'est vrai que les retours qu'on a eu sont assez positifs par rapport au projet. En disant c'est génial. Il faudrait communiquer plus en fait ils étaient un peu déçus de pas être au courant de ce qu'il se passait ici sur Forest sur ce terrain-ci. Et ils étaient surtout un peu énervés de la commune qui ne communique pas assez. Mais finalement y'a quand même pas mal de gens qui passent, et nos locataires aiment bien avoir ce contact avec les riverains, fin en tout cas les passants. Donc en général c'est eux qui leur raconte le projet. Et on a vu dernièrement ici, il a déjà reçu des fleurs, la dernière fois quand je travaillais ici il y a quelqu'un d'en face qui a apporté le surplus de sandwich qu'ils avaient

reçus. Au final ça se passe assez bien et c'est assez chouette dans le quartier, ils sont assez bien reçus. Mais c'est vrai qu'il faut faire attention et sur le prochain terrain on a vraiment beaucoup d'habitations, et le mot commence à passer qu'il va se passer quelque chose sur ce terrain et donc y'a déjà pas mal de riverains qui s'inquiètent un petit peu qui se demande quoi. Donc là on sait qu'o doit déjà mettre en place une sensibilisation pour leur expliquer pourquoi le projet, combien de temps, pour pas qu'ils aient peur.

Comment choisissez-vous de nouveaux sites ?

Pour le moment on travaillait beaucoup avec Citydev, donc c'est plutôt eux qui nous propose des terrains et nous en fonction du terrain, on décide de se lancer ou pas. Sur ce terrain-ci c'était plutôt, on avait le terrain, il fallait montrer que ça pouvait vraiment fonctionner donc on s'est lancé un peu à corps perdu. Ce terrain est vraiment très chouette, moi j'aime bien parce que y'a pas beaucoup de passage, on est assez au calme, y'a le petit bois derrière. Mais par contre d'un point de vue technique et raccordement c'était vraiment super dur parce que c'est un intérieur d'ilot ou jamais rien n'a été construit. Donc y'avait pas d'électricité sur cette partie-ci du terrain, y'avait pas d'eau, et pas d'évacuation. Donc ça on a dû prendre en charge, tous les raccordements, et ça coute vite très très cher ; pour le terrain ici on tourne autour des 34/35 000 euros d'investissement pour raccorder les modules pour qu'ils soit viables. Mais déjà par exemple rien que la demande de raccordement à l'eau donc Vivaqua, pour l'eau et l'égout ; l'égout c'était 7000 euro, l'eau on était à 2400, pour l'électricité on est à 2200, plus il fallait acheter un coffret supplémentaire avec des compteurs passage. Donc en tout, pour l'activation de ce terrain, tous les raccordements on est à 35 000 euro.

On travaille d'un côté un fait un peu de lobbying pour essayer de diminuer les plus gros couts, c'est vraiment les couts de raccordement. 7000 euro pour le raccordement à l'égout, c'est un gros trou dans la voirie, c'est sur 4m ils te mettent le tuyau, mais après tout ce qui est raccordement sur le terrain ça c'est encore à nous à faire en plus. Donc si on pouvait déjà éviter de payer ces 7000 euros ce serait quand même vachement intéressant. Ou bien trouver un terrain, qui possède déjà une évacuation à l'égout, et ça c'est déjà des sommes économisées. Parce que tout est subsidié, tout le projet ici donc les modules, y'a pour le moment les subsides de Fremault et tous les raccordements il faut qu'on trouve des donateurs. C'est souvent des Rotari, des 'Clubs de gens bien' qui ont beaucoup d'argent et qui ont des projets sociaux. Il faut faire avec c'est pas toujours évident c'est très machiste, très sexiste, y'a très peu de femmes dans ce genre de trucs, c'est souvent des vieux croulants de 60ans et plus, mais c'est là ou y'a de l'argent. Donc c'est surtout vers eux qu'on va. Après on a aussi des donateurs un peu particuliers.

Les habitants restent-ils lors du déménagement et si oui, peuvent-ils participer pour choisir les nouveaux sites ?

Ça ils sont vraiment libres de faire ce qu'ils veulent. Donc ils sont au courant quand on leur propose une entrée en logement dans un module, on leur dit bien que le module est voué à déménager en fonction des accords qu'on a sur le terrain. Donc souvent c'est 2 ans. Par exemple ici donc on a signé une convention de 2 ans, mais on sait qu'il y a encore aucun projet immobilier qui va prendre place sur le terrain. Il y a des projets, enfin il y a des idées, mais il n'y a encore rien qui est lancé donc on sait qu'on a encore... officieusement on sait qu'on a 4/5 ans ici. Peut-être même plus parce qu'un des projets qu'ils ont sur le terrain c'est vraiment de tout raser et d'enlever tous les arbres et de construire, et là on sait déjà que les voisins et la commune ne vont pas être d'accord parce que Forest c'est très écolo, très vert donc faut pas toucher aux arbres. De ce point de vue-ci sur le terrain on a bien choisi parce que du coup on va pouvoir rester longtemps. Donc là ça va être intéressant on va pouvoir rentabiliser les investissements qui ont été faits.

Mais pour d'autres terrains c'est vrai que le terrain du CPAS par exemple, là on sait qu'on a une date de fin parce que eux ont un projet et à moins qu'ils aient un peu de retard on va peut-être gagner 6 mois ou un an au maximum mais

on sait qu'il y a un projet qui va avoir lieu, ça va construire et donc à ce moment-là on va devoir partir. Mais ça c'est exactement ce qu'on essaie de démontrer c'est qu'on peut valoriser ce terrain-là et à la place de le laisser en friche pendant 2/3 ans et rien en faire bah nous on assure déjà une présence sur place et ça permet de reloger et de mettre en sécurité nos locataires, nos patients. Et pour le propriétaire ça peut être bénéfique aussi pour éviter le squattage, pour éviter les dépôts clandestins et ce genre de chose. Donc c'est tout ce qu'on essaie de mettre en place. Donc ça, ça commence à bien fonctionner et donc il commence à avoir un écho quand même intéressant de la part des propriétaires ou ils se rendent compte que ça peut être intéressant pour eux. Parce que maintenant trouver des terrains ça commence à être facile.

Même si en fait à Bruxelles il ne reste pas énormément de terrains disponibles non plus donc on sait qu'il y a un peu une durée de vie limitée avec ce projet-là. Enfin il en reste mais après ça devient très loin du côté d'Anderlecht y'en a beaucoup, du côté d'Evere/Haren y'a encore pas mal mais on va être amené à bouger un peu partout dans Bruxelles. (Ils ont toujours envie de construire ça c'est le problème même les dernières friches dans les endroits de biodiversité on essaie de se battre pour les sauvegardez mais ils ont envie de construire; sur la friche Josaphat, le champ des cailles, le marais Wiels, fin y'en a plein, enfin il en reste quoi. Il y a une petite dizaine de sites à préserver à Bruxelles mais il y a des projets immobiliers sur tous les sites parce que c'est du foncier quoi il faut rentabiliser, il faut construire.)

Quelle est la durée d'occupation du site ?

On signe des conventions d'occupation de 2 ans, qui sont renouvelables. En fait notre principe, et c'est ce qu'on essaye de montrer au propriétaire (terrien), c'est que y'a moyen de valoriser les terrains qui sont ou bien en friche ou bien en attente de permit d'urbanisme, qui justement cette période-là d'attente, qui dure souvent parfois 2/3 ans. Donc à la place de ne rien faire de ce terrain, on essaye de démontrer qu'on peut amener des modules assez rapidement, temporairement. Et donc souvent on signe des conventions de 2 ans, ça c'est vraiment le minimum pour nous. On s'est dit si c'est moins de 2 ans, tous les frais de raccordement…

3. SOCIAL CONTACT (contact social)

Comment se passe le partage du site entre les habitants ?

Donc c'est la première fois où on aura 6 habitants sur le même terrain donc on n'a pas encore vraiment beaucoup de retours. Depuis fin janvier ils sont 4, depuis fin novembre 3, et ça se passe assez bien. Parce que justement ce qu'on trouve vraiment intéressant avec les modules, avec les personnes aussi qui acceptent de rentrer dans un module parce que ça ne convient pas à tout le monde, il y a des gens qui refusent d'aller dans un module et c'est tout à fait compréhensible. Pour ceux qui acceptent il y a quand même beaucoup de plus-values, en fonction aussi de de leur propre profil et de leurs envies et ce qu'on a souvent c'est que, et pour l'habitat léger, donc c'est ce qu'on aimait bien aussi en Tiny House c'est le fait d'ouvrir sa porte et d'être directement dehors. Donc c'est un peu comme si tu vivais dans ta dans ta véranda en fait. Et donc il y a ce contacte à l'extérieur, à la nature, ce qui est important pour des personnes qui ont vécu quand même très longtemps en rue, parfois se retrouver dans un immeuble ou dans un appartement on peut se sentir un peu claustrophobe et donc là à ce moment-là très rapidement ils peuvent être dehors. Donc ils ont ce contact à la rue, ils essayent d'en sortir mais en même temps ils restent attachés à ça.

Donc pour l'extérieur c'est bien, et donc ils savent qu'ils vont déménager avec les modules et donc à ce moment-là c'est à eux de décider OK est-ce que j'ai envie de continuer mon expérience module ou est-ce que c'était suffisant et maintenant je veux essayer de trouver un logement social où trouver autre chose. Parce qu'ils sont vraiment libres de faire ce qu'ils veulent. Et pour le moment on a eu un déménagement avec des personnelles dedans et les 2 ont suivi le module et ils sont très contents. Ça a demandé un petit temps d'adaptation parce qu'on est passé de Schaerbeek

à Forest, donc c'est aussi les délocaliser à l'intérieur de Bruxelles, donc c'est tout leur repère qui change. Donc sur le Pont Van Praet c'est la limite Schaarbeek, on était sur le territoire de 1000 Bruxelles mais on était à Schaerbeek. On avait 2 personnes, qui ont suivi, donc eux ça fait 2 ans et demi/ 3 ans.

Et ils ont vécu comment ce changement ?

C'était un peu houleux, c'était la première fois donc ça n'a pas été si simple que ça mais ça s'est bien passé. Enfin ça s'est bien passé, maintenant ils sont très contents d'être ici. Et maintenant ils ont aussi un peu de voisinage donc pour le moment je pense que c'est vraiment bénéfique pour tout le monde d'avoir fait ça. C'est comme ils le décident, c'est chouette aussi c'est des logements individuels, donc s'ils veulent voir les gens ils sortent et ils vont discuter ensemble. S'ils veulent voir personne ils sont dans leur module, ils peuvent mettre la musique à fond, ils peuvent mettre la télé matin, midi, soir. Ils font ce qu'ils veulent et ça ne dérange pas les autres. Il y a beaucoup de retour par rapport à ça, ce qui est vraiment intéressant c'est qu'ils peuvent faire le bruit qu'ils veulent, ils n'ont pas de problème de voisinage. Que ce soit les autres qui les dérange ou quoi. Et c'est vrai que dans les logements bah souvent quand t'as des murs en carton, bah tu mets la télé à 2h du matin, ta le voisin qui râle et donc ça peut créer des problématiques et on peut perdre des logements comme ça. Mais tout le suivi fait par Infirmiers de Rue se base vraiment sur la demande et les besoins de la personne qui est suivie donc on ne force rien, ça vient vraiment d'elle. Ça c'est vraiment important pour nous et pour eux aussi parce que on se rend compte qu'on ne peut pas forcer quelqu'un, si on le force ça ne fonctionnera pas, il va retomber, il va replonger. Donc la démarche doit venir de lui.

Donc par exemple ces modules-ci maintenant pour parler un peu de l'accompagnement, les modules sont en gestion locative avec une agence immobilière sociale. Donc ça c'était une volonté de la part d'Infirmiers de Rue de ne pas avoir la double casquette, donc du bailleur, propriétaire des modules. Nous on est là pour les accompagner et pour essayer qu'ils se réinsèrent directement dans la société, qu'ils retrouvent un semblant de vie normale on va dire, avec beaucoup de guillemets tout ça évidemment. Mais on ne voulait pas non plus, ici par exemple, mettre le feu à leur module ou si jamais y'a un problème de voisinage il faut quand même pouvoir respecter les règles comme tout le monde et dire écoutez, là vous avez dépassé les limites, on doit vous mettre à la porte parce que vous ne respectez pas les règles. Et donc c'est dur d'avoir la double casquette, c'est pour ça qu'on a préféré passer par une agence sociale qui s'occupe de tout ça. Et donc entre guillemets les mauvais gars c'est plutôt eux et nous on est là pour assurer le suivi donc même s'il va partir du module on sera toujours là pour les accompagner.

4. SAFETY (sécurité)

Avez-vous déjà rencontré des problèmes de sécurité sur le site et si oui, Quels sont ces problèmes et comment les gérez-vous ?

Pour tout ce qui est l'entente entre tous ici c'est nous, ça fait partie du suivi, et c'est important, ce n'est pas l'agence immobilière qui va s'occuper de ça. Eux c'est vraiment les bailleurs, ils s'occupent du logement, est-ce que tout est bien fait, OK c'est bon, puis voilà.

Donc avant on n'a pas eu de problème parce que les 2 locataires s'entendaient super bien et donc c'était très chouette, ils se tiraient l'un l'autre, donc là c'était bien. Maintenant on a donc la 3e personne qui est arrivée, c'est aussi une connaissance des autres donc c'était un peu la surprise en disant ah beh tient qu'est-ce que tu fais là. Ils se sont retrouvés dans c'était très chouette. La dernière personne qui est arrivée elle a quand même des gros problèmes psychiatriques, elle n'est pas toute seule dans sa tête et donc ce n'est pas toujours évident. Donc là pour le moment l'entente est cordiale et se passe bien mais il y a de temps en temps des petits moments de tension, et là on sait qu'on doit faire attention. Mais les gens qui sont ici sont aussi très ouverts et se rendent compte de tous ces problèmes-là, enfin le problème que cette personne a. Donc ils sont assez bienveillants aussi, envers elle. Ils disent ben voilà on sait qu'il a

un problème, il sait que parfois il dépasse les bornes, c'est à nous maintenant de gérer ça et voilà. Et on leur a déjà dit voilà s'il vous fait chier vous l'envoyez bouler, vous n'êtes pas des assistants sociaux, ce n'est pas votre rôle. Pour le moment ça se passe bien. On a eu un peu peur quand même mais la cohabitation à l'air de bien se passer. Maintenant on verra, à 6 personnes peut être que ça va être différent.

Et ce qu'on essaie de faire aussi c'est de mixer un petit peu les profils sociaux à l'intérieur. Donc Infirmiers de Rue a vraiment pour vocation d'aider les personnes les plus précarisées, un peu celles dont plus personne ne veut s'occuper. Donc c'est souvent des hommes de 40, 50 ans minimum, parce qu'ils ont souvent un lourd passé de sans-abrisme, et donc on a une personne ici qui a vécu 20 ans en rue, et après 20 ans en rue c'est vraiment dur de se réinsérer dans la société de reprendre les bonnes habitudes dans un logement. Et pour éviter d'avoir que des personnes avec des lourds passés, ou avec des grosses assuétudes, ou avec tous des alcooliques ensemble par exemple, ça serait une très mauvaise idée parce qu'ils risquent de se tirer vers le bas, on essaye de trouver des profils différents. Et c'est pour ça que là on a en partenariat avec l'entraide de Saint Gilles qui est aussi une association qui vient aux aides aux personnes sans abri, mais beaucoup plus léger en fait, eux ne font pas un suivi médical aussi poussé que le nôtre. Et ce sont des gens qui en fait se débrouillent très bien, c'est juste qu'ils ont un parcours de vie qui fait qu'il se sont retrouvé à la rue. Et donc eux sont là pour leur tendre un peu la main et leur proposer des trucs. Et donc on a une personne ici qui vient de l'entraide et elle se débrouille super bien, on se demande vraiment mais comment est-ce qu'elle a pu se retrouver à la rue. Mais voilà c'est le parcours de chacun et chaque truc est différent.

Et du coup aussi pour terminer, pour rentrer dans les modules ils doivent être en ordre administrativement, sur pas mal de points. Donc il faut qu'ils aient des papiers, il faut qu'ils soient en ordre de mutuelle, ils doivent être inscrits au CPAS, avec un revenu d'intégration social (donc c'est plus ou moins 900 à 1000€ je pense). Donc ils doivent payer un loyer, ces logements ne sont pas mis à disposition gratuitement, ça fait partie aussi du processus de réinsertion. De se dire bah voilà je dois payer mon loyer, je dois payer mes charges. Donc ici pour le moment ils payent 310€ de loyer, mais comme ils ont un revenu d'intégration sociale qui est vraiment très bas, ils ont quand même une diminution de 50€ de leur loyer. Donc eux ne paient effectivement que 260€, avec quand même 100€ de provisions de charges, ce qui est beaucoup trop mais... Donc en gros par mois ils payent 360. Et tous les ans, ou tous les 2 ans, quand on fait le décompte des charges, il récupère de l'argent parce qu'il ne dépense pas sa provision de 100 euros. Mais ça c'est dans l'idée où il reste au minimum un an. Parce que là ça s'équilibre, parce qu'en hiver il consomme énormément en électricité, et donc les charges sont proches des 100€ par mois, et par contre en été il n'y a pas besoin de chauffer et ils usent beaucoup moins d'électricité et donc à ce moment-là hop ça descend. Donc c'est comme ça qu'en fait avec la moyenne, moi j'avais calculé sur les 2 ans d'occupation de l'autre côté, le module qui est vraiment bien isolé là, il tournait aux alentours de 50/60€ de charges par mois, mais sur un an. Donc après 2 ans il retouche quand même pas mal finalement, ça ça peut être aussi sympa. Donc c'est quand même mettre de l'argent de côté entre guillemets, et puis un jour ou l'autre ils vont recevoir une belle somme d'argent, enfin une belle, ils vont recevoir le surplus.

6. SOLIDARITY (solidarité)

Bruxelles a-t-elle participé au financement par l'appel d'offre du ministre du logement ? Quelles sont les autres subventions/aides financières que vous avez reçus ? Une partie par Habitat & Humanisme/IDR ?

Au sein de l'ASBL, on est subsidié à hauteur de 55%. Et le reste 45% c'est des donations. Donc c'est quand même majoritairement les subsides de la région avec la COCOM et la COCOF et tous ces trucs là. Pour le projet module, c'est aussi des subsides de la région. C'est le subside Fremault pour le moment ; Là on essaye d'avoir un autre subside du côté du cabinet marron. On espère pouvoir continuer le projet donc normalement il y aurait de l'argent à aller chercher là. Et par exemple mon salaire c'est un autre subside de Bruxelles prévention et sécurité. On va chercher un

peu partout, c'est un peu un Melting Pot mais bon c'est comme ça que ça fonctionne pour le moment. Mais on essaye de trouver des autres formes de financement. C'est vrai que si on se base d'un point de vue purement immobilier, le module c'est pas rentable, parce que y'a pas d'amortissement, c'est pas comme un immeuble qui prend de la valeur. C'est comme une voiture qui au bout de 5 ans, ne vaut plus rien.

7. TOTAL COST OF OWNERSHIP (coût total de propriété)

Le propriétaire (IDR, vous) doit-il payer des taxes en plus ? Si oui, quel genre ?

Non. On ne loue pas le terrain, enfin par exemple sur ce terrain-ci on paye des indemnités, mais qui sont vraiment minimes, ce n'est pas considéré comme étant un loyer. Et c'est pour ça aussi on doit faire attention à la législation, donc c'est pour ça qu'on signe des conventions de 2 ans. Si c'était un peu plus que 2 ans ça serait du coup vraiment comme si on louait le terrain et donc du coup c'est d'autres règles qui se mettent en place. Donc nous on n'a pas de précompte immobilier, il n'y a pas de cadastre, il n'y a pas de taxes supplémentaires, enfin s'il y en a si c'est lié au terrain du coup, c'est le propriétaire qui prend ça en charge. Donc en général nous il nous offre le terrain, on s'occupe de tous les raccordements, de toute l'installation, de rendre le terrain propre comme on l'a trouvé au moment d'arriver. Mais voilà on n'a pas de taxe à payer, supplémentaire par rapport à ça.

Les éléments du bâtiment sont-ils intégrés de manière à pouvoir être atteints et récupérés sans trop d'efforts ni de dommages ? Si oui, de quelle manière ?

Oui, on essaye en tout cas au maximum qu'on puisse récupérer, ou en tout cas réparer facilement, mais ce n'est pas toujours évident. Sur les 2 modules, les Moving Nest "2e génération", là je sais que toute la menuiserie a été récupérée. Ils ont récupéré les châssis, les portes, et après ils ont monté le module autour avec ces dimensions-là. C'est toujours intéressant mais on se rend compte que ça prend aussi énormément de temps, il faut pouvoir le stocker, il faut d'abord trouver, puis ça veut dire qu'à chaque fois on va peut-être changer le modèle constructif donc ça veut dire faire de nouveaux plans, donc sur le long terme et si on veut voir ça à grande échelle c'est quand même assez compliqué. Donc de faire de l'économie circulaire à la construction c'est compliqué à mettre en place. C'est envisageable mais on ne peut pas faire ça pour tout non plus.

(Ah voilà Robert, qui est très connu et qui fait beaucoup de vidéos. Sur la RTBF c'est lui qu'on interviewait aussi. Il fait des vidéos... à l'époque c'était Views qui était venu faire une petite vidéo, Views c'est une capsule de la RTBF sur les réseaux sociaux, ça dure en général 4/5min, donc c'est quand même des reportages un peu plus poussés, un peu plus fouillés, recherchés. Et ils avaient fait une capsule vidéo sur les modules qu'on avait placé au Pont Van Praet, et c'est lui qui parlait de... il était devenu un petit peu la star, dans tout Schaerbeek on le connaissait, et c'est un peu notre porte-parole, en tout cas dès qu'on a une demande d'interview c'est souvent lui qui accepte et lui c'est le plus longtemps, un des premiers à être rentré dans les modules.

8. CAPITAL ACCUMULATION (accumulation du capital)

Quelles sont les principaux matériaux utilisés ? (bois ?) Les matériaux choisis sont-ils destinés à durer dans le temps ? Ou plutôt un choix de matériaux renouvelables ?

Ça devient vraiment très compliqué avec le prix du bois qui augmente, là on a construit maintenant les nouveaux modules, on avait demandé au constructeur de rester sous la barre des 40 000€. C'est un peu... via le subside Fremaut il fallait qu'on reste quand même à un minimum, il fallait faire attention à ça. Et donc, sinon, fin avec le prix du bois qui augmente, normalement le module devrait nous revenir à... je pense j'avais calculé 47 000€, TVA comprise. Mais

ils ont trouvé un système de formation, donc ils proposent des formations pour que les gens viennent apprendre, l'isolation comment ça fonctionne, la plomberie, … Enfin ils ont des modules de 2 jours en général, ou les gens viennent, mais donc du coup c'est payant et donc le formateur est payé grâce aux formations et du coup on économise quand même pas mal de main d'œuvre. C'est comme ça que maintenant les modules, au final, vont nous couter 40 000€ plus ou moins, pièces, parce qu'ils ont réussi à trouver ce système-là. Ce qui est hyper intéressant, mais au final on se dit que sur le long terme et à plus grande échelle, ce n'est pas tenable. Parce que déjà maintenant on se rend compte qu'il y a le 3e module qui est en construction et ils ont du mal à remplir les formations parce qu'il y en a déjà eu, il n'y a même pas 2 mois. Et donc finalement il n'y a pas un roulement assez rapide.

J'ai vu qu'il y avait des modules ici qui avaient été construits avec l'aide de jeunes ?

Ah oui, ça c'est les 2 là-bas qui ont été construits avec l'aide d'étudiants en archi, non en menuiserie je pense. Mais de nouveau ça prend énormément de temps à mettre en place, et donc voilà pour des petits projets ça peut fonctionner, pour un ou 2 modules ça peut fonctionner, mais c'est... Maintenant on va essayer de passer dans une phase où on va essayer de grandir le plus, pas le plus vite possible mais on a besoin de grandir, on a besoin de pouvoir montrer qu'on peut placer plus de modules et donc ce genre d'initiatives, d'idées, ne fonctionnera plus ou va être difficile à mettre en place. Ou on va essayer de varier en fait, on va peut-être faire quelques modules avec formation et ce genre de choses, puis d'autre modules un peu plus industriels, à la chaîne. Faut encore qu'on réfléchisse, faut qu'on se relance.

C'est ça le gros problème maintenant, c'est qu'on doit retrouver des nouveaux constructeurs. Ça prend du temps, et certains en fait sont déjà surchargés. Moi j'en connais quelques-uns qui sont très très chouettes, ils font des très belles réalisations mais leur carnet de commande est déjà bien rempli donc maintenant on arrive avec genre 10 modules, faites nous 10 modules, ben on aura un module tous les ans. Parce qu'ils vont essayer de nous caser à gauche à droite. Ça va être compliqué de trouver un constructeur qui va pouvoir suivre notre demande.

Et vous ne pensez pas à contacter des personnes qui sont vraiment dans les entreprises, qui sont dans la fabrication de modules ? Comme ModuleHome ?

Oui, on l'avait fait, mais on doit recommencer tout ça. Là maintenant pour la première fois, quand j'ai fait l'étude de marché pour trouver les constructeurs maintenant, j'ai été rencontré quelques grosses boîtes comme Gimat par exemple, et qui eux normalement peuvent nous assurer une livraison quand même un petit peu plus régulière et parce qu'ils ont une grosse chaine de travail et ça pourrait fonctionner. Mais, c'est ça qu'on n'aimait pas à l'époque, c'est qu'on n'avait pas de main mise, on ne pouvait pas demander beaucoup d'adaptation par rapport à leur modèle, donc c'était un peu 'vous prenez ce qu'on vous propose et sinon, bah ça ne nous intéresse pas'. Mais il y a, peut-être qu'on va revenir là-dessus.

10. ADEQUATE LIVINGSPACE (espace de vie adéquat)

Comment les habitants se sentent-ils dans l'espace de vie de 26m^2 aujourd'hui ? (changement avec avant = rue)

Les retours qu'on a en tout cas pour le moment sont assez positifs.

Aussi parce qu'ils sont en contact directement avec l'extérieur, comme tu m'as dit.

Oui c'est ça, c'est déjà toujours mieux, quand on discute de ça avec eux, c'est toujours mieux qu'un pont où qu'une tente. Et finalement, donc on doit respecter, ça je n'en ait pas encore parlé mais donc pour que les modules soient considérés comme du logement faut respecter les normes du logement à Bruxelles. C'est ce que je n'avais pas avec ma

Tiny House, qui était trop petite, donc ici on est en intérieur, on doit avoir 26 m² minimum de surface intérieure, et minimum 22 m² de surface habitable, sans la salle de bain. Donc c'est pour ça qu'on a une sorte de gros studio, avec espace chambre, mais qui n'est pas bien définie donc on ne peut pas le... Donc on a chambre, salon et cuisine, ça doit former 22 m² et il faut qu'on ait minimum 2m50 de hauteur sous plafond. Donc pour celui-ci en fait, on fait passer ce module comme étant une comble. Alors c'est marqué nulle part dans la loi que les combles doivent se trouver au dernier étage d'un immeuble, parce qu'en général c'est ça. Mais en fait c'est marqué nulle part, donc du coup on dit bah ceci est une comble. Et en fait c'est, la réglementation c'est d'avoir 2m50, mais seulement sur 50% de la surface. Donc c'est comme ça que on a un toit en pente et puis pile poil au milieu on arrive à 2m50.

Donc la partie du milieu est à la même hauteur que les autres modules ?

Oui c'est ça, donc on est un peu plus haut d'un côté mais plus bas de l'autre côté.

Et ça ne revient pas au même du coup ?

Attends je suis plus tout à fait sûr de ça, si c'est vraiment 2m50. Ou il faut que je pense que sur la, oui c'est ça sur 50% de la partie il faut qu'il y ait 2m50. Enfin ça c'est l'architecte qui nous a trouvé cette solution qui en un coup était là 'hé les gars on va essayer ça!', et donc c'est vraiment chouette parce qu'on a une architecte qui adore aller farfouiller dans tous les textes, il va trouver la petite exception, le petit article sur lequel on peut jouer. Enfin ça fait partie du jeu.

Donc c'est essentiellement pour ça que le toit est penché sur ce module ?

Oui c'est ça, oui c'est parce que je trouve que c'est quand même plus facile aussi pour récupérer les eaux de pluies. Même si on ne les récupère pas vraiment mais pour l'évacuation c'est plus simple, pour l'entretien du toit c'est quand même un peu plus cool parce que là, les toitures plates ça prend toutes les feuilles mortes et c'est galère, c'est dangereux, enfin il y a plein de trucs. Et je trouve aussi que ça donne un autre aspect, mais là on ne le verra pas mais à l'intérieur, par rapport aux autres... Il y a moyen en fait de de créer des délimitations un peu différentes avec le toit en pente, que le toit plat en fait n'offre pas vraiment, c'est un peu trop cube, c'est un gros cube alors que l'autre avec le toit en pente ça apporte, tu vois, ça c'est personnel mais c'est le retour qu'on a eu quand même, les gens préfèrent maintenant le toit en pente.

12. SERVICE LIFE (durée de vie)

Quelle est la durée de vie prévue des modules ?

Le problème c'est qu'avec l'habitat léger y'a pas assez de retours. On dit plus ou moins 15 ans. Un module va durer 15 ans. Je pense que si on en prend soin, ça peut durer quand même 20/25 ans, peut-être même plus. Mais du coup ça fait peur aux investisseurs, et donc si ils se disent voilà je vais avancer 40 000 euro, fin si je dois amortir 40 000 euro sur 15 ans, il faudrait qu'on le loue beaucoup plus cher, pour que eux puissent avoir une plus-value.

13. ENERGY AND WATER USE (utilization de l'énergie et de l'eau)

Qu'est-ce qui est mis en place pour réduire l'énergie ? justement on parlait de récupérer l'eau, est ce que vous y avez déjà pensé ?

Récupérer en fait le problème c'est si on récupère l'eau, il faut qu'on ait des circuits internes bien séparés. Donc on ne peut pas mélanger l'eau de ville avec l'eau de pluie donc ça c'est quand même assez compliqué. Et pour l'énergie on en parle avec nos locataires de faire attention à l'utilisation du chauffage principalement, mais ce n'est pas toujours évident.

Comme c'est des personnes qui ont vécu longtemps en rue ils ne savent pas ce que c'est, ou vraiment comment le faire. Et par exemple avec Robert c'est vraiment ça, lui il fait l'inverse de ce qu'il devrait faire mais dans sa tête ça a du sens, pour nous pas du tout mais par exemple il me dit voilà moi je me réveille le matin, je mets le chauffage à fond, comme ça quand je rentre le soir mon module est bien chauffé et je le coupe. Et donc il a l'impression de faire des économies parce que quand il rentre chez lui il fait super chaud et il coupe, sauf qu'il ne se rend pas compte qu'il a chauffé pendant toute la journée. Donc c'est un peu absurde mais voilà lui il ne change pas donc voilà on a quand même du mal à leur faire adopter les bonnes pratiques pour économiser l'énergie.

Mais on a un projet maintenant avec une autre agence immobilière sociale, qui s'appelle logement pour tous, ils vont essayer de créer une sorte de communauté d'énergie solidaire et donc qu'ils ont placé pour... on est vraiment au tout début du projet et aussi ils avancent encore un petit peu, mais l'idée ce serait de pouvoir de profiter des panneaux solaires du voisinage en fait, on va créer une sorte de coopérative ou un truc comme ça, qui permettrait de s'échanger ou de se racheter entre coopérateurs. Ça existe déjà mais là ce serait au niveau bruxellois sociale et donc profiter, eux comme ils ont beaucoup de logements ils mettent des panneaux solaires sur leurs logement, ils ne consomment pas au même moment que nous, ils ne consomment pas de la même manière et donc on pourrait essayer de se racheter ça donc ça se met en place on essaie de trouver des solutions pour essayer de faire diminuer au maximum la facture énergétique. Et surtout pour nous ça pourrait être vraiment intéressant parce que je me rends compte qu'en hiver on consomme, enfin eux consomment quasiment la moitié, enfin la même chose, la moitié en journée la moitié en nuit. Avec le chauffage par exemple ils se chauffent toute la journée à l'électrique. Et ça c'est vraiment intéressant d'avoir des panneaux solaires pour pouvoir diminuer en tout cas de... peut-être pas de moitié mais toute cette consommation de journée pourrait être prise en charge par les panneaux solaires. Mais le problème c'est que du coup nous on ne sait pas placer des panneaux solaires sur les structures des Tiny, fin ce n'est pas assez grand en fait pour la consommation nécessaire, donc il faut qu'on puisse s'appuyer sur d'autres personnes qui ont plus de panneau solaire et un plus grand champ.

14. MAINTENANCE COSTS (coût d'entretien)

Qui est financièrement responsable des coûts d'entretien ?

Oui, ça dépend quel type de casse. Si ce n'est pas volontaire... L'entretien ça c'est nous, tout ce qui touche aux modules et à l'entretien du module, s'il faut changer la moquette, enfin ce n'est pas une moquette mais s'il faut changer le, enfin dans certains on a un parquet clic clac, dans d'autres c'est un gros Lino, oui c'est du Lino. Ça c'est à notre charge mais si par exemple ils cassent leur robinet, du coup c'est à eux de payer quand même, donc ils ont des devoirs en tant que locataires et donc ça c'est, enfin c'est normal, donc ça dépend un petit peu de la caisse mais pour l'entretien général du module ça c'est le propriétaire donc c'est nous qui prenons ça en charge.

16. End (Fin)

Après l'expérience que vous avez acquise, pensez-vous toujours qu'il est possible et nécessaire de travailler avec des logements temporaires sur des terrains vagues ? Quels sont les points positifs ou négatifs ? Quels sont les défis à relever ? comme tu disais, avec tous les terrains qui sont peut-être de moins en moins disponibles.

Oui oui nous on y croit. Et encore maintenant enfin même quand je dis que c'est...

Parce que c'est vrai qu'il y a beaucoup de choses compliquées à gérer...

Oui, mais par contre c'est important de le dire aussi c'est qu'on ne pense pas détenir LA solution. Parce qu'on entend

ça parfois, 'oui mais avec vos modules, avec vos Tiny House... c'est pas LA solution au logement à Bruxelles...' non, c'est pas LA solution mais c'est UNE solution et du coup on essaie de, enfin c'est ce qu'on essaie de faire, changer au niveau politique c'est de nouveau normalement ça devrait pas être notre rôle mais c'est les associations qui viennent avec des idées innovantes et qui essaient de montrer des nouvelles manières d'habiter ou de consommer de l'énergie et tout des trucs comme ça, qu'on met en place. Et c'est grâce à ça, grâce à ce retour qu'on peut alors après faire un peu de lobbying auprès des politiques en disant mais voilà il faut nous aider. Par exemple pour le moment on attends avec impatience et ça devrait sortir parce que c'est passé au Parlement jeudi passé, c'était donc 2 arrêtés gouvernementaux concernant les permis à durée limitée et les permis dits de dispense ou de minime importance qui régissaient un tout petit peu nos modules à l'époque, mais c'était hyper compliqué, enfin il fallait jongler avec pleins de règles. Et donc normalement ils en sont arrivés avec un texte qui permettrait de mettre en place ce genre de de modules en occupation temporaire beaucoup plus rapidement. Donc ce serait pour le logement mais c'est aussi pour les occupations temporaires, type sociales, culturelles, donc il y a vraiment un peu de tout et c'était vraiment une demande de la part des associations, d'avoir un cadre légal un peu mieux défini, plutôt que de jouer avec les règles existantes qui ne sont pas faites pour nous et voilà.

Oui, parce que c'est vraiment un autre type d'habitat quoi

Oui c'est ça et ce n'est pas la même manière de voir les choses, surtout quand t'es sûr du temporaire parce que pour le moment par exemple le projet Home for Less et le principe de Box in the Box, d'avoir des modules en intérieur de gros bâtiments, là le gros problème pour eux pour le moment c'est l'affectation du sol. En général on trouve, là où ils peuvent se mettre c'est dans des anciens bureaux qui ont justement des grosses plateformes 1000 m² en un coup, il y a plus de cloisons, on vient créer ces modules là c'est génial, sauf que l'affectation du sol dit que c'est du bureau. Et qu'on peut pas faire de logement. Et donc ils ont beaucoup de mal à faire changer les choses, et surtout que dès que tu changes une affectation le prix de revenu de ton bien change, et donc pour certains promoteurs immobiliers ils vont profiter quoi on a un coup du bureau ça devient du logement boum ils vont doubler par 2, enfin par 2 j'en sais rien, mais donc c'est un peu le principe et donc les politiciens sont là 'wow wow faut faire attention'.

Donc beaucoup de barrières légales

Oui et donc du coup il faut faire attention à ça mais nous ce qu'on essaye de montrer c'est que voilà, c'est temporaire donc il faudrait pouvoir nous octroyer des dérogations durant le temps du projet. Et donc voilà pendant 3 ans, ça devient du logement, mais une fois qu'on part et que y'a un autre projet immobilier ça reste des bureaux par exemple. Et les promoteurs derrière ne pourront pas profiter du fait que ça a été changé de manière temporelle. Donc c'est toutes des, enfin voilà ça c'est un travail depuis plus de 5 ans qu'on...

Pour le moment en fait on a un groupe de travail géré par *Sohonet*, avec tous les acteurs du subside Fremaut. Donc il y a Diogenes, il y a l'ilot, il y a SAAMO,…

Donc vous vous tirez vers le haut, parce que vous pouvez aussi apprendre de leur expériences.

Oui c'est ça, c'est vraiment ça, on s'est rendu compte de ça parce que à l'époque Fremaut elle avait donné okay 1 000 000 d'euros, hop on s'est séparé ça en 5 projets.

Mais vous vous connaissiez pas du tout

Non, et chacun a travaillé de son côté, a fait face au même problèmes de son côté. Il y avait pas du tout ce système d'entraide ou de partage des connaissances. Et donc c'est après je pense 3 ans ou 3/4 ans, parce que ça fait maintenant

un an et demi/2 ans qu'on fait ça, fin qu'on a commencé ce groupe de travail tous ensemble. Et on s'est dit mais c'est absurde enfin, on galère tous sur les mêmes problèmes, arrêtons de travailler chacun de notre côté, mettons-nous ensemble. Et donc là maintenant on voit qu'il y a une chouette dynamique qui se met en place, et voilà on est tous là pour s'aider, on a tous la même vision en tête, il faut aider on a, en tout cas infirmiers de rue on a persuadé, on peut mettre fin au sans-abrisme, donc c'est vraiment notre objectif, notre vision c'est ça. Et je pense que pour les autres associations aussi, ils font tout pour mettre fin au sans-abrisme, mais il faut donner les moyens, et surtout, enfin, c'est pas nous en tant qu'association où on y arrivera, c'est vraiment au niveau politique qu'il faut faire des bons choix et il faut pouvoir prendre ça en main, pour terminer.

Quelles sont les étapes futures pour vous et les plus gros challenges ?

Ben vraiment là à l'heure actuelle maintenant, pour trouver les terrains on y arrive, on sait qu'il y en a encore, donc on a encore une vision sur quelques années ou on sait que ça sera jouable, ça sera faisables. Le plus compliqué pour nous c'est vraiment le, enfin le financement des modules quoi. Donc on espère pouvoir avoir des subsides, mais bon c'est pas toujours évident non plus, enfin ça prends du temps et puis on n'a pas toujours des subsides, donc si on veut commencer à être un peu autonome on peut pas toujours compter que là-dessus, donc c'est pour ça qu'on essaie de changer maintenant la communication autour du modèle comptable on va dire autour du module, et c'est comme ça que, enfin en discussion avec des membres de certains Rotary, eux ils ont une vision d'investissement plus sociale, donc on les a peu appelé les investisseurs sociaux, c'est ce qu'on essaie de mettre en place maintenant, et voilà pour un promoteur immobilier, investir par exemple 40 ou 50 000€ dans un module c'est pas intéressant pour lui parce qu'il va rien retoucher, il va pas faire de profit, c'est pas intéressant. Mais pour des investisseurs sociaux, par exemple ils ont parfois des grosses sommes justement des 50 000€ qui traîne sur un compte, et ils se disent bah voilà j'aimerais bien faire quelque chose avec cet argent, et grâce à ça il pourraient investir dans un module, il deviendrait propriétaire du module du coup, il toucherait les loyers et on a calculé que les modules reviennent à 40 000€ ils en auraient pour un peu plus de 10 ans s'ils sont à 50 000€ ça sera peut-être pas loin des 13/14 ans à mon avis, peut être 15, avant de récupérer leur mise de départ mais eux ça les intéresse pas spécialement de retoucher, le fait qu'on leur rembourserait le loyer ça les intéresse, ça c'est chouette, mais d'un autre côté eux ce qui les intéresse plutôt c'est de se dire bah voilà avec 50 000€ je vais sortir une personne de la rue pendant 15 ans, et c'est plutôt cette vision là et donc c'est plus maintenant vers cette personne-là qu'on va essayer de communiquer pour aller chercher un peu plus d'argent. Et puis après voilà si y a s'il y a des particuliers qui ont aussi ces sommes là ou s'il y a des particuliers qui veulent participer au financement progressif ça peut se mettre en place aussi donc là maintenant il y a tout un travail. Parce que clairement, on est pas au début de l'expérience, mais on est un peu au début de l'expérience réelle qui fait que maintenant bah voilà on a quelque chose de concret à montrer, on a déjà...

Vous avez déjà été relocalisé

Oui c'est ça on a déjà déménagé, on a des permis d'urbanisme, on sait comment ça fonctionne maintenant pour les raccordement pour activer le terrain, le temps que ça prends, ce genre de chose, quels ont été les freins, les délais attendus, et tout ça mis en place, maintenant on essaie d'accélérer les choses donc ça fait 4/5 ans qu'on travaille là-dessus mais ça fait vraiment depuis cet année-ci ou on se rend compte que on a réussi à ouvrir quand même pas mal de portes et ça va nous permettre de s'agrandir beaucoup plus rapidement et par exemple juste bah dernier exemple mais qui est vraiment marquant je trouve c'est que ça faisait plus de 3 ans qu'on était en discussion avec le CPAS de Bruxelles pour les 2 terrains dont on a maintenant une convention signée, et ça fesait 3 ans ou voilà ils tâtonnaient, oui, non, oui, non... on sentais bien qu'il y avait une petite réticence, une petite peur parce que on avait pas encore fait nos preuves. Là maintenant on est retourné vers eux, on est arrivé avec le permis d'urbanisme de la commune de Forest, on leur a dit voilà on a un terrain prêté par Citydev, on est en train de placer 6 modules, on a reçu le permis

d'urbanisme, regardez ça fonctionne. Et ben là on a signé tout de suite, ils ont dit OK génial, on a rencontré le chef de cabinet, qui en a parlé à son président et le président était tout fou OK c'est génial on va mettre des modules partout. Et donc maintenant ils sont hyper derrière nous et ils espèrent vraiment que le projet va prendre forme, et c'est aussi une bonne manière pour eux de récupérer ça de manière politique parce que bon le CPAS c'est quand même très politique.

Et donc votre objectif c'était 20 modules d'ici 2024, j'ai cru comprendre.

Oui, et c'est un objectif cool cool quoi. On espère vraiment faire plus. Et quand on en discute aussi avec d'autres acteurs de terrains ils disent voyez plus grands, y'a vraiment moyen de voir plus grand. Là on a déjà une convention pour 8 prochains modules, fin c'est ça il faut qu'on trouve de l'argent pour les construire, et on a 3 terrains en attente, en discussion avec Citydev où on pourrait aussi de nouveau je pense qu'avec ces 3 terrains là, plus le terrain du CPAS, on pourrait arriver à un total de 30 modules, donc genre l'année prochaine moi je pourrais activer tous ces terrains-là en un coup, et on aurait 30 modules. Le problème c'est qu'on arrivera pas à construire 24 modules supplémentaires maintenant en 2 ans, mais c'est ce qu'on essaie de mettre en place donc voilà, notre objectif réalisable c'est 20 modules pour, ouais, fin 2023 / début 2024, mais j'pense qu'on peut faire plus. Et puis voilà notre volonté aussi comme on a une antenne à Liège, donc IDR est présent aussi sur Liège, ils ont des gros problèmes de logement aussi là base, c'est pas du tout la même réalité qu'à Bruxelles, donc c'est aussi compliqué, mais on essaie de mettre ça en place et donc on espère pouvoir mettre des modules aussi sur Liège, et si ça fonctionne à Liège, en mettre ailleurs. Et c'est vrai que pour le moment on a, suite à la campagne de presse qu'on a faite il y a 3 semaines / un mois, on a déjà reçu des demandes de Tournai, on a reçu des demandes de Charleroi, d'Anvers, de Saint-Nicolas, il y a plein plein d'entités qui s'y intéressent et qui se disent ok comment est-ce que vous avez fait, vous avez été vous fournir où, comment est-ce qu'on peut faire, est ce qu'il y a, enfin... donc on sent que ça parle à beaucoup de personnes.

Et peut-être qu'on en parle de plus en plus.

Oui oui c'est ça. On en a beaucoup parlé aussi après les innovations, et bon ça a été un peu un flop, un peu mal géré je pense, mais donc ouais clairement ça n'a pas eu l'effet escompté. Mais il faut continuer à travailler, c'est pas parce que là on s'est planté que il y a pas moyen de mettre autre choses en place fin, bon là en même temps ils voulaient une réponse rapide, en moins de 6 mois il fallait fournir 8000 logements, c'est quasiment impossible. Parce que le truc le plus important aussi pour nous, c'est que on a vraiment une vision d'habitat durable et de qualité. Donc notre idée ce n'est pas de faire des... enfin de l'aide comme ça...

de faire du logement vraiment trop d'urgence et qui n'est pas qualitatif

Oui c'est ça, nous pour nous y'a vraiment que ça pour pouvoir réinsérer les personnes dans la société, et que les gens se sentent bien, et qu'ils se disent okay ça c'est mon logement, si je veux, je peux y rester 3/4/5 ans ou toute ma vie. Robert il a dit vous m'enlevez mon module, moi je retourne à la rue. Il ira jamais dans un logement traditionnel, donc là on sait que on va devoir trouver un endroit pour son module jusqu'à la fin de sa vie parce que sinon il retournerait à la rue. Mais parce qu'il s'y sent bien et ce genre de chose, et donc pour d'autres ça permet juste d'avoir, enfin, ça peut servir de tremplin quoi, on a une personne comme ça elle a vécu 3 mois dans le module, au tout début, et ça lui plaisait pas, mais au moins elle était en sécurité. Donc elle a pu trouver un semblant de sécurité et c'est ce qu'on a on a eu comme retour aussi très intéressant, c'est le temps qu'on perd quand on est vraiment sans abri, le temps qu'on perd à aller faire ses courses, à aller prendre une douche, tous ces trucs-là c'est tous des moments qu'on peut pas prendre pour sois, ou pour se remettre en recherche d'un logement ou de retrouver un boulot.

Là, je vais à une manif. Nos revendications c'est que on veut qu'il y ait, enfin on aimerait bien que la secrétaire d'État

en charge du logement Nawal Ben Hamou, fasse partie du CA de Bruxelles, pour que la vision du sans-abrisme soit aussi vu par rapport à une vision du logement. Et ça c'est le plus gros problème pour le moment, c'est que (c'est chiant mais c'est des compétences ministérielles, c'est débile), normalement donc Alain Marron est en charge de l'action sociale et donc techniquement on a toujours dit les personnes sans abri, c'est un problème social donc c'est pour Alain Marron. Et donc quand on va voir Nawal Benhamou qui est en charge du logement on leur dit écoutez, il faut trouver des solutions de relogement pour ces personnes sans-abri, bah il y a toute une époque où elle disait ben non, les sans-abris c'est pas mon problème, moi c'est le logement, les personnes sans-abri n'ont pas de logement. Et donc en fait c'était vraiment se décharger. Mais maintenant c'est en train de changer, et donc on a rencontré Nawal Ben Hamou, elle est venue visiter nos bureaux et donc là elle a dit oui en concertation avec mon collègue machin, on a changé, enfin je suis d'accord de reprendre ça et de me rendre compte que la problématique du sans-abrisme est aussi... Pour nous principalement c'est une problématique de logement, à Bruxelles c'est vraiment ça, en Wallonie aussi je pense hein mais vraiment centré sur Bruxelles c'est, il faut reloger les personnes, c'est ça et voilà maintenant toutes les associations que t'as rencontré pratique le Housing First. Je pense qu'on ta déjà un peu expliqué le principe, que c'est vraiment un droit fondamental, chaque personne a droit à un logement, qu'importe son problème. Pendant très longtemps ce qu'on faisait c'était bah écoutez monsieur vous picolez trop, arrêtez de picoler et on vous offre un logement après. Donc c'était un peu la carotte pour motiver les gens et comment imaginer qu'une personne en rue arrive à se remettre bien dans sa vie en espérant avoir un logement. C'est impossible. C'est le logement qui va tout régler, enfin qui va pas tout régler mais qui est une, la solution de départ pour être en sécurité, pour pouvoir se reprendre en main, pour pleins de trucs, et donc c'est vraiment ça notre vision. Et donc c'est sûr que parfois ça peut être dur, ça peut être mal vu par rapport à des voisins ou des trucs comme ça fin, c'est vrai que ces personnes-là bah boivent, certaines se droguent quand même pas mal, et ce genre de choses et donc ça peut être difficile de se dire eh quoi on va les aider alors que en fait c'est des gros déchets de la société. Non, pas du tout il faut les aider parce que il faut les mettre en sécurité et il y a que comme ça qu'ils vont pouvoir réussir à sortir de leurs addictions et de leurs assuétudes, mais c'est vrai que nous notre public c'est 85% de personnes avec des assuétudes. Au minimum la boisson, et puis après ça peut aller beaucoup plus loin. Et donc du coup c'est ça, le suivi est d'autant plus compliqué avec ces personnes-là. Mais c'est fondamental, il faut qu'on passe par là.

ANNEX 5: INTERVIEW 3 - ALINE STRENS

0. To start (Pour commencer)

Quelle est votre implication dans le projet ? Quelle est la situation actuelle du projet ?

Donc moi je coordonne l'équipe Housing First de Diogène, donc c'est un projet particulier qui est porté par l'asbl. En fait il y a eu des subsides de la ministre Fremaux, pour des projets innovants. Donc dans ce cadre-là on a décroché ce subside-là, mais c'est pas Diogène qui est porteur du projet, on est associé directement à une AIS, donc c'est l'AIS Théodore Verhaegen qui porte le projet, et Diogène est partenaire, envoyeur des candidats. Et on a fait ça aussi ensemble avec un groupement d'architectes qui s'appelle... j'ai oublié le nom. Mais donc on a, c'est un truc en 3 partenaires quoi, un groupe d'architectes, l'AIS qui porte, qui signe les contrats, qui a la responsabilité du projet, et nous en tant que partenaire social. Alors le projet il est maintenant sur sa 2e implantation, il a déjà été monté sur un terrain qui appartient à la fabrique d'église de Uccle, il était dans le jardin d'une église abandonnée, dans un quartier de logement sociaux comme ça, ça a pas mal marché, mais c'était une durée assez courte c'était un an. Et puis après on a tout déplacé et puis maintenant on est de nouveau sur un terrain d'une fabrique d'église mais du côté de Jette.

Donc vous vous démontez les modules, c'est pas en une pièce qu'ils sont transportés ?

Non, **ils sont démontables, c'est fait avec des plaques de d'OSB avec de la laine de bois au milieu, parce qu'on a de nouveau une 2e plaque d'OSB. C'est comme des trucs de 90cm de large sur 1m20, et puis après ils les mettent les uns à côté des autres et ils font la boîte. Et puis après ils viennent par-dessus mettre une structure avec des poutres et une bache qui permet l'étanchéité.** Et en fait c'est des modules qui peuvent aller à l'intérieur ou à l'extérieur.

Parce que à la base le projet était plutôt pour l'intérieur, non ?

Oui, au début le premier site qu'on avait trouvé c'était ici le long du canal, c'était dans des hangars, ça aurait pu marcher mais au niveau des délais ça n'a pas été, donc finalement on s'est rapatrié vers la fabrique des bus, là c'était plus sympa aussi pour l'environnement pour les gens. Donc maintenant on est sur le 2e, le déménagement ça a été ça s'est bien passé, ils ont survécu tranquillement au truc. Ils sont quand même très bonnes qualités hein, c'est très agréable et ça respecte toutes les mesures du code du logement, tout est conforme en fait, ce qui fait aussi qu'on doit pas demander de dérogation. Et d'autres projets ont eu ce genre de problèmes, notamment avec Home For Less il fallait tout le temps demander des dérogations et ça complique les choses. Donc nous on a pas eu ça.

1. COMFORT (Comfort)

Lumière du jour : Comment avez-vous choisi l'emplacement et l'orientation des unités sur les différents sites ? (Bruxelles et Forest)

Ça je sais pas te le dire mais c'est dans des jardins hein, c'est vraiment dans un espace vert qu'ils sont chaque fois. C'est les architectes qui gèrent l'implantation. Mais c'est vrai que, ils sont quand même, c'est des petits terrains. Donc on a 3 modules, c'est un petit projet quoi, et notre but c'est pas de grandir forcément, c'est bien un petit projet comme celui-là. **Mais il y a quand même une promiscuité entre les 3 modules évidemment**, ils sont proches les uns des autres donc il y a une alchimie de cohabitation quand même, même si chaque module est indépendant et a à chaque fois tous les services nécessaires. Et donc ici par exemple il y a une des fenêtres qui donnent sur l'arrière d'un autre module et ça crée des histoires entre les gens. Donc ça a été réfléchi mais voilà, ça reste pas évident parce que c'est quand même, même à petite mesure seulement 3 modules ça reste quand même une petite concentration quoi, ça joue.

Accessibilité : Les personnes en fauteuil roulant peuvent-elles accéder aux logements ou y vivre ? (porche..)

Non. Ca y a pas parce qu'ils sont un peu surélevés. Donc il y a de l'air en dessous. **C'est vraiment un projet qui n'impacte pas du tout le terrain**, on les pose et on les enlèves c'est tout. c'est vraiment très léger comme impact.

2. NEIGHBOURHOOD (Voisinage)

Le voisinage est-il impliqué dans le projet ? Par exemple, activités sur le site/ sensibilisation et information ? (ou pas car variable quand les unités déménagent ?)

Bah, il y a toujours quelque chose de délicat à aller dire que tu vas venir mettre des personnes sans abri, parce que tu peux avoir **un effet NIMBY, avec des gens qui disent ouais c'est très bien mais pas près de chez moi**. Donc c'est un peu ça qui se passe en fait, ici sur la première implantation à Uccle il y a pas eu trop de problèmes, c'était un quartier de logements sociaux, on avait informé les voisin du projet, je crois qu'il y avait eu des prospectus dans les boîtes aux lettres, et il y avait eu un moment de rencontre aussi, mais il y avait peu de monde, il y a eu peu de réactions. **Tandis ce que sur la 2e implantation ça a posé plus de difficultés, ça continue en fait d'en poser**. Parce que là on a fait la même chose, il y a eu un moment de rencontre avec les voisins. Mais il y a eu quelques personnes qui se sont quand même fort opposés au projet, avant même que les modules soient construits, il y avait déjà une perception très négative du projet. Et donc c'est quelque chose qui fait pression, qui n'arrête pas de faire pression parce que quand les gens ont des comportements problématiques, peu de choses suffisent pour alimenter, pour monter en pression, un

peu outre mesure par rapport aux faits. Donc c'est toujours un truc... Après évidemment on est dépendant des autorités communales, le projet, **on a pas demandé de faire de permis d'urbanisme**, normalement il faudrait un permis d'urbanisme hein dans ces projets, on l'a pas fait parce que c'est une étude et nous on le considère vraiment comme ça. C'est un petit truc pilote, avec 3 modules, et c'est vraiment, il y a une recherche qui est associée. En fait c'est vrai que je t'ai parlé des 3 premiers partenaires mais il y a un 4e qui s'est mis en cours de route, c'est l'école des hautes études, enfin l'école de la rue de la poste, l'ISFSC, l'école d'assistants sociaux de la rue de la poste, eux ils mènent une recherche sur le projet et ils analysent un peu quel impact ce projet a sur le parcours des personnes qui passent par là et qu'est-ce que ça représente pour eux, et dans quelle mesure aussi l'idée évidemment c'est de questionner est ce qu'on peut développer ça à plus grande échelle oui ou non est-ce que c'est intéressant. Et grâce à cette recherche ce projet apparaît comme une recherche universitaire et du coup on saute la case permis d'urbanisme, évidemment bah on a pu faire ça la première fois on a prolongé la recherche, mais ça a un cout aussi hein faut payer les chercheurs tu vois, pour la 2e implantation mais c'est intéressant de voir justement comment le...

Oui c'est ça. La c'est encore en cours, la recherche est pas encore terminée. Maintenant si on doit encore le déplacer ensuite bah on va vraiment se poser la question du permis. Pour le moment on a pas eu de souci donc on s'est présenté à la commune, évidemment en disant voilà on va venir mettre le projet chez vous, mais ils n'ont rien à dire en fait comme c'est un truc universitaire, l'urbanisme n'a pas son mot à dire, mais on à chaque fois rencontré le bourgmestre, les échevins etc. pour présenter les choses et en général on était très bien accueilli.

Et maintenant que IDR a eu un permis d'urbanisme, peut-être que les choses vont se faciliter?

Peut-être, oui, quand il y a eu une jurisprudence après ça améliore les expériences suivantes, ouais je pense que nous la question se posera pour la prochaine fois. Et tous ces aspects-là c'est lourd à porter quoi, c'est vraiment compliqué, et ici à cause de l'implantation actuelle, **la cohabitation entre les 3 locataires se passe pas forcément super bien, c'est des gens qui ont des problématiques différentes les uns les autres et ça s'entrechoque quand même assez fort, et donc du coup ça provoque des nuisances. Donc les voisins portent plainte, la police passe, et donc du coup il y a un impact aussi au niveau communal, avec même des politique** qui... enfin nous on a même craint qu'ils demandent de fermer le projet. Ça met beaucoup de pression tout ça, c'est quand même **un projet qui**

reste fragile, tes quand même soumis au bon vouloir des autorités communales. S'ils disent à un moment ça nous plaît pas, ça va être difficile quoi. Jusque-là ça tient mais c'est chaud.

Comment choisissez-vous de nouveaux sites ?

Franchement il y a pas 100 000 possibilités en fait hein, **les terrains on croit que y'en a pleins mais en fait y'en a pas tant que ça**. Et nous a trouvé ce filon par l'église en fait, et ça marche très bien parce que c'est vrai que nos modules ils sont adaptés, on peut les mettre dehors, souvent autour d'une église ta un espace et c'est ça qu'il s'est passé. On a essayé avec la STIB aussi, ça aurait pu aboutir mais c'était très long parce qu'il y a une grande hiérarchie à la STIB donc il faut que ça passe toutes les étapes. Ça aurait pu marché **donc il y a encore des moyens, des gens qui ont des terrains, des entreprises, des trucs, il y a moyen de contacter mais franchement c'est pas évident**. La on a trouvé. Ici la chance qu'on a c'est que ça va être une implantation un peu plus longue, à mon avis ça va être prolongé. C'est souvent des terrains sur lesquels il y a des travaux qui sont prévus ensuite, ici en tout cas c'est comme ça l'église allait être complètement, je sais pas ce qu'ils vont en faire mais, le truc était racheté, donc il y a des travaux qui suivent, c'est temporaire mais ici on a quand même quelques années devant nous, si ça se calme un peu.

Comment est-ce que les habitants ont vécu la relocalisation ?

Ah nos habitants, donc en fait ils signent des conventions temporaires, mais on peut les prolonger, donc on n'a jamais dit aux gens qu'ils doivent absolument quitter, donc ils ont le choix en fait au moment du déménagement, ils ont choisi si ils voulaient habiter dans un logement durable et quitter le Modulo, ou si ils voulaient suivre le Modulo sur le 2ème terrain. Et donc parmi les habitants il y en a un qui a suivi le Modulo, qui est resté et il y en a 2 autres qui ont été relogé en logement individuel par l'AIS, qui a proposé des logements, c'est ça les avantages d'avoir un partenariat comme celui-là évidemment, qui gère tous les contrats et tout ça. Et alors il y a dans le projet, donc il y a 3 locataires et ce qu'on avait convenu au départ c'est que a Diogène, il y a 2 projets de relogement, je te simplifie un petit peu mais il y a le projet Housing First qui travaille avec des personnes qui sont particulièrement vulnérables et qui cumulent les problématiques, c'est souvent des problématiques de santé mentale et toxicomanie cumulées. Donc c'est des gens qui ont parfois 30 ans de rue, fin c'est des profils quand même assez solides quoi, pas toujours mais en tout cas il y a un cumul de problématiques qui fait que la situation est très complexe, alors on voulait pas mettre 3 locataires Housing First comme ça regroupé parce que ça risque d'être explosif au niveau de la cohabitation et donc on s'est dit on va se donner plus de liberté de choix, pour choisir les candidats et on va aussi essayer d'impliquer toute l'équipe, parce que l'équipe Housing First elle fonctionne quand même un petit peu séparé, elle fait le suivi des locataires pour le logement, elle est un peu distincte de l'équipe de travail de rue, mais l'équipe de travail de rue mets aussi beaucoup de gens en logement, on fait 60/70 sorties de rue sur l'année, c'est beaucoup, mais vers tout type de solution hein, des maisons d'accueil, des trucs, mais on continue à suivre les gens qui sont sortis de la rue, et donc parmi tous ces gens il y en a certains qui entrent en logement, et qui se stabilisent. Et alors l'équipe de rue est toujours présente et puis fait un relais vers un service de guidance à domicile qui va faire le suivi sur le plus long terme, donc c'est un temps de latence avec 2 services autour de la personne, pour aider vraiment à stabiliser, ça marche super bien. Et là dans ce projet là il y a pas de critères, tous les gens qu'on rencontre en rue, on pourrait les sélectionner pour rentrer dans le projet, et ce qui permet aussi de se donner des libertés et de se dire OK avec celui-là, ça ça pourrait marcher, donc on fait un matching, on voit qui pourrait bien fonctionner ensemble. Et alors ici ce qu'on voit apparaître avec le Modulo, le fait qu'il y ait un des locataires qui est resté suite au déménagement, **si je trouve quelque chose qui apparaît de plus en plus fort c'est que on voit bien que y'a les gens n'arrivent pas au modulo comme ça, c'est parce qu'il y a un choix pour ce type de logement un peu alternatif, ça tu sens fort. Y'en a un qui est resté parce que lui vraiment il adore ça, il adore vivre la dedans.**

Aussi parce qu'ils sont directement en contact avec la nature

C'est ça, et ça renvoie à des images un peu, tu vois par exemple il y a une des locataires qui a vécu tout un temps de sa vie en caravane, dans un camping et donc ça lui rappelle un peu ça. Donc c'est des gens qui sont attirés par ce type de logement, et en fait, parce qu'il y en a un qui est resté, le locataire à qui on va proposer on se dit bah lui ça pourrait coller, pas tout le monde quoi. C'est un projet qui est chouette parce qu'il ouvre une porte particulière, ou une possibilité différente. Ça je trouve que c'est génial quoi. Et alors ça peut être soit un tremplin vers un autre logement, soit ils peuvent rester durablement là-bas, pour nous y'a pas de souci.

Sachant qu'ils vont bouger de site probablement.

Oui c'est ça ils devront bouger, on verra bien à la prochaine implantation, le gars qui a déjà bougé une fois peut être qu'il voudra bouger encore, pour nous y'a pas de souci. Le but évidemment c'est de loger les gens, on le considère pas vraiment comme un truc de transit même si ça peut être le cas.

Quelle est le propriétaire du terrain ?

C'est la fabrique d'église à Jette, qui fait le contrat d'occupation temporaire.

3. SOCIAL CONTACT (contact social)

Comment se passe le partage du site entre les habitants ?

Le premier site ça a été, mais comme c'est 3 c'est un nombre difficile, donc y'en a 2 qui étaient plus copains, le 3ème un peu plus difficile. Mais il y avait aussi un autre squatteur, un autre sans-abri qui habitait pas loin, qui a créé un peu d'histoire, enfin voilà c'est jamais évident, la cohabitation. Et en fait d'ailleurs c'est un truc qu'on s'est dit, c'est que l'aspect communautaire ça devrait faire l'objet aussi d'un investissement de notre part. Mais c'est un métier à part entière, commencer à faire des réunions avec les locataires pour leur faire exprimer comment ils se sentent les uns avec les autres,…

Parce que vous suivez déjà chaque personne

Oui c'est ça nous on suit chaque personne individuellement, mais souvent c'est des travailleurs différents tu vois, ta des travailleurs de rue, ta l'équipe Housing First, et même dans les travailleurs de rue ça peut être l'un ou l'autre fin c'est pas toujours les mêmes, donc chacun a un peu son suivi, et puis voilà on l'a pas encore fait, là on s'est dit qu'on allait investir sur ça, et l'idée c'était d'organiser vraiment des réunions communautaires, peut être ensemble avec l'AIS, à voir, mais ça on a pas encore initié parce que c'était tellement tendu la, que c'était même compliqué de se mettre ensemble à parler, donc si c'est pour tourner en conflit total, ça va pas aller s'il y a pas quand même une bonne, un bon point de départ, qu'ils ont tous envie. Mais en tout cas tu vois, on a des projets de logements communautaires aussi, donc il y a un projet qui existe depuis 20 ans qui s'appelle 'accès direct de la rue au logement', et ça ça mélange, je crois qu'il y a entre 5 ou 6 maisons, ou grands appartements, ou chacun a une chambre, chaque fois c'est entre 4 et 6 personnes donc c'est vraiment un gros groupe. Et donc chacun à une chambre et ils partagent les espaces communs, cuisine, salle de bain, et ça ça marche assez bien, mais justement pourquoi parce que il y a un partenaire qui s'appelle Family Home, qui est un service de guidance à domicile qui s'occupe de la gestion, et donc ils font des réunions toutes les semaines et donc ça aide à ce que les tensions soient soulevées, soient exprimées, et donc on voit que c'est vraiment un travail à part entière, je crois que sur des sites comme ça c'est important, et c'est ce que nous on a pas encore mis en place parce qu'à la base c'est pas notre boulot on est dans l'accompagnement individuel. Donc ici cet aspect-là, ce travail-là il est peut-être un peu à renforcer. Bah j'imagine, je pense ça dépend aussi de l'alchimie, quelque chose qu'on contrôle pas. C'est quand même des logements individuels ici donc il y a pas beaucoup de sujets qui peuvent, mais quand même, il y a quand même des interactions.

4. SAFETY (sécurité)

Avez-vous déjà rencontré des problèmes de sécurité sur le site et si oui, Quels sont ces problèmes et comment les gérez-vous ?

Non, il y a pas eu de problèmes. Non franchement les modules ils tiennent bien le coup, ils sont vraiment beau je trouve, les gens les adorent en fait hein, les gens sont vraiment très contents de la qualité du logement et tout ça il y a pas eu de problèmes.

5. RESPONSIBILITY (responsabilité)

Les futurs habitants sont-ils impliqués dans le processus de conception des modules ? Se sentent-ils responsables du projet ? (et donc en prennent soin ?)

Non on a pas fait ça, on a vraiment simplifié, on a fait chacun son rôle, les architectes ont construit le truc, nous on a cherché des terrains, moi j'ai sélectionné les candidats, on a chacun tenu à sa casquette, et c'est ça aussi qui a fait que ça nous a paru, bon c'était compliqué mais pas si compliqué que ça. Tu vois d'autres projets comme Home for Less à l'ilot, ils ont fait un truc participatif avec des étudiants qui ont dessiné les Modules mais c'est tout un autre volet. Non, nous on a rendu un truc tac-tac, les architectes ils savaient ce qu'ils faisaient ils avaient déjà fait du logement modulaire avant, donc ils avaient une certaine expérience de ça, donc ça n'a pas été très compliqué.

6. SOLIDARITY (solidarité)

Bruxelles a-t-elle participé au financement par l'appel d'offre du ministre du logement ? Quelles sont les autres subventions/ aides financières que vous avez reçus ? Une partie par Habitat & Humanisme/ IDR ?

Non, rien d'autre . Et ce qui a un facteur de stress aussi pour le porteur des projets surtout pour l'AIS c'est que budgétairement ils comptent sur 2 ans des loyers qui doivent tomber, pour que ce soit budgétairement viable. Voilà le subside il a permis la construction des modules, la première implantation mais c'était déjà limite quoi, donc au niveau financier il y a quand même de gros risques pour l'AIS.

Parce que pour IDR un énorme cout c'était le raccordement.

Nous aussi, mais la première c'était dans le budget, la 2e je sais pas comment ça s'est passé mais je pense que l'AIS y met du sien, nous on a aidé pour le déménagement tu vois on avait une queue de budget qui restait, c'est quand même des milliers d'euros hein c'est beaucoup d'argent. C'est ça aussi dans la **recherche universitaire-là qui accompagnent le projet ça va être une des questions, pour voir si aussi financièrement ça vaut le coup**. Parce que même moi avec l'AIS quand on en parle on se dit souvent bon bah voilà c'est quand même beaucoup d'argent pour un truc comme ça, tu vois si on avait mis cet argent dans la rénovation de logements on serait tranquille quoi. Parce que là il faut encore aller chercher, pour dans 2 ans, un terrain, à chaque fois.

7. TOTAL COST OF OWNERSHIP (coût total de propriété)

Le propriétaire (vous) doit-il payer des taxes en plus ? Si oui, quel genre ?

l'AIS est propriétaire des modules. Je pense pas qu'ils doivent payer des taxes en plus, je suis pas certaine.

Les éléments du bâtiment sont-ils intégrés de manière à pouvoir être atteints et récupérés sans trop d'efforts ni de dommages ? Si oui, de quelle manière ?

Bah je pense c'est tous des petits… c'est comme des LEGO quoi, c'est comme un LEGO. Donc si il y a une caisse qui est abimée on la remplace, oui c'est vraiment du modulaire hein. C'est même un système génial en fait, je trouve que c'est très bien fait, par rapport à d'autres modules que j'ai vu je les trouve super. Mais le déménagement, le remontage c'est quand même un mois de travail. Ici on les a déménagé l'un après l'autre, ce qui a permis au locataire qui voulait y rester, de rester dans son logement. Puis on a construit le premier, on a déménagé un des autres, on la construit là et il est resté dans un autre et puis on pris le sien en dernier, et il est resté dans celui-là. ça c'était chouette quoi, parce qu'il y a cet intervalle aussi, si les 3 avait voulu rester on aurait été en difficulté quoi.

8. CAPITAL ACCUMULATION (accumulation du capital)

Quel est votre modèle financier ? Quelle est la part de responsabilité de l'habitant par rapport au modèle financier ?

Oui, un loyer, c'est comme un contrat AIS quoi, c'est comme un Contrat de bail, un contrat d'occupation temporaire hein. Ils payent un loyer, je crois que c'est dans les 400, c'est un loyer qui correspond au barème AIS en fait. Ils payent les charges en plus. Donc oui je pense qu'ils ont un truc très classique loyer + charges.

Quelles sont les principaux matériaux utilisés ? (bois ?) Les matériaux choisis sont-ils destinés à durer dans le temps ? Ou plutôt un choix de matériaux renouvelables ?

ça je sais pas. C'est de l'OSB et de la laine de bois. Bon il y a des parties qui sont peintes, il y a des parties qui sont laissés en OSB apparent comme ça, ça a un petit côté cosi, chalet comme ça. Mais c'est des matériaux de bonne qualité hein, c'est des châssis en bois, nickel, bon vitrage. Franchement tout est bien fait. Le plan il est très simple c'est un rectangle, tu rentres ici et t'as une salle de bain là, et le long de la salle de bain ici t'as une petite cuisine, et puis ta la grande pièce, c'est un studio quoi. Et il y a des grandes baies vitrées donc c'est très lumineux aussi. Et les gens ne se plaignent pas d'avoir froid, tout fonctionne bien au niveau des installations tout fonctionne très bien. **Et il y a aussi pas beaucoup de dégradations, tu vois les gens n'ont pas dégradé parce qu'ils aiment bien logement, et ça c'est un truc qu'on voit dans toutes les études hein, plus tu donnes un logement de meilleure qualité et que les gens apprécient, et plus ils vont avoir tendance à bien respecter les lieux.**

9. FAIR INITIAL COSTS (coûts initiaux équitables)

Quel est le cout moyen de la construction d'une unité d'habitation ? Quels ont été les coûts les plus chers et les plus inattendus ?

A l'achat, c'est 35 000€ par module.

10. ADEQUATE LIVINGSPACE (espace de vie adéquat)

Comment les habitants se sentent-ils dans l'espace de vie de 28m^2 aujourd'hui ? (changement avec avant = rue)

Ils adorent hein, ils adorent l'espace. Ce qui pose plus de difficultés, pour le moment, c'est la cohabitation entre les habitants. Pour le moment, peut être avec d'autres gens ça serait pas ça. Pour le moment, les 3 qu'on a mis là c'est un peu compliqué.

Parce que du coup c'est louer leur premier logement après la rue ?

Oui, euh, attends. En *Housing First* l'idée c'est en effet de sortir les gens de le rue, mais c'est aussi de s'engager sur un accompagnement dans la très longue durée avec les gens, et il arrive très souvent que les gens n'arrivent pas à se stabiliser la première fois, parce qu'ils arrivent avec des problématiques dures et donc ils consomment et tout ça. Donc

nous on construit un réseau de soutient, on met un médecin, on mt un psychiatre, on déjeune avec eux, on voit ensemble avec eux à leur rythme. Mais bon voilà souvent ils arrivent en logement, ils se comportent pas parfaitement comme il faudrait et donc ça arrive qu'il y aie des expulsions. Mais pour nous c'est pas grave parce que moi je pense toujours que faire une expérience c'est mieux que de ne rien faire du tout, et je préfère une expulsion où on a expulsé à temps, pour pas épuiser l'environnement, pour pas épuiser les voisins, et avec la personne c'est pas grave on la lache pas et on recommence, et du coup il y a des déménagements. Et donc c'est pour ça que certains ne sortait pas directement de la rue mais avait déjà une expérience de logement avant. Mais c'est le cas pour une seule des locataires, sinon les autres je pense qu'ils étaient tous en rue avant, et des grosses situations de rue. Donc ça c'est chouette quoi.

11. SCALE (échelle)

Pensez-vous qu'une échelle plus grande du projet diminuerait les coûts totaux ? (plusieurs modules fabriqués en même temps ?)

Peut-être puisque IDR à l'air de faire ça. Nous on n'est pas trop, moi je pense que nous on va se limiter à un truc vraiment pilote, petite échelle pour l'instant, c'est chouette ça ouvre une possibilité en plus pour quelques-uns et c'est pas trop trop. De toute façon l'AIS ne voudra pas faire un truc plus grand, ils sont un peu, c'est trop de boulot quoi. C'est un peu un temps de travail qui est sous-estimé parce qu'on n'a pas de subside pour payer ça et il se met quand même beaucoup de temps de travail dedans. La réunion avec les chercheurs c'est intéressant mais le problème c'est

que c'est beaucoup de travail donc en fait ce qu'on voit dans le projet Housing First, puisque Housing First on cherche des logements tu vois. Parce que on reçoit pas les logements, on a des subsides pour payer l'équipe, mais on n'a pas les logements. Donc on doit aller prospecter partout, dans les sociétés immobilières et tout ça. Et en fait on fait ça donc on décroche des conventions dans des 'sist' ou dans des AIS c'est cool mais après tous les projets plus particuliers comme celui-là, on voit que c'est un truc qui bouffe un temps de travail de malade quoi. On a aussi un projet par exemple à Ever-City on a mis des gens en logement dans des logements qui étaient abandonnés, qui vont être rénovés, qui était encore en bon état mais il y avait plus de locataire ils étaient vides. Donc on a reçu les logements via Comuna, c'était tout un bazar mais ça fait des réunions, de partenariats, de trucs, tu vois, c'est un truc de fou quoi, alors que si on recevait des logements de 'sist' ou d'AIS, classiques, avec un Contrat de bail, c'est l'AIS qui gère, nous on fait notre travail d'accompagnant, c'est quand même beaucoup plus facile. Donc ici c'est des choses qu'on fait pour voilà essayer de grapiller des avantages d'offres de logements, un petit diversifier, mais ça coûte beaucoup. C'est pas forcément évident.

12. SERVICE LIFE (durée de vie)

Quelle est la durée de vie prévue des modules ?

Je crois que c'est 20, 30 ans, un truc comme ça. Il y a peut-être ça sur le site. Il me semblait que dans un des documents il y avait, je sais pas. ça dépend aussi combien de fois tu dois les démonter, tu vois si imagine tu peux rester 10 ans là, bah ils vont tenir plus longtemps évidemment. Mais bon en tout cas ils ont bien survécu au premier déménagement, ça allait. Donc on verra.

J'ai vu sur une photo que maintenant ils ont un aspect noir avec le bois qui a vieilli?

Oui c'était fait exprès hein, c'est du bois c'est comme ça. Mais ils sont joli aussi parce qu'ils sont 3 différents, tu vois les trucs de parements, donc le bois extérieur qui décore vient par-dessus la bache pour un peu faire un joli truc, c'est différent pour les 3. Ils ont chacun quand même un petit cachet particulier, et puis c'est dans des jardins donc il y a des petits pots de fleurs.

13. ENERGY AND WATER USE (utilisation de l'énergie et de l'eau)

Qu'est-ce qui est mis en place pour réduire l'énergie ?

Pour l'eau non. L'énergie non plus, il y a pas de panneau solaires. Peut-être qu'il y aurait moyen tu sais, moi j'ai mis des panneaux solaire à ma maison c'était gratuit en fait hein, ta des systèmes où ils récupèrent les certificats verts pendant 10 ans, et en échange ils squattent ton toit, mais ta ton élec gratos en attendant, donc ça pourrait être un moyen mais c'est encore du boulot d'aller prospecter ça. Je sais pas si ça a été envisagé, et puis on a quand même chacun vraiment séparés les trucs et donc nous on a commandé des modules, on a eu des modules et puis voilà, on s'est pas investi dans la conception du truc. Mais évidemment les architectes sont venus nous interroger sur les besoins des personnes. Donc je sais pas, c'est électrique en tout cas le chauffage.

Donc par exemple quand ils vous ont demandé les besoins de vos locataires, qu'est ce qui a été important pour vous de dire?

Je sais plus trop. Oui on a mis des tac électriques, on a pas mis de gaz. Souvent quand on a des logements qui doivent être rénovés aussi on dit il vaut mieux pas un hall d'entrée, il vaut mieux directement une sonnette sinon le hall risque d'être squatté, tu vois tout des trucs comme ça ou bien faut un parlophone pour voir mais ici comme c'est des modules il y a pas tout ça quoi. Il y a des petites palettes quoi tu montes, c'est tout simple. On a fourni la cuisine, on meuble aussi hein, on fourni meublé, et il y a une petite douche, il y a rien de spécial. C'est des logements classiques.

14. MAINTENANCE COSTS (coût d'entretien)

Qui est financièrement responsable des coûts d'entretien ?

C'est l'AIS qui est propriétaire, qui gère l'aspect mais nous on est là à côté quoi donc si il faut tu vois moi je peux aller chercher des fonds privés, tu vois, la fondation Roi Baudoin, chercher davantage de moyens. Voilà c'est possible d'appuyer quoi, on est partenaires donc on essaye quand même d'être ensemble avec ça.

Mais donc par exemple si nue des personnes qui vit la casse quelque chose ?

Ca va être au locataire de payer hein, il y a une garantie locative, donc ça va être pris sur sa garantie locative, si ça dépasse la garantie locative on va voir, peut être que nous on peut intervenir mais normalement c'est pas notre rôle, on est un service d'accompagnant on a pas de risque financier, l'AIS a un peu des moyens pour faire ça comme dans tous ses logements. Mais bon les moyens sont toujours limités évidemment. Donc on se serre les coudes quoi. Quand ils ont déménagé nous on a aidé quand même pas mal, on était pas mal, mais eux aussi ça leur a couté beaucoup quoi, donc on essaie de s'aider.

Et lors de la relocalisation c'est qui qui a démonté et remonté les modules ?

C'est les architectes. C'est un peu familial comme ça, on fait ça ensemble.

Et du coup est ce que le ceux qui habitent là ont participé ?

Non je pense pas, je pense pas, ils sont venus voir le site et tout ça, ils ont bien aimé, y'avait des commerces à côté, c'était accessible, c'était sympa. Je pense pas qu'ils ont aidé au montage, on n'est pas dans un truc participatif comme ça pour les modules. Je te dis c'est encore beaucoup de boulot de faire ça, d'impliquer les gens, ça demande un temps de travail quoi.

15. TOTAL COST OF USERSHIP (coût total d'utilisation)

Quel est le montant du loyer des utilisateurs, parviennent-ils à payer et est-il variable en fonction de leurs consommations d'énergie et d'eau ?

Oui, tu vois les habitants ils ont souvent le CPAS ou un revenu de remplacement, et ils payent avec ça. Tu vois ils ont 920€ du CPAS je crois, cette année. Donc voilà quand ta un loyer de 400/500, ça régule évidemment les moyens pour la vie même. Mais c'est le cas dans toute la ville, c'est des barèmes sociaux, c'est des barèmes pour un logement qui est quand même de bonne qualité en fait donc c'est raisonnable.

Et depuis qu'ils sont dans ces logements, est-ce que y'en a qui sont parvenus à trouver un job ou un travail ?

Non. Bah ça dépend, y'en a qui n'y arriveront jamais. Enfin tu vois il y a des profils qui sont pas, ou tu sais que c'est vraiment très loin, cette perspective, et nous ce qu'on cherche d'abord c'est stabiliser les gens et avoir un mieux être. Et une fois que ta une sécurité, tu peux construire des choses quoi. Mais bon il y a une personne qui est assez âgé là donc qui est pensionnée, il y en a un autre qui est fort consommateur, donc pour le moment on parle pas tellement de ça quoi. Mais c'est possible hein ça pourrait arriver ça dépend des gens.

16. End (Fin)

Après l'expérience que vous avez acquise, pensez-vous toujours qu'il est possible et nécessaire de travailler avec des logements temporaires sur des terrains vagues ? Quels sont les points positifs ou négatifs ? Quels sont les défis à relever ?

Moi je pense, je sais pas, moi je pense toujours que c'est quelque chose qu'on fait à défaut d'un accès pour tout le monde au logement social, tu vois de bonne qualité. Moi je trouve quand même que c'est à défaut de ça c'est ma première idée quoi. **Après, je trouve que à petite échelle c'est intéressant parce que ça répond à une demande particulière de certains qui préfères ce type d'habitat**. Et ça je trouve que c'est chouette, je trouve toujours dans le secteur sans abri plus tu ouvres des portes différentes, plus il y a des accès différents, et plus tu as des chances d'accrocher tout le monde, tu vois, d'y arriver. Si tu n'as qu'une entrée unique, tu bloques des gens à l'entrée quoi, donc ici ça ouvre des possibilités, ça crée du désir en fait. Y'a vraiment des gens pour qui ça a été waouh, et qui ont envie. Et quand ta ça par rapport au logement dans lequel tu vas rentrer c'est un porteur fabuleux pour la suite, très positif quoi. Quand la personne aime son logement et y adhère, trouve un truc identitaire et là c'est très fort avec le Modulo, alors ça c'est un point d'appui énorme pour le futur. Et donc en ce sens-là ça a beaucoup de sens, ça a beaucoup de richesses. Mais je trouve que faut faire attention à l'aspect communautaire, faut pas créer des ghettos tu vois à trop grande échelle, parce qu'il y a quand même toujours cette idée 'ah, c'est du sous-logement, des sous-homme' , il y a toujours un peu cette critique là derrière qui est un peu mal placé je trouve. Parce que quand tu vois que c'est très qualitatif et que quand même on a un partenariat qui fonctionne bien, l'AIS est très à l'écoute, il y a quand même beaucoup de qualité dans ce qui est offert, tu vois, donc je trouve que c'est un chance quoi pour certains, ça représente quelque chose qui a vraiment une valeur dans leur parcours, ça je crois bien. Maintenant développer ça à grande échelle, je sais pas. En plus je trouve que c'est un certain coût financier mais aussi en temps de travail, et aussi je trouve que pour développer ça davantage il y a d'abord des obstacles législatifs à solutionner. Cette histoire de permis d'urbanisme ça va pas, c'est pas possible tu vois, on peut pas faire un permis d'urbanisme à chaque implantation t'imagines le boulot, c'est pas possible. Donc je trouve qu'ici en rassemblant toutes les expériences qui sont déjà faites, il devrait y avoir un mais d'ailleurs ici il y a Sohonet qui a invité tout le monde, tous les gens qui portent des projet comme celui-là.

j'ai entendu que maintenant vous étiez en train communiquez plus entre vous

On a toujours communiqué un petit peu comme ça. Mais chacun fait son projet quoi. Ici il y a une invitation, j'ai vu qu'ils demandaient à ce qu'on se rencontre. Mais c'est ça l'idée, c'est de se mettre tous ensemble de dire voilà on peut développer ce type de projets, et de réfléchir à ça, et voir si c'est intéressant ou pas. 'Développement d'une stratégie bruxelloise coordonnée' tu vois ça ça va peut-être se développer maintenant, ils ont fait avec SAAMO, IDR et Un logements pour tous. Ils veulent développer des logements modulaires sur des terrains inoccupés, dans des bâtiments vides. Donc ils disent que le cabinet Marron souhaite soutenir ces initiatives mais dans le cadre d'une stratégie coordonnée avec l'ensemble des acteurs qui sont concernés. Donc c'est ça qu'on va faire, on va se regrouper on va dire OK on peut le faire mais selon ta condition quoi, il y a des questions financières, il y a des questions de temps de travail, il y a des questions de temps de travail sur le communautaire, et il y a des questions d'accès au terrain et de permis d'urbanisme. Il y a beaucoup de choses quand même, c'est souvent comme ça tu vois, les projets d'occupations temporaires dans les logements vides là, c'est chouette mais c'est aussi beaucoup de temps de travail, parce qu'il y a des questions de travaux, il y a des questions de signature de convention temporaire. Et c'est temporaire donc en fait tu restes toujours avec ta question d'accès au logement après, c'est ça le problème en fait. Chaque projet comme ça suscite un investissement qui est conséquent. Tu vois moi je fais la coordination d'une équipe, je voudrais être plus proche de mon équipe sur les situations de suivi qu'ils ont, et en fait mon temps de travail part dans des réunions comme celle-là. Et bon bah un moment tu te dis est-ce que ça vaut vraiment la peine quoi. Mais bon moi j'aime bien le petit projet qu'on a quoi, je suis quand même fière d'avoir fait ça.

Quelles sont les étapes futures pour vous et les plus gros challenges ?

Pour le moment on va surement pas augmenter. Et les étapes ici c'est surtout de stabiliser la situation actuelle, qui est un peu difficile avec les locataires qui sont sur place quoi. Donc y'en a un qui va partir, quelqu'un d'autre va venir, enfin d'essayer de profiter un peu de du temps qu'on a ici pour arriver à une situation un peu stable et où les gens peuvent vraiment profiter.

Et vous y êtes depuis combien de temps sur ce site-là ?

Pas encore 1 an, je crois que c'était l'été dernier que ça a été fait.

Et le but c'est de rester combien de temps ?

Je crois que c'était 2 ans mais à mon avis ça va être prolongé. On avait déjà des perspectives de prolongation, et la ça va surement être prolongé.

ANNEX 6: INTERVIEW 4 - JURGEN VAN MUYLDER AND KEN SMETS

0. To start

What is your implication in the firm?

Ken Smets: I will start. I am a structural engineer and I make the calculations regarding stability of our buildings. Buildings that sometimes have 5 storeys. I also determine the foundations. I also deal with all kinds of regulations such as fire safety, accessibility, energy performance and ventilation. But equally I am also finding practical solutions to problems that arise, mostly context and … specific. Shortly my tasks in the firm.

Jurgen Van Muylder: And for me shortly I am a representative. More specific what do I do: One part is business development, meetings with all kinds of clients, could be a school, could be a government, could be someone of business and industry, could be an architect. And at the moment at interim also account management for 2 regions that we are searching an account manager for. So I combine at the moment 2 jobs, the hunting job and the farming job as sailes, actually.

What is the actual biggest active sector of De Meeuw in Belgium? (Industry? Education?,...)

JVM: The largest activity at the moment is government and business industry, but government could be everything, because healthcare is also governmental, education can also be governmental. And I think the value now is 60-40, approximately, so 60% government and other things concerning, 40% business and industry that could also be a lot of things.

And what would be the % of temporary versus permanent buildings you produce?

JVM: That is, with corona, a very difficult question because the market is changing a lot, and the large investments are postponed a little. Before, I think it was 50-50, and now I think the temporary market is 60%, or even 70%, and the permanent buildings are 30%.

Are there some buildings assembled on site with prefab components, and some that are directly brought in 1 piece on a truck?

KS: Usually the units are transported in their entirety to the destination, location. But because of a greater design of interior for example, standard units are transported as flat packs, so floor, roof, and outer walls separately. Also the roads and bridges have their limitations so we have to respect those limitations.

JVM: And legislation in Belgium, or in the Netherlands, or in France, or in Germany, or in Switzerland, etc, are all different concerning transport. Legislations, the height of for example bridges, etc. Concerning that, it is also very interesting to check our Youtube channel.

1. COMFORT

Daylight: How do you choose for the placement and orientation of the units on the different sites?

KS : This is always done in consultation with the architects and the client, because our windows and doors have fixed dimensions. And sometimes we can deviate from the standards, when it comes to projects with a more permanent character, or when the customer purchases the building, so both are possible.

Because if you move the temporary units after some time, you will have fixed openings so you will have to think about a new orientation, is this something you have to think about?

JVM: Yess, definitely. And for example if there are a lot of windows at the orientation side were the sun will be during the day, I think it would be annoying for computer screens, etc, then we can also provide the client with screens or that kind of things to provide a block of the sun to get the work done without the interruption of the sun on the screen.

Accessibility: Do you provide a solution for disabled people to access the buildings?

KS: Yess, that is the legislation so we have to adapt our buildings so this is definitely taken into account in our configuration of our modules, for example the width of access doors and minimal tresholds for wheelchairs.

JVM: Or with ramps.

2. NEIGHBOURHOOD

Did you already relocated some buildings because the site was not adapted anymore? In these cases did the client moved with the building?

JVM: That the client is moving with the building that doesn't happen a lot. Most of the time it is that when a building is transported to another location, most of the time it is used by client 1 during 5 or 10 years, and afterwards it is relocated for a new client, or it stays at the same location for a new client and afterwards it is relocated. Both are possible.

5. RESPONSIBILITY

From what stage of a project is a client involved in decision making?

JVM: Day 1. And that is actually my job, the hunting part, we are active on the hunting, to see what is going on in the market, who is building, who is thinking about building, where are there subsidies, funds from the governments (where it is for). And my job is to be as soon as possible with the client to see what they need, what we can provide; temporary, permanent or in between, and then give the best possible solution with the best type of chassis we have,… To help the client and also to get the project started and advise the client. Because the most ideal way of working is that a modular building solution is being thought-of from the beginning. Not that there is another work around. First it is traditionally designed and then that we have to be in this kind of design suit that we need to adapt, that is not the way we work ideally.

KS: In addition, it is very important that all the thinking work is done beforehand, because when a client wants to make some changes in the stages where the modules are already in production, it is very difficult to do those changes. That is an important difference with traditional building. In traditional building, you can, when you have a wish to put and extra electricity point or a lightning, that is no problem. But in modular construction it is not easy.

And is it than easy to adapt the building later, if it is already standing?

JVM: Technically, yes, because we don't have any *** wall. So it means, when we have our structures, or only the steel frames needs to stay, and the rest can be changed. Of course, they need to think about it, the technical things, such as data, electricity, all the water, etc, that is something else. But technically yes a building can be striped and reinvented and then changed, yes.

Do the users of the units feel responsible/care about the units, even if they are only used temporarily?

KS: We have a warranty and maintenance contracts with the customer. So in case of any damage there are clauses. But the main principle is the principle of good housekeeping. When a customer takes care of an accommodation in the right way, there will be no problem. We also give the client instructions when he wants to attach some things on a wall, we give instructions how he can do that. For example on this image, with a bit of wooden structural beams, and you can attach some…

JVM: There can be for example a school teacher that can attach… You can see this picture? So for example, there are 2 vertical wooden things that are put on the wooden structure, and there they have put this kind of board. So there they didn't made holes in our wall, it is without any costs.

JVM: So we say beforehand, before the renting starts, this is the way of working, actually the same as when you go to rent a car from a Europcar, exactly the same. With a picture when the client arrive, and when there are some kind of scratch's, pictures taken, and when we go back after 6 months, 2 years, 5 years, there are several things that are acceptable, but for example when they make holes like this, that's not acceptable, and then they need to pay.

7. TOTAL COST OF OWNERSHIP

Maintenance and repair/replacement : Are the building components integrated so that they can be reached and recovered without much effort or damage? Do the clients usually take the 'maintenance contracts'?

JVM: It is easy to replace, of course it costs something, to replace. But, as you see, for example here are different types of materials, they are reused after renting or when the building comes back. For example, the wooden structures here are actually used by reverse logistics, and put back into our logistic process.

JVM: When we go to this slide, you can see that we use the materials, that we reuse them to create the new modules, the new buildings.

And do people usually take the maintenance contracts and what does it involve?

JVM: It depends. Standards, they rent a building, as you would rent a building, or an apartment, or a house. When something is broken, then it should be repaired. Of course, for example when a door is broken, it is not included. The material, the working hours,… need to be paid. What can be in the maintenance contract, the maintenance of for example data, the heating and the cooling, there for there can be a maintenance contract. For example, I think there is a client in Leuven who has a maintenance contract for several things, and there is 1 thing, that we need to go and check the rooftops every 6 months, or every 3 months. So it can be delivered but it depends on the client. Because a lot of clients, cities,… have their own technical people, and they do it most of the time themselves.

KS: It is also related on the surface of the building, a bigger building, mostly the installations are from an organization or the clients themselves. For smaller buildings, we can do the maintenance for the client.

If you are the owner of the units (as I understood, in some cases) , do you have to pay additional taxes, even for small temporary units?

JVM: When you own a house, you have a certain tax for the house, for the ground, etc. That is, as far as I know, not the case for our buildings. We never own the ground, so we let the client rent the building, and we own the building, the building can be relocated and the ground is not our ownership.

8. CAPITAL ACCUMULATION

How are your 3 financial models working? (rent, purchase or buyback) How much responsibility for the inhabitant in relation to the financial model?

JVM: First, the type of possibilities is also related to the type of building. For example, there are also possibilities that we sell the building to the bank, and that they have a leasing with a bank, and then the lease is done by a bank. That is one option. Rent is also of course second option. Then, the rent can be done by us or by a bank. And, buyback, actually that is something that is not very often done. When it is renting, it will come back after the period of rent, is it 5 years, 2 years, it doesn't matter, it can come back or it will come back. And when it is bought, the difficulty, is there a buyback option when it is done in the beginning, and maintenance is stipulated as well, then we can provide also a financial model, otherwise we don't know how the building is maintenance. And that is the difficult one, because we have clients that are very good in housekeeping, but we also have clients in business and industry, in a regional port, that is not so well provided, or that is not handled with care, and then it is very difficult to give a detailed price of buyback.

Are the materials chosen to last in time?

KS: Of course. You can compare it to traditional building, we use the same materials as in traditional building, our modular buildings will also have a life of 30 years, or more.

JVM: For example, I have already visited clients that had a container building for 2 years, and actually after 30 years they say now it is time to change, but it was provided for 2 years. So even in our temporary models. We have 3 types of models; temporary, permanent and semi-permanent. But even in our temporary models, we use the same kind of wood, the same kind of steel, the same type of rooftop cover, and that is EPDM, so that is a firestone material, we don't use less qualitative materials, because that is very important for us, quality is our main gain.

KS: And I think it is not only the quality of our materials, but also the position of the materials, the building physics, is also important. You can place the qualitative materials in a bad position in a building for example, and your building will have problems, in a couple of years. Internal condensation for example, and then your building will last not a 10 years. So it is not only the quality of the materials but also the way of working.

JVM: We do it now for more or less 90 years, and the quality of working, the quality of the concept is also the way of building. In every type of process we see that the way of working is as we would do it for our own, it is maybe the ideal way of working, but it needs to be done how it should be done.

Does the components have a standardized shape and size?

JVM: We have different standardized shapes. This is type Fast and Flex, and here we have 1 size. So actually it is 3x6m approximately, and 3m high. The maximum is one ground floor, and first floor. Then we have our type Kombi, here there are 2 measurements, 3x3 and 3x6, and the height is, whether interior height 3m, or interior height 2m60. And then we have our type Max module, and our type on platform module, then the sky is the limit, we can go to 7 storeys buildings, and we have 5 different lengths, 2 different widths, and 2 different heights. And if it is necessary to transport a building with the components separately, then it also can be done. For example it is necessary when it is higher than 4m, because there is not a bridge that can be passed when it is higher.

JVM: It is the same as if you would go to a showroom of cars, for example. What is the best type of chassis that we can provide you to provide you less time of building? So we don't put the luggage at the client to decide what type of chassis we need to use, we ask the client what he need, and we are going to see what kind of chassis is ideal. For example, when it is healthcare and it is a surgery room, then the chaking of the floor needs to be minimal, and the floor needs to provide a maximum weight care with all the technical instruments. That is not necessary in school environment, for example.

9. FAIR INITIAL COSTS

Do you consider that the initial cost of De Meeuw buildings is affordable? Do you consider that it is affordable on the long run?

JVM: Depends what type of building we are renting to the client; temporary building is more standardized, and then we have our standards in components. When it is all the way, then the cost is approximately the same as in a traditional building, and when we go to some kind of pictures, this is the standards as standardized component.These are all the standards components that we provide very fast. And if we go to buildings like this, Hotel Jansen, it is still a standardized way of view, but we really start with a white sheet of paper. When we go to this kind of building, the international school in Amsterdam, it is a temporary school for 10 years, but it has nothing to do with temporary, as you can feel on the images. And then we have the in between, it is technically exactly the same as Hotel Jansen, but you can feel that it is more temporary.

11. SCALE

Is the big prefab producing process of the firm diminishing the total costs?

KS: Yes, it is the logical way of things. Our company in the Netherlands, I think they produce…

JVM: between 12 and 14 units/day, in a normal way of working before Corona. The last 2/3 years it changed of course with corona because the way of working, the proximity between people, changed. But normally it is between 12 and 14 units/day that can be produced, and it is kind of first-in-first-out, and then the on-time management. So in the ideal world, and that is the type of way we like to work, we produce, 1 or 2 day on our compound, and then its immediately transported to the ground of the client, to get the building structure finished. It can be put temporarily on our compound but that is not the ideal way of working. So when we do the maths, 12 or 14 units a day at a minimal of 18m^2, it is already kind of a building that can be produced. And on the transport way, we can approximately put, each day, in between 10 and 12 units of 18m^2.

Do you know some numbers about the other similar companies in Belgium?

JVM: We know them but we don't know their production numbers, that is something we don't know. If you have those kind of info we are always interested haha.

12. SERVICE LIFE

How many times could a building be reused/relocated and what would be its life expectancy?

JVM : That depends on the type of building of course, when it is permanent building, and it is finished with bricks, I wouldn't advise to relocate it that often. Technically, it can be relocated "every month", a temporary building you can always rent starting from 6 months, so when you have a school that is relocated each schoolyear, maybe it can be relocated 12 times. Is this the ideal way? No. Most of the times I think a temporary module is relocated 4/5/6 times. And the semi-permanent constructions is relocated maximum 3 times. And I will give you an example. So this is for example the school, first it was actually a bank building, for ING. After it was changed to become a school. And after 12 years, it was changed to this building. And the first time it was created in 1998, afterwards it is relocated in 2001 (1st picture), and in 2009 it is relocated to Delft. (last image) There is also a movie on Youtube about the relocation. And you can see the way we work, first of all the foundation, etc, the dismountation and the relocation.

13. ENERGY AND WATER USE

What is put in place to reduce energy in the buildings? Is something put in place to recuperate water?

KS: Green top roofs, solar panels, heat pumps, and the insulation of our walls, roofs, floors is conform requirements.

JVM: Technically there can be a green roof added, or solar panels, or that the rainwater can be reused, technically everything can be done as in a permanent building.

15. TOTAL COST OF USERSHIP

Related to the total cost of ownership, if the users are renting, do they pay a monthly rent and are the energy and water costs included in the rent?

JVM: The client has its own contracts with the water company, with the electricity company, etc. This is really something that they need to take into account, yes.

16. End

Do you personally believe in the model of De Meeuw? What are the biggest challenges?

JVM: I do believe in it because otherwise I wouldn't be sales.

KS: I also believe in the model of modular building, because in one way it is the future, in terms of climate change, we have too much waste of material in the world of building, we try to restrict that a little bit.

JVM: And I also think one of the important things to think about is, we see that every traditional building construction company is now thinking about modular ways of thinking. So this is the biggest challenge, keeping a head of the competition is try to provide as well modular structures, to keep up. And the other way around is that we don't only provide temporary solutions, but also permanent solutions. For us, it is also important that clients know that it is not only a containerized solution, that is really a permanent building solution, based on modular structure.

Who do you think are your biggest competitors?

JVM: Depends on what kind of market we are talking about. For example in temporary market, you have Portakabin, Modulco etc, but in permanent we also have the big companies like BAM, Willemen, etc that we are in competition with. So it is a difficult one, the combination.

Do you think the flexible system of De Meeuw would be suitable for housing, like in the Netherlands?

KS: Of course, it is logical, we have the possibilities to provide housing, modular buildings, but the size of the market has to evolve with us, for now people have a stone in their stomack. They want to build traditionally, their houses. So there first has to be a change in mindset, and there is a change but it is too small for the moment.

JVM: And then in combination with that, you have every regional city that has its own legislation that can be done there. This kind of material can be used over there, and for example there are a lot of building grounds that are 9 or 10m, the module needs to be 7m or 6.60m etc, so the difficulty is that we don't have the possibility to have large ground to put a building or a larger building. I think, first step is student housing, perfect first step to get it done, and then the mindset will change, in the next generation. And that you can see also on our website, that in the Netherlands, student housing, it is logic that it is done in temporary solutions for 10 years and more. In Belgium we think it is container, and that is the first thing that has to change.

KS: In the Netherlands there is also more a culture of collective housing, more than in Belgium.

JVM: They have also a way of renting, 2 chairs, 2 desks etc, for x months, and afterwards you have a new boyfriend/girlfriend, and you need an extra bed or something, you can change your chair for a bed and pay 50€ extra/month. And that in combination with their student housing, combined with housing for immigrants, in the Netherlands, and then they also combine the money they get from their student housing, with care for elderly people, and that the students get an extra fee, their renting fee that they can pay less if they spend time with the elderly people, for example. So mindset changes.

Possibilities are already there we have already done this in the Netherlands, but the mindset in Belgium is not always ready for it.

ANNEX 7: INTERVIEW 5 – MARGOT VREMAN

Role: Policy advisor on housing and demographics, Account holder Housing and Real Estate Theme Table, Aalten

0. To start

Wat is de huidige situatie in Aalten? Hoeveel Uuthuuskes werden er al gebouwd, hoeveel personen wonen al in Uuthuuskes?

In totaal was het plan om er tien te realiseren, daarvan zijn er inmiddels 8 gerealiseerd en ze zijn ook alle 8 bewoond.

1. COMFORT

Hoe heeft u gekozen voor de plaatsing en oriëntatie van de eenheden op de terreinen in Aalten?

Nou, we hebben daarvoor gekozen omdat de meeste locaties bestemd waren voor wat duurdere woningen, en we zagen dat gewoon tekort was aan betaalbare woningen in de kleine kernen. Dus de kleine kernen zijn echt dorpjes met zo'n 100-400 inwoners, waar vooral duure huizen staan. En deze gronden waren van de gemeente, en zijn nog steeds van de gemeente. Inmiddels zijn de bouwkosten een stuk gestegen maar toen kon je nog redelijk betaalbaar modulair bouwen. Vandaar dat er was gekozen om dat op gemeentelijke grond te doen, want dan kun je het zo snel mogenlijk realizeren ook.

Kunnen mensen in een rolstoel toegang krijgen tot de accommodatie of erin wonen?

De woningen zijn wel gelijkvloers, alleen we hebben een aantal concessies gedaan waardoor het niet 100% toegankelijk is voor mensen met een rolstoel en dat zit met name op de badkamer. De douche is denk ik te klein om zelfstandig met een rolstoel te kunnen douchen.

2. NEIGHBOURHOOD (buurt)

Wordt de buurt bij het project betrokken? Bijvoorbeeld activiteiten ter plaatse/ bewustmaking en informatie?

Ja, we hebben de buurt, zodra wij wisten waar de uuthuuske, op welke plek geplaatst zouden worden, hebben we een concept ontwerp tekening gemaakt, tekeningen. En zijn we met de buurt gaan praten of ze akkoord waren en of zij nog suggesties hadden. In een aantal gevallen hadden we ook verschillende varianten, en heeft de buurt gekozen welke varianten voorkeur had. En zo hebben we met bepaalde buren afgesproken, en zo zijn er een paar oplossingen gekomen.

Hoe kies je nieuwe locaties? Is het makkelijk om terreinen te vinden?

Ze zijn op de terreinen van de Gemeente zelf. En, we hebben gewoon gekeken in iedere kern van is er grond van de gemeente, en is die locatie dan gestrikt?

5. RESPONSIBILITY (responsabilité)

Hoe werden de toekomstige bewoners betrokken bij het ontwerpproces van de modules?

We zijn eigenlijk begonnen met een bijeenkomst voor de inwoners. Of in ieder geval voor toekomstige bewoners en toen hebben we gepeild van ja, wat is nu in dit geval de behoefte? Toen hebben we ook aangegeven nou hoe de verhuur

processen tot stand zou gaan komen. En uiteindelijk hebben we bij de lokale belangenverenigingen neergelegd om met de verhuurders te komen. En uiteindelijk hebben wij alle huurders, of vertegenwoordiging daarvan, want niet Iedereen had behoefte, om mee te denken over het ontwerpproces. Dus zo hebben zij mee kunnen denken met de indeling, hebben we nog een aantal aanpassingen gedaan, naar aanleiding van hun inbreng. Ze hebben zelf hun keuken, sanitair uit kunnen kiezen. Ze hebben nog meegedacht ook bijvoorbeeld over de plek, dat soort zaken.

7. TOTAL COST OF OWNERSHIP

Wie is de eigenaar van het land? En van de Uuthuuskes?

Dat is een ingewikkelde constructie die komt van de Nederlandse wetgeving, dus ik weet niet of

het helemaal begrijpelijk is. Maar de gemeente is inderdaad de eigenaar van de grond. Wij hebben ook de Uuthuuskes gekocht, en vervolgens hebben wij de grond met het Uuthuuske uitgegeven in erfpacht aan en coöperatieve vereniging. En die coöperatieve vereniging die bestaat eigenlijk uit leden van de dorpen, hè? Dus de belangenverenigingen van de dorpen, en de huurders zlef, en niet bepalen dus met elkaar het huurbeleid ook.

Wie is verantwoordelijk voor het onderhoud?

Wij hebben in de basis voor het onderhoud, is verantwoordelijk de coöperatieve vereniging.

Ja, daar moeten zij dan nog voor sparen, ja.

Hoeveel zou het kosten om de modules te verplaatsen?

Ja, ze kunnen verplaatst worden. Wij denken wel dat ze misschien wel wat langer zullen staan dan de bedoeling, maar we hebben ze in ieder geval vergund voor 10 jaar. Ze zullen langer staan, he, want dan zullen we uiteindelijk ook de bestemming moeten rijzigen. Maar als we ze willen verplaatsen, ja op dat moment, op het moment van bouwen waren de kosten ongeveer € 6.000 te verplaatsen per stuk. Ja nu met alle inflatie, en brandstofprijzen en dergelijke zal ook wel wat duurder zijn. Maar het is ook een beetje afhankelijk van de nieuwe plek en de beschikbaarheid en de afstand die afgelegd moet worden. Ze kunnen verplaatbaar worden, maar we hebben wel gezegd, ze moeten dan wel eigenlijk structureel leeg staan. Want Je kunt beter een half jaartje leeg laten staan dan op zo'n korte termijn verplaatsen.

9. FAIR INITIAL COSTS

Wat zijn de gemiddelde kosten van het bouwen van een wooneenheid?

De kosten op dat moment waren € 110.000 (inclusief BTW). We weten inmiddels dat dat rond de 180 /190/1000€ wordt.

10. ADEQUATE LIVINGSPACE

Hebt u hoe de bewoners zich voelen vandaag in de leefruimte?

12. SERVICE LIFE

Wat is de verwachte levensduur van de modules? Hoe vaak denk je dat ze verplaatst zouden worden?

Ja, wij hebben ervoor gekozen dat de woningen moeten voldoen aan het bouwbesluit dat in Nederland geldt. Dat betekent dat de levensduur in de basis minimaal 50 jaar moet. Natuurlijk moet je na een jaar of 20 groot onderhoud doen hè, om dat ook dergelijk te kunnen doen. Goed kunnen, hè, schilderwerk, van binnen zul je ook wat voorzieningen moeten treffen, isolatie werken,… Maar in de basis is de materialisering voor permanente bouw bedoelt.

15. TOTAL COST OF USERSHIP

Hoeveel huur betalen de gebruikers, hoe is het met hun energie-en waterverbruik?

Nou de huurders zijn begonnen met een aanvangshuurprijs van € 525 per maand, en we hebben geconstateerd dat dat wel wat omhoog moet. Dus we zittende nu met de indexatie met afspraken over de huurovereenkomst. Maar we wachten wel dat zodra wij de huur opzetten en er komt een nieuwe huurder, du huuren te richting de € 600 moeten gaan.

De huurder is zelf verantwoordelijk voor zijn energielasten. Nu is het wel zo dat er uiteraard geen gassen zijn, de woningen zijn helemaal electric. Dat betekent dat er ook geen warmtepomp in zit en dus verwarmd wordt op basis van elektrische voorziening. En in principe zijn de woningen energieneutraal, dus er zitten voldoende zonne panelen op, om van energie te voorzien. Alleen ja op zonnige dagen leveren ze dus terug en op niet zonnige dagen heb je dus energie nodig van het net.

16. End

Denkt u, na de ervaring die u hebt opgedaan, nog steeds dat het mogelijk en noodzakelijk is om te werken met tijdelijke, verplaatsbare huisvesting? Wat zijn de positieve of negatieve punten?

Ja, kijk, er is een behoefte in, dat niet primair de behoefte is van de verhuurder. De verhuurder wil liefst een woning kopen en daar gaan wonen. Maar ja, die is er niet. Dus het is een eigenlijk een substitutie vraag die je invult, en in die zin, juist doordat flexibel en verplaatsbaar was het betaalbaar maar nu met enorme prijsstijging is het dan nog wel te exporteren, hè. Met absolute discussie nu als ze bijna twee keer zo duur kosten dan wat ze voor 1,5 jaar geleden waren. Dan weet ik niet als dit nog het juiste product is. Maar ja klein en betaalbaar bouwen, dan niet verplaatsbaar, denk ik dan wel dat dat voor nu een belangrijk product is. Want het alternatief is dat er geen huis is voor bepaalde groepen op de woningmarkt.

Wat zijn de volgende stappen voor u en wat zijn de grootste uitdagingen?

Voor nu zijn wij nog aan het zoeken naar een locatie van die laatste twee. En, we hebben nog in een ander dorp georganiseerd voor 4 Uuthuuskes. Maar ja, wegen de enorme prijsstijging denken wij voor nu het bij een afronding te houden voor die laatste twee. En niet verder, want het past niet bij de schaalgrootte, want zo een grote gemeente zijn we niet, 27 000 inwoners. Dus zullen we niet een tweede fase of derde fase, of verder uitrollen. I denk wel dat de collectieve vereniging, die heet officieel de achterhoekse wooncoöperatie, de AWC, zij zijn wel zoekende aan andere delen van de regio. Om te kijken of er ook andere gemeentes zijn die het project verder zouden willen uitrollen of in een andere vorm.

ANNEX 8: INTERVEW 6 - JEREMY ONKELINX

J'espère que je pourrais t'apporter les réponses dont tu as besoin. Je suis ici depuis 2 mois, avant je travaillais chez Rudy Vervoort pendant 5 ans. Donc je suis urbanisme moi, géographie urbanisme, et un petit peu ingénieur parce que j'ai mon bac ingénieur quoi si tu veux, j'ai changé d'études. Mais en fait donc du coup je m'occupais du développement territorial pour Rudy Vervoort, et ici depuis 2 mois je m'occupe de logement, logement d'urgence, égalité des chances, toutes les campagnes de LGBT fobie, etc. Puis la guerre a éclaté et comme je m'occupe de logements d'urgence sans-abrisme ici, les Ukrainiens rentrait dans cette caractéristique. Donc du coup c'est devenu un des dossiers qui a grossi et donc je m'occupe en majorité de ça aujourd'hui. Et donc je connais très bien Infirmiers de Rue, je connais très bien SAAMO, on est en train de travailler avec eux pour pouvoir développer des modulaires dans le cadre de la gestion de la crise ukrainienne, c'est pour ça que je les connais, c'est par rapport à ça, et je ne connais pas beaucoup plus que ça au niveau technique etc. Mais je vais pouvoir en tout cas te relater les conversations qu'on a avec eux et tout ce qui concerne cette matière quoi.

Donc maintenant vous vous essayez de développer ça pour les réfugiés ukrainiens c'est ça ?

Tout à fait donc on a identifié une série de terrains appartenant à la SLRB, moi je m'occupe des terrains en gros SLRB puisque Nawal Benhamou est secrétaire d'État logement et a la tutelle sur la SLRB. Donc la SRLB a essayé d'identifier des terrains vides où on pourrait développer des modulaires, y'a Citydev aussi qui va s'occuper de développer une série de modulaires sur des terrains autres que SLRB donc plutot des terrains de la SAU, et je pense qu'il y a quelques terrains du fédéral aussi, donc ça c'est Citydev qui le fait et de l'autre côté on s'occupe ici au cabinet, moi en l'occurence, pour le cabinet, avec la SLRB de penser à développer des logements, des villages de modulaire, une centaine. Je suis en train de justement remplir des fiches pour demander un budjet.

Seulement à Bruxelles ou en Belgique aussi ?

Juste à Bruxelles. Donc moi je travaille pour le gouvernement de la région bruxelloise donc on travaille sur le territoire de de la région bruxelloise et pas ailleurs.

Et vous trouvez assez de de terrains qui sont disponibles ?

Ben écoute on en a trouvé une série, je peux malheureusement pas t'envoyer le document parce que c'est encore en version de travail, mais par contre on peut se tenir au courant, tu peux m'envoyer un mail déjà la semaine prochaine, est-ce qu'il y a du neuf, donc n'hésite pas. Je peux t'alimenter de matière une fois que je peux communiquer là-dessus. Mais du coup actuellement on a identifié un terrain qu'on appelle Shakespeare à Anderlecht, Verdun, ça c'est à Haren, c'est des terrains en gros en attente de travaux, et comme pour le moment ils sont toujours à l'étape friche, voilà on voit un potentiel pendant la durée ou ils sont en jachère, on voit là un potentiel de développement de village modulaire, c'est ce qu'on appelle l'occupation temporaire ou transitoire tu vois. Y'a Verdun, du coup qui est à Schaerbeek formation, juste à côté. Ensuite il y a, le Keyembept, qu'on a aussi identifié ça c'est à Uccle, c'est aussi à l'étude. Et puis le Gazomètre à Molenbeek Saint Jean, ça c'est aussi un petit terrain, qui est bâti en grande partie par du logement social et puis y'a toute la parcelle qui n'est pas bâtie. Et donc là on imaginait peut-être refermer le bâti avec 2 étages de modulaires, et pour tout ça en fait on va justement visiter. Mais je continue la liste donc il y a Tritomas à Watermael-Boitsfort qui appartient à la sisp du logis floréal, aussi un terrain vide sur un terrain de rugby d'ailleurs, j'achète pas le reportage photo. Et puis il y a le Champ des Cailles à Watermael-Boitsfort qu'on a identifié qui est vide aussi, mais là c'est plus compliqué politiquement parce que il y a pas mal de problèmes autour de l'urbanisation du projet de logements sociaux du champ des cailles, je sais pas si tu as entendu parler, avec la commune et la région, la commune

ne voulant pas qu'on construise de logement social, parce que comme c'est une commune plutôt bourgeoise et donc écolo, mais ils préfèrent en fait qu'on laisse le terrain vierge pour des projets de potagers collectifs et nous on fait construire du logement social puisqu'il y a 50 000 foyers en attente d'un logement social et donc ça c'est vraiment le bras de fer typique entre certains courants écologistes qui ont tendance à instrumentaliser la cause écologiste pour refuser de créer de la mixité sociale sur son territoire, donc là du coup imaginer qu'on va mettre des containers avec des ukrainiens ça risque de poser problème politiquement. Mais bon voilà en tout cas on le terrain est quand même dans la liste comme terrain retenu.

Et puis voilà c'est tout, c'est déjà pas mal et on va aller visiter vendredi avec Infirmiers de Rue et avec SAAMO, Vivaquoi, Sibelga et SIAMU, pour voir en quelle mesure on peut activer ces terrains pour créer des modules, des villages modulaires, et combien de modules on met par terrains. On va pas en mettre 100 au même endroit puisque là ça va devenir un bidonville en fait. C'est super comme projet mais ça reste quand même du temporaire et donc la question se pose est ce qu'on crée 2 zones avec 50 modules ou est ce que on retient tous les terrains pour en mettre quelques-uns, pour ne pas générer de concentrations trop importantes. Parce que après qui dit logement dit enfant, dit besoin en école, besoins en santé, ce qui va peut être surcharger les services d'équipements collectifs dans les communes donc il faut qu'on réfléchisse à tout ça. Ou est ce qu'on les place, en fonction de tous ces facteurs tu vois.

Mais donc vous vous concentrez sur les Ukrainiens pour le moment

Moi oui c'est ça, j'ai eu une réunion quand je suis arrivé avant que la guerre éclate donc c'est la toute première semaine ou j'étais là, justement avec SAAMO, Infirmiers de rue, et alors Vivaquoi, Sibelga, le but étant de leur trouver un spok dans ces structures pour qu'ils puissent facilement appeler et avoir des avis lorsqu'ils identifient des terrains pour mettre du modulaire, outre que pour les Ukrainiens. Parce que en effet c'est quelque chose vers lequel on va de plus en plus, bon je sais bien qu'Infirmiers de Rue c'est un but propre, c'est pas le même type de module que SAAMO par exemple, c'est des modules d'une chambre, un peu médicalisés, pour vraiment des personnes sans abri qui sont tombé dans l'alcool ou qui ont des problèmes de santé, de démence, etc. Ici le dossier ukrainien c'est différent donc par exemple ici on va viser surement des logements modulaires de 2 chambres, et c'est 75 000€ le module, donc c'est le prix qu'on a pu avoir par SAAMO, et donc voilà on va continuer les négociations avec eux pour pouvoir en acheter dans le cadre de cette crise.

Est-ce que vous êtes au courant de ce qui a poussé à faire l'appel à projet en 2018, pour subsidier ce type de logement spécifiquement?

Je ne sais pas. Le je peux pas te dire j'étais pas encore là, et j'ai pas trop suivi, je sais que le cabinet marron aussi suis tout ça. Ta déjà eu un contact là-bas? Alors tu peux contacter Bénédicte Hendrix je vais mettre son mail directement dans le chat ici. C'est avec elle que j'ai eu la première réunion sur le logement modulaire avant la guerre, dont je viens de te parler, la semaine avant le début de la guerre, c'est avec elle qu'on avait eu une réunion, du coup tu peux la contacter, tu peux lui dire que tu viens de ma part. Ben voilà c'est ça donc je sais pas te dire grand-chose d'autre que ça tu vois, je trouve que c'est une super idée les logements modulaires, moi ce que j'ai pu voir aussi c'était des rénovations de containers, j'ai vécu un peu à Amsterdam et j'ai vu des villages de containers empilés avec des Kots étudiants, je trouve c'est vraiment génial en tant qu'urbaniste. Là-bas ils réutilisent à mort les containers, ils créent des bars en containers, c'est économie circulaire à fond, c'est vraiment super quoi. Ça s'est pas encore beaucoup fait à Bruxelles, mais c'est vraiment des pratiques à apporter quoi, c'est super c'est la réalisation, c'est mobile, c'est bien.

Est-ce que vous pensez que ça a aussi un potentiel, vous, en tant qu'urbaniste, pour les sites qui sont temporairement vides, que ça peut revitaliser un peu le quartier par exemple ?

Oui complètement oui, tout à fait. C'est une solution temporaire mais qui dénote de pas mal d'avantages, c'est un moyen d'activation, c'est super quoi vraiment. J'espère que cette matière à l'avenir va être de plus en plus développée quoi, c'est vraiment bien, ca donne de la souplesse. En plus maintenant j'ai vu les projets de SAAMO, c'est pas betement des containers portuaires réaménagés, c'est vraiment des super pavillons, c'est vraiment super quoi, c'est même beau en fait.

Est-ce que vous pensez que c'est toujours abordable en prix ou que peut être c'est trop de d'investissement ?

Ecoute là on en est à 75 000€ par container c'est cher c'est un prix c'est sur, faut pas que ça monte plus quoi. Ah oui un autre truc qu'il fallait que je te dise c'est que, quand on a établi la stratégie pour accueillir les Ukrainiens, on avait identifié cette filière de développement, donc il y a pleins de filières hein. Je ramène toujours tout aux Ukrainiens parce que c'est vraiment le truc, c'est mon dossier quoi, mais on a identifié des vides à aménager en logements temporaires, on a identifié des hébergements chez des particuliers qui offrent des chambres ou des logements vides, et on a identifié donc le développement de modules sur les friches. Sauf que dans la note au gouvernement qui est passé et qui a été approuvé, on disait déjà que tout ça est malheureusement menacé par l'augmentation du prix du bois, le prix du carburant, donc là pour le moment, 75 000€ c'est un premier prix et donc on a dit voilà on a envie de développer ça mais moyennant un petit avertissement par rapport à la crise qu'on est en train de traverser, et le fait que que le prix des matériaux est en train d'exploser actuellement. Donc c'est une solution pour le moment mais est-ce que ça va en rester une à l'avenir, tout ça est très tributaire de toute l'inflation à l'œuvre aujourd'hui, de la dérégulation totale du prix du carburant, bon même avant la guerre ça commençait. Moi j'ai déménagé il y a 3 mois, donc avant la guerre, et maintenant je suis allé chez Ikea pour acheter une commode et il y a presque plus rien. Ils étaient en grosse rupture de stock quoi. Donc tout ce qui est en bois pour le moment c'est un gros problème. Gros problèmes d'approvisionnement, explosion des prix donc c'est compliqué quoi. Mais bon est-ce que ça aura un impact sur le futur du modulaire je suppose, la crise combien de temps elle va durer on ne sait pas dire, mais voilà le problème d'approvisionnement en tout cas tu peux le noter aussi parce que ça c'est un truc qu'on voit.

Parce que du coup il y avait quelques challenges avec ces logements modulaires ; c'était le prix, l'investissement en temps aussi pour les associations, et alors il y en a certains qui voyait aussi en fait le nombre de friches à l'avenir qui serait moins important vu qu'on va construire de plus en plus, et donc bientôt peut être qu'il y aura plus autant de friches que ça

Ca c'est vrai c'est une bonne observation en effet, mais y'en aura quand même encore toujours quoi. C'est de plus en plus compliqué de construire sur des friches on est bloqué politiquement avec des partenaires qui veulent préserver les friches qui sont pourtant des zones urbanisables dans les plans. Et c'est de plus en plus compliqué de construire dans cette région quoi, donc voilà, des friches y'en aura toujours, mais pas forcément pour placer des modulaires, parce qu'il y a des partenaires qui block l'urbanisation, ne verait pas d'un bon œil qu'on mettent des modulaires non plus quoi. Parce qu'en gros l'argument de préservation des friches c'est le développement de la biodiversité, c'est important mais quand ça se fait au détriment de logement social ou de placement de modulaires pour les raisons qu'on vient d'expliquer, ta un peu le combat entre les écologistes un peu extrémistes ou intégristes, et d'autres qui essaient de construire plus de logements pour que le marché du logement n'explose pas, et pour que les familles qui sont sur la liste d'attente pour du logement social puissent accéder à un bien descend, pas trop cher. Ça c'est très politique aussi.

Peut-être que ça va faire aussi que ça va donner un coup de boost à ce type de logement

Exactement quoi oui, ici nous on a réussi à acheter des modulaires, quand je dis nous c'est la région bruxelloise, la force publique, qui devient propriétaire de modulaires. Donc une fois que la crise Ukrainienne est terminé, on a ces modules, c'est à nous, et ils peuvent être déployés pour x ou y raisons, pour créer des besoins, s'ils appartiennent à la

SLRP, il y a 100 modulaires pour elle, mais imagine le potentiel que ça représente. Si il y a un problème et qu'il faut rénover une tour de logements sociaux parce que le toit s'est effronté, il faut faire évacuer tous les habitants pendant 2 mois / 3 mois, et bien on a ces modules à déployer en bas de l'immeuble, pour loger les familles de manière temporaire, pendant les rénovations donc c'est vraiment une super opportunité en fait pour nous. Et donc ça crée des émules, en effet on s'engage dans une autre optique, une autre manière de travailler grâce à ces logements modulaires, donc nous on y croit vraiment.

Suite aux inondations il voulait implémenter ça en Wallonie mais ça a finalement pas très bien marché

En effet, oui, j'ai vite fait entendu, oui, je sais pas trop pourquoi d'ailleurs ça n'a pas marché.

Mais il y a aussi le problème des modulaires ça va être tous les gens qui vivent autours quoi, enfin c'est toujours un problème, c'est sur qu'il va y avoir des boucliers, des associations de quartier, qui vont pas vouloir qu'on mettre des modulaires là-bas, en trouvant 1001 arguments mais au final ce sera juste de l'effet NIMBY quoi. Donc ça c'est d'autres difficultés évidemment auxquels il faudra faire face, ça c'est certain. Parce que tout le monde n'a pas envie de voir un village de 50 modulaires chez soi avec des réfugiés ukrainiens, ils vont trouver x ou y arguments mais voilà dans le fond, ça sera un espèce d'effet NIMBY quoi littéralement.

Quels sont les plus gros challenges auxquels vous allez devoir faire face ?

Alors y'a tout ce qui est l'aspect technique aussi, parce que tous les terrains, c'est pour ça qu'on va aller visiter, on peut pas installer du modulaire partout, il faut qu'on puisse les connecter aux égouts, il faut que on puisse tirer tout ce qui concerne Sibelga, pour l'électricité, l'énergie. Donc ça c'est vraiment des questions techniques, on pourra avoir les réponses uniquement en visitant les terrains. C'est pour ça qu'on y va d'ailleurs avec sibelga, vivaquoi et le SIAMU, donc SIAMU c'est tout ce qui est pompiers, évacuation,… Donc ça c'est vraiment des contraintes techniques, un terrain n'est pas l'autre. Y'a aussi au niveau de challenge technique, ce qui concerne la pollution des sols. Pareil ça doit être comptabilisé, ça doit être pris en compte aussi, parce que les friches elles sont en attente de travaux et en général la phase de dépollution, au début de la phase de travaux d'urbanisation d'un site, donc si ta un terrain qui est en friche depuis 30 ans, et qui doit être dépollué, y'a pollution de métaux lourds, le long du canal dans les anciennes zones industrielles. Alors on peut pas placer des modules sans avoir fait la dépollution, ce qui du coup augmente les frais d'installations, voir empêche totalement l'opération, donc ça c'est aussi un challenge. Et les caractéristiques du terrain quoi, quelle topographie du terrain, est ce qu'il faut faire du terrassement, faut-il couler une chape en béton, enfin ça c'est vraiment tout ce qui concerne l'aspect technique du terrain qui augmente pas les coûts de développement de modulaires. Et donc tout ça doit être pris en compte, et c'est pour ça qu'on va faire la visite de terrain, pour sortir avec des réponses et se dire, voilà, sur ce terrain-là c'est possible moyennant x milliers d'euros pour tirer les canalisations, pour bétonner, faire une chape, etc. Donc tout ça rentre en jeu aussi ça c'est des challenges auxquels je pense, plus techniques. Et niveau politique c'est en effet l'effet NIMBY, c'est voilà acceptation par le quartier de devoir développer ce type de logement, même quand il y a des modules pour des écoles, c'est compliqué quoi, donc je connais quelques endroits ou il y a eu des classes dans des containers ou il y a eu des pétitions du quartiers parce qu'ils voulaient pas devoir installer des containers pour des écoles. Donc imagine que si même pour les écoles ça réagit comme ça imagine pour des réfugiés quoi.

Est-ce que vous allez plutôt faire des modules comme infirmiers de rue donc qui sont plus amenés sur le site en une pièce ou plutôt comme SAAMO, qui sont démontables ?

Ca je sais pas vraiment te dire encore.