

STUDENT LIVING IN 2040

A vision for student housing corporation
DUWO to stimulate social well-being

Graduation Report - Hannah Keulen





“Hoe verleidelijk het ook is om naar het verleden te kijken, we zullen een toekomst moeten verbeelden waarnaar we kunnen verlangen”

- Floris Alkemade, Rijksbouwmeester

Graduation MSc. Thesis Strategic Product Design

Author

Hannah Keulen

Faculty of Industrial Design Engineering
TU Delft

Graduation committee

Chair | Dr. Ir. Mooij, Sylvia. C.
Faculty of Industrial Design Engineering
Design Organisation and Strategy department

Mentor | Ir. Heur, Ruud .J.H.G van
Faculty of Industrial Design Engineering
Human-centered Design department

Company Mentor

Hans Pluim
DUWO Director Location Delft



PREFACE

Dear reader,

The thesis that lies in front of you is the final deliverable of my graduation project for the Master of Strategic Product Design at the faculty of Industrial Design Engineering at the Delft University of Technology. The project is carried out in collaboration with student housing corporation DUWO, which allowed me to combine a social design project with a pragmatic business point of view. Being able to design for society on an abstract level, envisioning how we want the world to be, and at the same time connect these thoughts to the world of today by designing tangible outcomes.

As a child, I was already triggered by what is fair, regardless of what happens to be reality. Brought up with the idea that you shouldn't take things for granted, always consider why people say the things they say or act the way they do and then formulate your own opinion. This upbringing resolved in a strong sense of justice. And although I am still learning how to carefully pick my battles for when to speak up and especially when not, I am grateful for this trait because it brought me to study Industrial Design. I realized in time that design today is more than producing new products. Industrial Design allows me to have this critical eye, supports me in envisioning an ideal world and provides room to carve my own path to do what I believe to be fair.

The real challenge during this project was to not lose myself by solely responding to the practicalities of today. To not let the pragmatic side overshadow the strategic aspects of the project. In this regard, I want to thank my TU supervisors. Sylvia helped me structure my thoughts and kept on reminding me about the values of strategy design. Herewith, challenging me to think about the future scenario. Besides, at crucial moments she devoted her time to me and encouraged me to believe in myself. Ruud always motivated me to think one step further and, by doing so, triggered me to (again) see the project relative to its context. Furthermore, he was never afraid to share some lifelong personal working experiences, which helped me reflect and think about what I want to do after this project. As this project is the final stage before entering working life.

Furthermore, I want to thank Hans, my supervisor from DUWO, for granting me this opportunity, connecting me with all employees within DUWO and providing me with such rich information about anything I wished to know about DUWO. Without the richness of the information, I could have never gained all the insights presented in this thesis. Next, I want to mention that I highly appreciate him for staying critical till the end, providing me with much valuable feedback to improve the outcome.

Hannah Keulen



EXECUTIVE SUMMARY

DUWO is the largest student housing corporation in the Netherlands, a corporation that strives to contribute to the best time of a student's life by offering suitable and affordable housing for both national- and international students. DUWO manages to build real estate that is used for 50 years or more by creating unique and prestigious student buildings such as the Krakeelhof in Delft, housing over 500 students. To continue developing similarly successful projects, the corporation needs to stay ahead of its time, act innovative and always meet governmental regulations on housing, safety and sustainability. It is a challenge to balance all the different interests of the corporation, government and the students. An opportunity here is to explore the wishes and expectations of student housing in the future to keep on building new innovative/successful student buildings that contribute to the student's well-being. This opportunity resulted in the following research question of this project:

How can DUWO contribute to the better well-being of all students, now and in the future?

Plus these two linked sub-questions:

- *What are the (upcoming) trends in student housing?*
- *How does community building affect the student's social well-being?*

Discovered insights

Literature research concludes that quality of life, life satisfaction and happiness are all different terms describing well-being, which one can use interchangeably. Findings on happiness research subsequently show that the human biopsychological pathway, which balances positive/negative feelings, predominantly determines our overall feeling of happiness. As human interaction heavily affects our positive feelings, one can see that valuable relationships make people happy. Further research on relationships shows that good relationships also make us healthier as our brain declines later and that, oppositely, having bad relationships can be toxic. To stimulate the formation of these valuable relationships, one should start to facilitate social contact.

Interviews with employees from DUWO show the increasing interest of DUWO in the well-being topic, which results in multiple practical ideas. Nonetheless, the main focus of the corporation still lies in affordability and availability. This focus and the stimulus of the Dutch rent allowance/valuation system results in the corporation mostly building studios. This result affects the way students build these valuable relationships. Zooming out on the situation, looking at the context from an abstract level, it also seems that there is a gap between the corporation's intentions and the expectations of the students. DUWO focuses on the future and the collective, whereas students ask themselves what it implies for their individual situation in the present. As both perspectives are fair, it complicates the communication between DUWO and the students. For the corporation, it is not fully clear what the students want/expect/need. However, this unclearness also has to do with the students their lack of involvement. Students mention they want to think along as long as the matter at hand relates to their situation. But it feels unclear to them how to get input across. Besides, they wonder if DUWO will do something with their advice.

The reframed challenge:

Find out how DUWO can support social relations between students living in the same building and get a better understanding of students' needs, to be able to design for those needs and support well-being.

To stimulate the formation of valuable relationships, one should promote community building. People within the community dare to be interpersonally vulnerable, which creates emotional safety and intimacy. To be part of a community also provides a feeling of belonging. The best way to stimulate community building is to facilitate contact and to create a feeling of involvement.

Design requirements

- DUWO has to get a better understanding of the students their needs
- Students need to know beforehand how they can give input and how DUWO will use their input
- Students should be able to respond to specific topics which they care about (and influence their situation)
- Student housing should stimulate social contact and create a feeling of involvement

The final design outcomes

1. Internal policy change. Embrace well-being internally. Make it the basis to inform the policy. Ensure that affordability and availability no longer determine the future of student living.
2. Enrich the communication between DUWO and the student. Involve student participation via statements inside the DUWO app. Gauge what students think and see how many students are concerned about which subject. Link these polls to offline discussion evenings where students can share their input elaborately
3. Architectural advice. Ensure the building itself promotes social contact, plus create a feeling of belonging through designing for hierarchy.

READING GUIDE

Chapter introduction

Each chapter starts with a full blue colored page. These pages portray the title of the chapter and provide a short introduction about the content that will be discussed. Chapter 5 marks the end of the first diamond and chapter 6 the beginning of the second diamond.

Titles used

The following pieces of text indicate when what font style is used.

PARAGRAPH TITLES

Sub paragraph titles

Quotes

Highlighted text

Subheadings to summarize text

Body text

Figure notation

Student housing corporation DUWO

The corporation offers affordable student housing throughout the Netherlands. Their motto is to contribute to the best time of a student's life. See chapter 3.1 for more info.

The Krakeelhof

This project makes use of one student building in Delft, the Krakeelhof, to illustrate the future vision. See chapter 1.1.2. for more information about this building.

Photos

Unless indicated otherwise, all photos used in this project are personally captured.

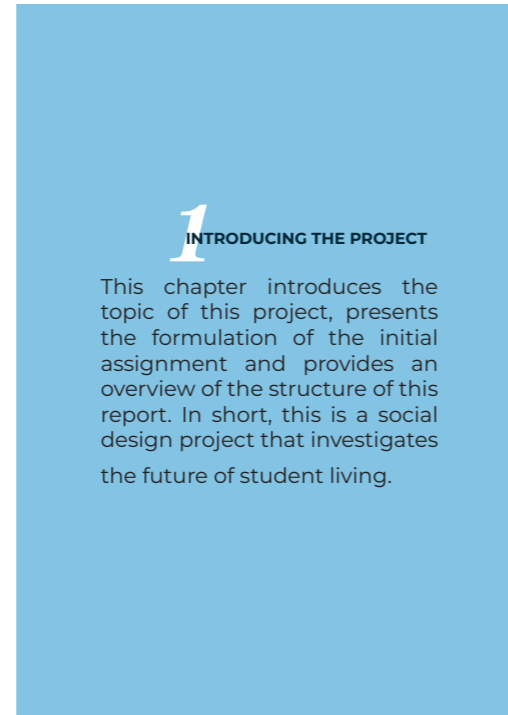


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1 INTRODUCING THE PROJECT

This chapter introduces the topic of this project, presents the formulation of the initial assignment and provides an overview of the structure of this report. In short, this is a social design project that investigates the future of student living. The research goal is to provide answers for student housing corporation DUWO on how students want to live in 2040 and what they expect from the corporation.

As the global population keeps on growing, the housing shortage keeps on increasing (Ministerie van Binnenlandse Zaken en Koninkrijksrelatie, 2020). In every housing sector there is a shortage and space is limited, therefore innovative ideas are necessary to provide the best possible solutions for people's current- and future needs and to remain sustainable. This includes the student housing sector. ***But what are the future needs of students? How do students want to live in the future? And How can a student housing corporation contribute to a better overall social well-being for all its tenants?*** This project provides insights into all the aforementioned questions. Because if Covid-19 has taught us one thing, it is that social interaction and our overall well-being do matter. We have to take care of our social and mental state in order to live a happy and healthy life.

1.1 THE INITIAL ASSIGNMENT

This paragraph describes the initial assignment as how it was formulated at the start of this project. It shows the intention, the starting objective of the project. Along the way the project scoped into one specific direction and therefore slightly shifted course. The reformulated problem definition can be found in chapter five.

1.1.1 The initial assignment

DUWO their motto is to contribute to the best time of a student's life. They managed to build unique and prestigious real-estate buildings in the past, such as the Krakeelhof in Delft, housing over 500 students. Some of these buildings are still being used to this day, after 50 years. To continue developing similar successful projects and to live up to their motto, the corporation needs to stay ahead of its time. They need to act innovative, as well as continuously comply with governmental regulations on housing, safety and sustainability.

It is a challenge to balance all the three different interests of the students, the corporation (DUWO) and the government. An opportunity here is to explore all the different needs, wishes and expectations of student housing and student-living in the future to keep on building new innovative and successful student buildings that contribute to the student's mental well-being.

The goal: A future vision on student housing and a visualisation of a concept scenario for the future of one specific building in Delft; the Krakeelhof (Chapter 2.1.3 provides a detailed overview of this specific building in Delft).

The formulated research questions at the start of this project:

- **Research question:** *What are the (upcoming) trends in student housing, and how do they affect students' social well-being?*
- **Sub-question:** *How does the formation of communities affect the student's mental well-being?*

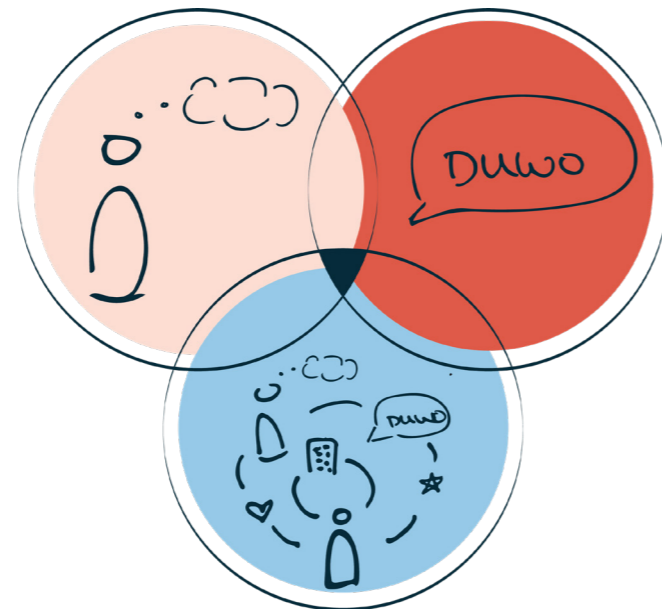


Figure 1: Visualization of the three perspectives investigated in this project

These two research questions are to provide insights into the future context of student housing and to inform the future vision for DUWO.

To illustrate the future vision, the Krakeelhof (the brief information on this building can be found in 1.1.2) in Delft will function as an example. Answering questions like: how is this vision being translated into a specific building? What aspects need to be in place to make it a unique and innovative complex that students will use for over 50 years?

The research on the (upcoming) trends in student housing will define the driving forces of the vision. To find out how DUWO can contribute to a better overall feeling of well-being, the effects of the students' living situation and the formation of communities on students' mental well-being will be explored. Herewith supporting their goal to contribute to the best time of a student's life.

THE KRAKEELHOF

1.1.2 information about the building

- Located at the Jacoba van Beierenlaan in Delft and therefore nowadays often referred to as 'the JvB'.
- Complex housing 569 students in total
- Design by Hendrik Postel, 1963
- Each unit houses 16 to 18 students and has a T-shape. There are small groups of 4, 6 or 8 student rooms in each of the T's legs, situated along a short central corridor. The kitchen, living room and bathroom are located in the middle (the heart) of the unit.
- One block consists of four storeys, stacking 4 T-shape units. The blocks together enclose a communal courtyard.

- The staircases are placed on the outside of the building to minimize noise pollution inside. Furthermore, they mark the semi-private units and (as intended) make a major contribution to the communal character of the complex.
- The architect on purpose isolated the complex from the surrounding residential neighbourhoods by a canal and one single entrance, to avoid conflict.
- The initial plans for the courtyard were to create a sports field and a tennis court, but the courtyard is now mostly used as a car park, a place to stall bikes and (specifically in summer) to set up the inflatable pools. Also the canteen, shop, workshop, store rooms and two staff residences situated in the slightly lower building on the North side are gone. DUWO now rents the space to an external party. Yet:

'The architecturally determined cohesion remains quite palpable even today!'
- (Mooij, 2014).

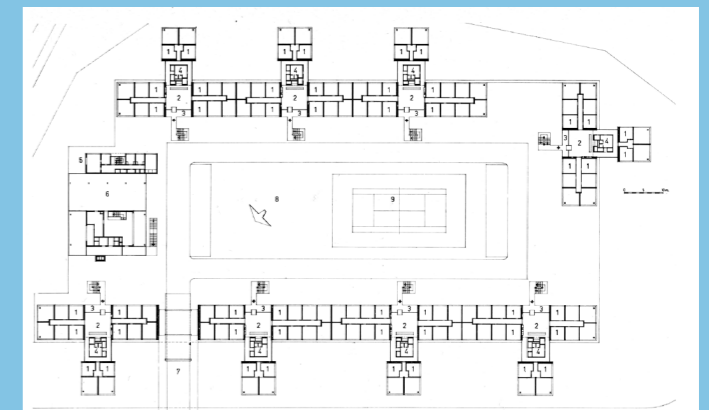
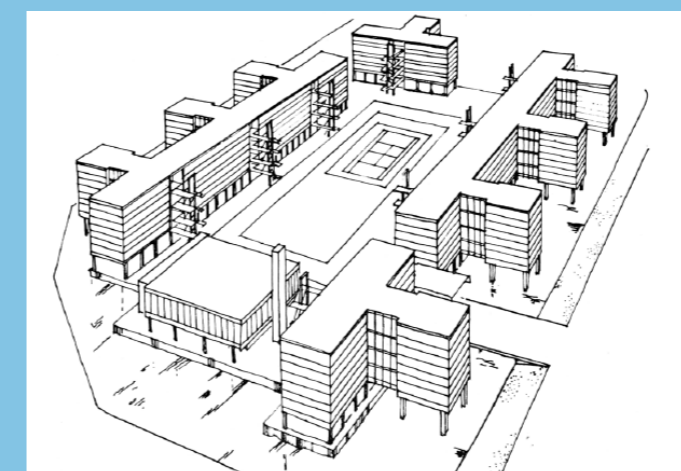
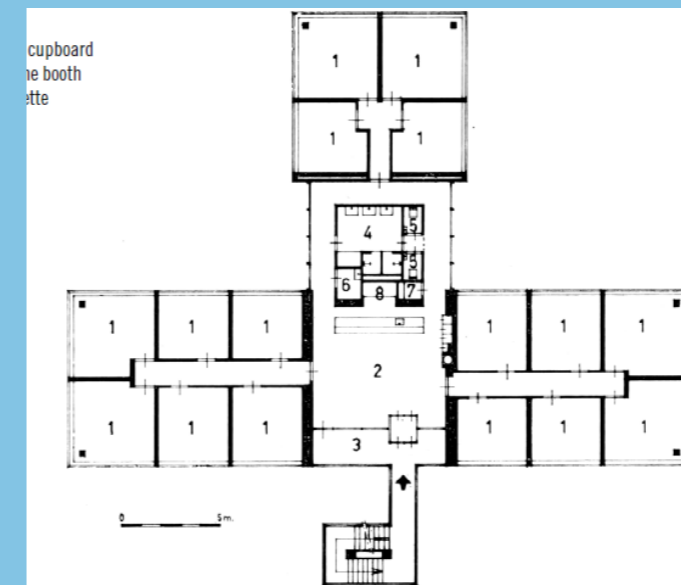


Figure 2: Krakeelhof images as presented in the paper 'Finding Form for a Free Spirit' (Mooij, 2014)

1.2 PROJECT APPROACH

This paragraph explains the structure and process used for the project. The Double Diamond Model (British Design Council, 2019) is used to structure the design process as the method provides structure and guidance without taking away the designer's freedom to make it something of their own. It visualizes a simplified yet realistic overview of the complex and iterative design approach of continuously diverging and converging. Of reflecting and developing. Of exploring and focussing.

The Double Diamond Model is also used to structure this report and communicate all findings clearly. Growing from the starting challenge into the four phases of 1. discovering 2. defining 3. developing 4. delivering, to the final outcome. See figure 3.

Because of the COVID-19 pandemic, the project was mostly carried out from home. Luckily it was possible from the start to also work from the DUWO office. Nonetheless, a greater part of the meetings and interviews with students, people working for DUWO, and other experts were held online and remotely. Through Microsoft Teams or Zoom and with the help of Mural to make the meetings more interactive and facilitate creativity.

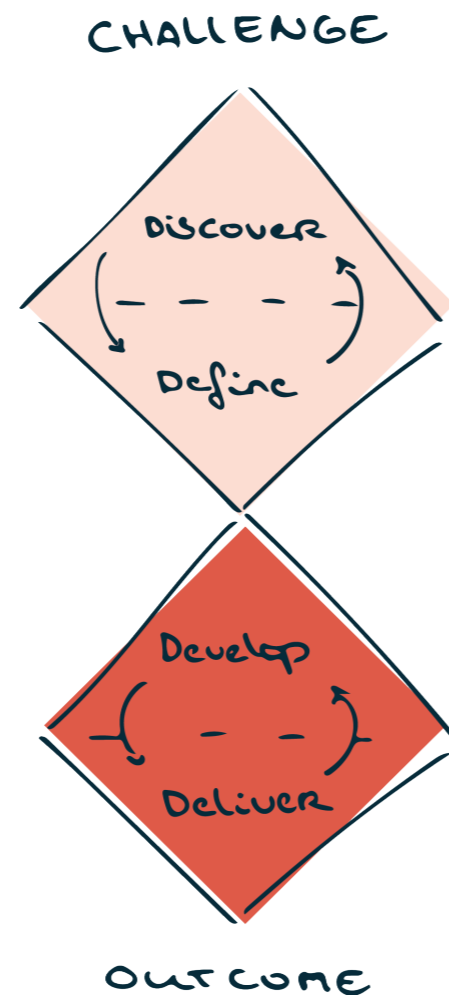


Figure 3: Visualization of the Double Diamond Model

1.2.1 Process and report structure

This section zooms in on the design process. Figure 4 shows how the conducted project tasks relate to which phase of the Double Diamond Model. It gives an overview of how the activities contribute to the final future vision.

Diamond one focuses on finding the right problem, the research phase. Diamond one is where the emphasis of this project lies. Diving into the challenge presented and finding the question behind the question. Diamond one maps and explains the whole context in which the project takes place. It describes what well-being is and how one can achieve it. It also unravels the exact challenge this project wants to tackle. Therefore the first diamond ends with the redefined challenge presented in chapter five.

Diamond two focuses on solving the right problem, the design phase. In this case, the design is a future vision for housing corporation DUWO. Building from the redefined challenge in the previous diamond, the focus here lies on formulating the future vision and providing a strategy to build towards this future vision. To make it tangible, the vision and the attached strategy advise how things should play out specifically for the Krakeelhof in Delft.

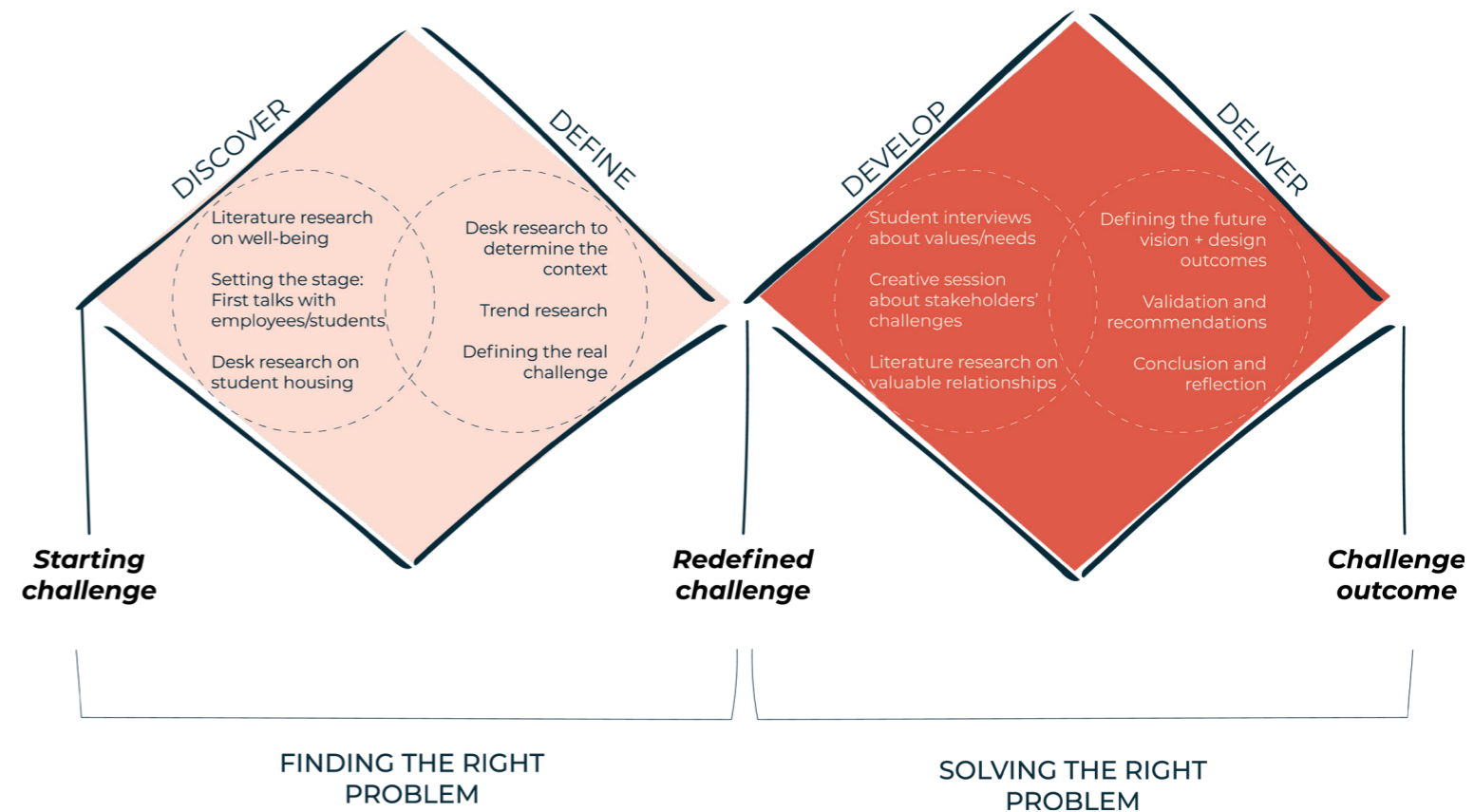


Figure 4: Visualization of the project process



2 SETTING THE STAGE

This chapter describes the first insights, directly found at the start of the project, through the first conversations with employees working at DUWO. It portrays DUWO's initial relation to well-being, to show the starting point and to see how this project might be relevant to them. Next to that, this chapter presents the current numbers of the student population in the Netherlands and the expected growth until 2024, to get an idea of the size of the target group. It also shows the prognoses. In other words this chapter briefly addresses the status quo. Chapter three will explain the whole context of this project more in-depth.

2.1 INTEREST IN WELL-BEING AT THE DUWO OFFICE

From the interviews hosted with twenty-three different employees working for DUWO, one can immediately tell there is an increasing interest in the well-being topic. When simply addressing the topic ‘the future of student living’, people tend to start talking about well-being themselves. However, it isn’t clear for them how to tackle this topic. What is especially DUWO’s influence in this area and how to properly incorporate designing for well-being in their current ways of working? At the moment, the topic isn’t really integrated into the operation itself.

“Future oriented tasks about well-being, livability and community building get second place. They don’t get much attention.” - Social caretaker DUWO (1)

But as DUWO sees the (increasing) importance of integrating designing for well-being into their operations, new initiatives arise. For example, DUWO is specifically looking into how to design the common rooms for students, so they start using them more often and thereby improve the community feeling they experience. Another example is that DUWO conducts research on the current value students assign to their home and what aspects they like to see differently via the means of a (mostly quantitative) survey. In this survey, ‘social contact with residents’ is one out of ten elements. The other nine elements highlight more the practical aspects of a home such as ‘the condition of the house’ and ‘hygiene’. Further on in this report, in chapter 7.1 on empirical research, all the ten elements are described.

Also the input of the students becomes more important. The use of residential assistants (students living in the buildings who welcome and inform new students), student caretakers (‘student beheerders’ who take care of small maintenance issues and mediate between first neighbour disagreements) and residents’ committees (who represent the other tenants) is growing and highly appreciated by DUWO. These students provide insights into the wishes and needs of the students living in their building.

“Student caretakers are the eyes and ears of DUWO. As a student caretaker you report repairs, fix small technical issues, check cleaning service and mediate between residents. Student caretakers get financial compensation.” - Social caretaker DUWO (2)

In conclusion the interest in the student’s well-being is growing (this interest already grew before the start of the Covid-19 pandemic) and DUWO realizes it can play a positive role in the battle against loneliness, anxiety and depression. Yet the corporation is still searching how to tackle this effectively and within the boundaries of their abilities. Therefore, at this point, a clear vision and strategy is missing.

Figure 5 provides a schematic overview of the current and proposed situation.

To create a clear vision that will lead to more transformative solutions on a policy level, DUWO has to dive deeper into the theory of well-being. Look at it from a sociological point of view, without rushing to quick pragmatic and practical solutions. What do students need in terms of living? What developments do you go through at this age? What usually causes anxiety? How can we properly examine how our tenants are currently feeling? etc. This goes beyond solving the practical issues.



Figure 5: DUWO's current versus proposed approach towards well-being

2.2 STUDENT NUMBERS

Figure 6 shows the student numbers in the Netherlands of the academic year 2019-2020 (Kences et al., 2020). These numbers do not take into account the students that are only in the Netherlands for a short period of time (the exchange students). Insights into these numbers are shown to get an idea of the size of the target group.

	UNIVERSITY OF APPLIED SCIENCES	UNIVERSITY	TOTAL
# STUDENTS	411.000	300.000	711.000
% INTERNATIONALS	7%	21%	13%
% MEN	49%	47%	48%
% WOMEN	51%	53%	52%
AVERAGE AGE	21 + 10 months	22 + 6 months	22 + 2 months

Figure 6: Student numbers of '19-'20 monitor Kences (2020)

In the past eight years the student population in the Netherlands has increased by 19% and it is expected to grow until 2023. From 2024 onwards the student population will most likely decrease as there will be way less students attending the university of applied sciences. The amount of university students will still slightly grow, mainly because of the increase of international students, but

they won’t compensate for the decrease in numbers of the university of applied sciences students (Kences et al., 2020). Because of this trend, one can see university cities continuing to grow. The cities Delft and Wageningen are expected to grow the most with an increase of 17% (Kences et al., 2020). But, as the growth is based on the increase of international students, it is hard to say how steep this increase will be. How will factors such as the Covid-19 pandemic or Brexit influence the situation?








2.3 STUDENT HOUSING IN THE NETHERLANDS

This section provides an overview of the student housing offer in the Netherlands. It shows the total number of student rooms in the Netherlands, how students live and what they pay for their room. Although the rest of the project mostly focuses on Delft and specifically one building, the Krakeelhof, it is good to see how this project challenge (as defined in chapter 1.1 on the initial assignment) relates to the rest of the Netherlands.

2.3.1 Numbers on student housing in the Netherlands

Of all the students studying in the Netherlands, 48% live with their parents (Kences et al., 2020). The other 52% live in a student house with shared or private services. Figure 7 provides a more detailed overview of how this last category lives. Disclaimer: due to rounding, the housing share adds up to 101%.

One can see, the majority of the students (55%) live in a room where they share facilities with other students. However when looking into the offer of the social housing corporations, they offer mostly one-room apartments (63%). This is most likely due to the perverse incentive of the rent allowance and the housing valuation system. According to Heleen de Vreese (2020), chairwoman of Kences, in an online webinar on student housing (Kences, 2020) the extra costs to build private housing instead of shared housing don't weigh up to the extra income gained for this type of housing. As the student receives the rent allowance from the government, the housing corporation can ask for a higher rent and still provide affordable housing. Furthermore the housing valuation system is extremely disadvantageous for shared housing, which also stimulates housing corporations to build private rooms.

	Kamers met gedeelde voorzieningen	Eenkamer woning	Meerkamer woning	
 Aandeel in de voorraad *	55%	20%	26%*	Samenstelling
 Aandeel verhuur door corporaties	38%	63%	34%	
 Oppervlakte	17 m ²	23 m ²	68 m ²	
 Woonlasten	€ 410	€ 470	€ 650	Betaalbaarheid
 Inkomen	€ 1.050	€ 990	€ 1.180	
 Woonquote	39%	48%	55%	
 Woonlasten per m ²	€ 27	€ 23	€ 12	

* Door afronding telt het aandeel in de voorraad op tot 101%

Figure 7: Overview of types of student houses and their prices as presented in monitor by Kences (2020)

“The housing valuation system is unfavourable for shared housing. Because the property is shared, it directly scores less points and therefore the rent a corporation is allowed to ask decreases.” - DUWO employee, manager development

Considering the affordability of the room, one first needs to look at all the housing costs (in Dutch ‘woonlasten’). So apart from the rent, this also includes service costs, energy costs, insurances etc. To get an idea of how heavy these costs way on the students’ overall expendable budget, one calculates the housing rate (in Dutch ‘woonquote’) by relating the overall expendable budget to the housing costs. The expendable budget (in Dutch ‘besteedbaar inkomen’) is based on the definition of CBS and by Kences adjusted to students. It is defined as the sum of a student’s scholarship, health care allowance, parental contribution, labor income and loans and minus the taxes, health insurance and study costs. The rent allowance is completely taken out of the equation (Kences et al., 2020). So only the remaining costs, after receiving the rent allowance, are taken into account. Here one can see the housing rate is most favorable

for the room with shared facilities. On average students who moved out and don’t live with their parents anymore, have an expendable budget of 1065 euro. The expendable budget structurally increases with age, so Master students tend to have a larger budget compared to Bachelor students.

Figure 8 gives a clear idea on how the whole student population in the Netherlands lives and divides itself among the available rooms. It shows the actual number of students per type of living situation. The table presents an overview of the current situation, it doesn’t show us the preferred situation.

	Living at home	Living away from home	Room with shared facilities	Studio	Multi-room house
# Students	340.800 (48%)	370.300 (52%)	200.600	75.100	94.500
# HBO	249.500 (61%)	161.200 (39%)	73.900	32.400	54.800
# University	91.400 (30%)	209.100 (70%)	126.700	42.700	39.700
Average age	20 + 10 months	23 + 4 months	22 + 7 months	23 + 8 months	24 + 10 months
% Inside university's city	13%	71%	80%	76%	46%
% Outside university's city	87%	29%			
% houses of corporations	-	42%	38%	63%	34%
Average m2	-	-	17 m2	23 m2	68 m2

Figure 8: Overview of how students live as presented in monitor by Kences (2020)

Most important insights of figure 8:

- Students living in a studio are on average older compared to students living in a room with shared facilities.
- The majority of university students (70%) live away from their home, whereas for university of applied sciences students it is the other way around. Here the majority (61%) lives at their parents' home.
- The majority of the 'living-away-from-home-group' lives inside the university's city (71%). This somewhat confirms the belief that students want to live inside the city and especially the university's cities are expanding.
- On average, a student in a studio gets more square meters to live in, compared to a student living in a room with shared housing.

To summarize, the presented numbers provide insight into the context of student housing. It shows the current deviation of types of student houses in the Netherlands and their attached costs. Shared housing is still the most affordable option in terms of overall costs and cost related to income. But this is also the housing situation where students get the fewest square meters to live in and where they have to share facilities like a kitchen and a bathroom. Besides this, as housing corporations tend to mostly build new studio complexes (due to the trigger of the rent allowance as mentioned before), an even bigger share of their properties becomes private housing. And as social housing corporations strive for affordable living, it is most likely that this form of living will be the most affordable option in the near future. That is why already a large group of the student population mentions wanting to live in a studio. The reasoning: "more value for your money".

3 UNDERSTANDING THE CONTEXT

The previous chapter briefly described the starting point of the project, this chapter dives deeper and unravels the context in which the whole project takes place. It explains how DUWO operates (3.1) and how well-being is defined (3.2) to find answers to how the corporation can facilitate it. The chapter ends by describing the effects of Covid-19 on both the students' wellbeing, as well as the effect on the student housing sector.

3.1 STUDENT HOUSING CORPORATION DUWO

This paragraph gives an idea of the corporation's size, their prognoses on student housing and how they operate in the whole ecosystem of student housing in Delft. All findings described in this paragraph come either from interviews with employees working for DUWO or desktop research. The desktop research mostly consisted of reading into DUWO's annual reports and Dutch governmental documentation on student housing policies.

3.1.1 DUWO's numbers

DUWO is the largest student housing corporation in the Netherlands. DUWO is active in Amsterdam, Leiden, The Hague, Delft and Deventer/Wageningen. As student population numbers increase (Ministerie van Onderwijs, Cultuur en Wetenschap, 2020), it is likely to say the corporation will only grow. As a housing corporation, it is DUWO's responsibility to build affordable new properties and maintain/manage the existing ones. To do so, one must ensure the business, including all its employees, runs smoothly. These are challenging tasks, especially in an overheated market segment. Areas to build new complexes are scarce. Renovation costs are high. And in the social housing sector, the renting prices need to remain affordable. The corporation strives to contribute to the best time of a student's life and make everybody feel at home in their university city, by offering

sustainable and affordable housing, which is available for all students (both national- and international).

The table below shows all the houses/rooms DUWO owns, manages or shares. These numbers show that roughly 55% of DUWO's houses are private houses, and 45% are shared. The Accommodate houses/rooms are solely rented to international students. Accommodate covers around 25% of all the rooms.

As buildings usually last for around 50 years, according to the employees working at DUWO, the corporation is also facing another challenge: renovation. The interviews showed that the corporation's policy on maintenance used to be "sober but effective", implying the corporation tends to do the minimal effort to keep their properties livable. Herewith also keeping the housing affordable as the connected renovating costs remain relatively low. The effects of this policy in combination with new sustainability demands create a challenging task for DUWO. What to do with all these buildings in need of a makeover?

When looking into DUWO's approach to building new complexes, there is also a necessity to keep it as cheap as possible, so that the student rooms will be affordable.

Houses/rooms		Private	Shared	Total
Regular	Own	7.843	11.399	19.242
	Manage	4.937	670	5.607
	Share	175	235	410
Accommodate	Own	2.786	2.223	5.009
	Manage	1.685	774	2.459
	Share	871	0	871
Total		18.297	15.301	33.598

Figure 9: All houses/rooms available via DUWO - annual report of 2020

But we have a saying in Dutch, "goedkoop is duurkoop", which roughly translates to 'the cheaper the initial costs, the higher the eventual costs'. For example, the cheapest sewage system tends to break sooner and then needs repairing. Or the low-priced floor might need to be renewed in three years time, instead of eight, which is not that sustainable. However, as students usually don't have high standards, especially not at the start of their student career (as was mentioned by an employee on policy), one should also not spend too much on a fancy floor. It keeps being a tricky balance as construction costs become more expensive and you want a house to be durable, yet DUWO has to maintain affordable renting prices. It is all about balancing affordability and sustainability.

"One must always find a balance between maintenance costs and purchase costs. The investment might be bigger right now, yet it will lower the maintenance costs in the future and vice versa." - Employee planned maintenance

3.1.2 DUWO's prognosis on the student housing shortage

Already in April 2020, there was a shortage of 1500 student rooms in Delft. This number is likely to increase in the upcoming years. To better understand the student housing shortage in the Netherlands, the two tables underneath show DUWO's prognosis on the expected student rooms needed in 2028. Because of Covid-19, national students decided to remain living at their parents' place.

	Student population growth 2020-2028		Growth # of students renting own accommodation	
	Trend	Covid Scenario	Trend	Covid Scenario
Delft	4.840	3.712	3.598	2.323
DUWO	16.660	12.440	15.839	8.410

	Potential expansion need 2028		Projects in development		Remaining potential expansion need 2028	
	Trend	Covid Scenario	DUWO	Third parties	Trend	Covid Scenario
Delft	5.567	4.292	136	1.500	3.391	2.656
DUWO	29.558	22.129	3.054	12.863	13.642	6.213

Figure 10: Student growth and housing prognosis by DUWO - annual report of 2020

Therefore, the required number of student houses in the university cities decreased. Because of this phenomenon, DUWO calculated two estimations; the trend- and the Covid scenario. In cities where the incoming international students predominantly define the student population growth (which is the case in Wageningen and Delft), the effect of Covid-19 is lower. See Figure 10 for the estimated numbers. As this project is about the Krakeelhof, a student building in Delft, these tables only show the numbers of Delft and the total numbers for DUWO. For the full tables, see appendix B.

The tables show that Delft as a minimum (the Covid scenario) needs an extra 2.656 student rooms to meet the demand. In other words: the prognosis shows that a lot of students won't find a place to live when searching for one in the future. See the previous chapter on student numbers, for more information on the expected student population growth.

3.1.3 The network in which DUWO operates

To get a complete understanding of the influence DUWO has on student housing in Delft, this chapter presents the ecosystem in which DUWO operates. When looking at the stakeholder map (see figure 11) it immediately becomes clear that many parties influence each other. These different parties together form the stakeholders linked to student housing in Delft.

As a social housing corporation, DUWO is required to build and manage affordable housing. The municipality, the corresponding tenant organisation (in Delft this organisation is called 'Wijwonen') and the housing corporation together form the so-called 'local triangle' and define the performance agreements. The performance agreements state the housing policy plans for the upcoming year. Think about agreements on new construction plans, sustainability goals, rent increases etc. DUWO needs to comply with these performance agreements and is therefore indirectly under control by the Dutch government. DUWO has the legal obligation to facilitate/support the tenant organisation. Furthermore, the housing corporation authority, in Dutch 'Autoriteit Woningcorporatie' (AW) checks if DUWO complies with the rules/legislation.

As there is a large student housing shortage in Delft, a separate task force was set up, together with the municipality of Delft and TUDelft. By working together closely, they want to tackle this challenge and see if they can create new student complexes on campus.

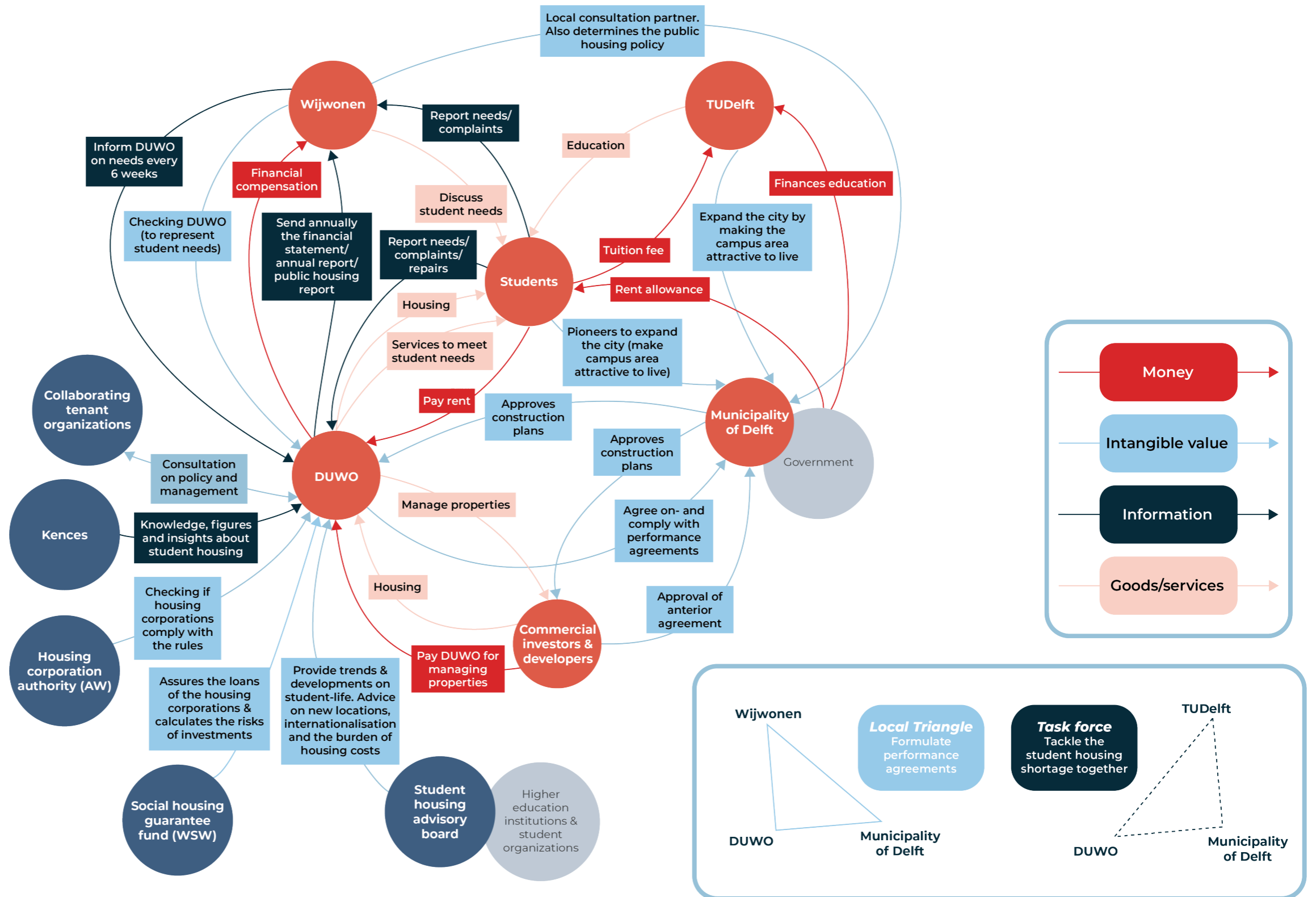


Figure 11: Stakeholder map

3.2 WELL-BEING

This chapter discusses all findings from literature research on human well-being.

The first paragraph (3.2.1) describes the theory on well-being by exploring the definition and explaining the happiness framework as defined by Veenhoven (2009). It shows how both quality of life, life satisfaction and happiness can all be seen as the same terms for well-being. Sub-chapter 3.2.2 addresses Maslow's pyramid (1943), as from the previous sub-chapter it became clear that feeling well is predominantly related to our human-nature psychological needs. To make it more tangible, Maslow's pyramid shows which specific needs/what level have to be addressed. Chapter 3.2.3 describes the research findings found by a study on adult development from Harvard, which also indicate that valuable relations make people happy. To conclude with the first insights on how a student housing corporation can contribute to the overall well-being of the students in chapter 3.2.4.

3.2.1 Well-being definition

This chapter provides a clear understanding of what we mean when discussing the topic well-being, by starting with a definition on well-being and afterwards diving into the theoretical framework as defined by Veenhoven (2009).

Ruggeri defined wellbeing as:

“The combination of feeling good and functioning well; the experience of positive emotions such as happiness and contentment as well as the development of one’s potential, having some control over one’s life, having a sense of purpose, and experiencing positive relationships.” - (Ruggeri et al., 2020)

This single sentence shows the layeredness of the term wellbeing. Yet summarizes it as a combination of feeling good (subjective experiences) and functioning well (objective results). This summary is in line with Veenhoven's theory on happiness. He states that both the biopsychological theory and the philosophical theory contribute to our overall satisfaction with life as a whole (Veenhoven, 2009). The biopsychological theory explains how our human nature defines our needs.

And how balancing our experiences inform us on how we feel hedonically. Whereas the philosophical theory points out how the culture we live in construes our standards of life and how cognitive comparisons (between those standards) define our overall contentment. Although both pathways contribute to our overall happiness, the biopsychological theory is considered the dominant one (See figure 12).

As can be seen from figure 8, Veenhoven argues that overall satisfaction with life-as-a-whole is what happiness is and is what we should strive for to live a good life. He argues that both the terms quality of life and wellbeing have been used instead of/as an indication of happiness. Veenhoven explains this claim by diving into the four qualities of life.

When looking into the meaning of quality of life, one can distinguish the potential of living a good life versus actually having a good life. It is the difference between chances, e.g., you get advice on eating healthy, and outcomes, e.g., how eating healthy lengthens your life (Veenhoven, 2000). Secondly, there is a difference between external and internal qualities, quality of the living conditions versus quality of being human. The distinction is clear in healthcare, where there is a difference between inner afflictions inside our bodies and diseases that arise from external pathogens. Mapping these two distinctions results in four categories of quality of life (Veenhoven, 1999). Figure 13 shows the four qualities of life.

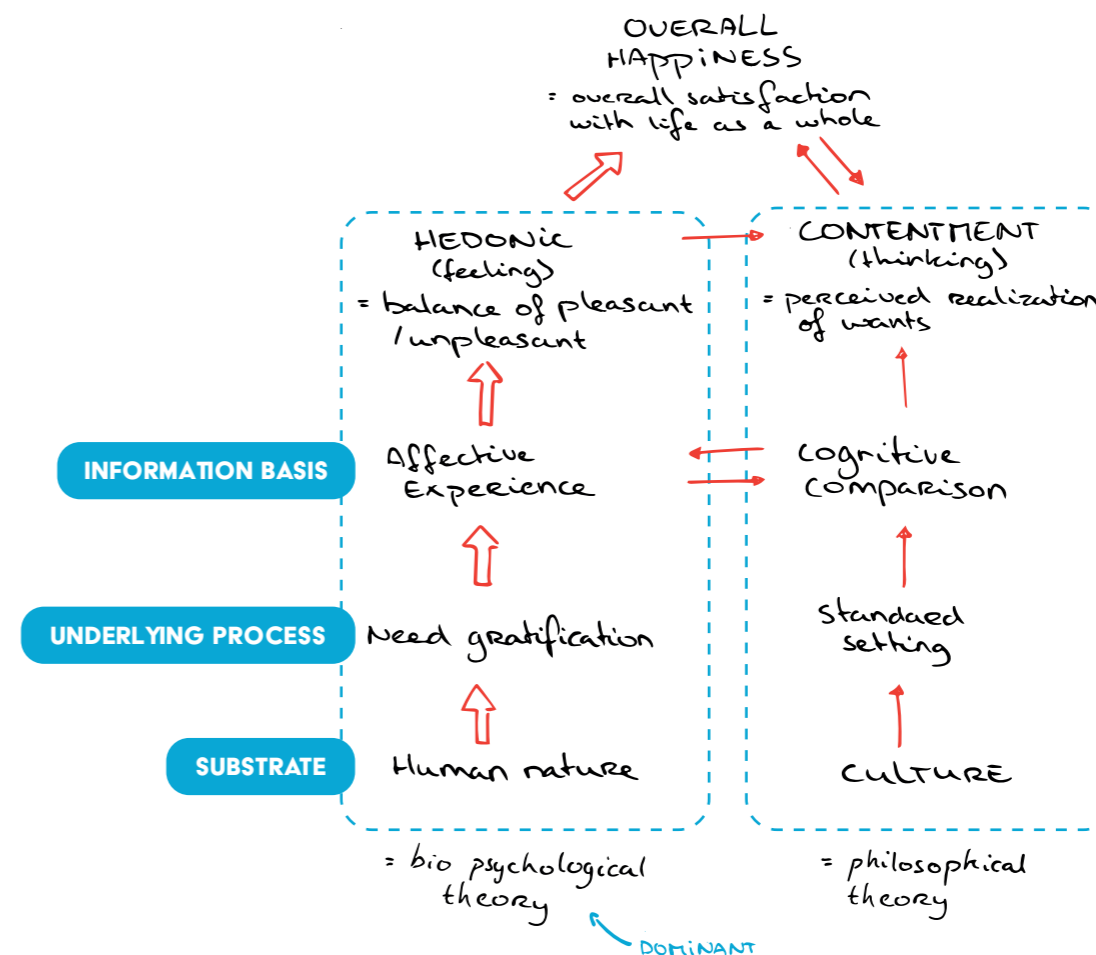


Figure 12: Happiness theory Veenhoven (2009)



Figure 13: Four qualities of life (Veenhoven, 2000)

- 1. Livability of the environment:** The material conditions of your environment. In the case of student housing one can think of the livability of the home you get to live in/are assigned to. For example, the amount of space you have, where it is located and the condition of the provided furniture.
- 2. Life-ability of the person:** Competence of taking advantage of the situation you are in. So how clean you keep your room, how often you eat together and can enjoy each other's company, how nicely you decorate the house etc.
- 3. Utility of life:** The usefulness of your life to other people. In a student house this can be about how nice you are to your other roommates, how they can enjoy your cooking skills or maybe you can teach new roommates how to take care of themselves.
- 4. Appreciation of life:** Overall feeling of being satisfied with the outcomes in your life. So you are satisfied with your home, the people in it and what you get out of it such as the friendships that you already made while living there.

The first three categories are considered objective qualities as they are about meeting standard ideals, e.g. doing good. The last category, appreciation of life, ought to be subjective since you want to meet your personal beliefs and feel well. This last category can also be described as life satisfaction and is the one category which contributes most to our overall feeling of happiness as you are personally satisfied with the outcomes of life (Veenhoven, 2000).

Yet again, what do we mean by satisfaction? When diving deeper into the meaning of satisfaction with life, one can again identify two dimensions resulting in four different types. First, the difference in the duration of the satisfied feeling (passing versus enduring) and second, the distinction between feeling satisfied with a part of life or with life as a whole (Veenhoven, 2009), see figure 14

	PASSING	ENDURING
PART	1. pleasure	2. Domain satisfaction
WHOLE	3. Top Experience	4. Life satisfaction

Figure 14: Four types of satisfaction (Veenhoven, 1999)

Explaining and illustrating the four types of satisfaction.

- Pleasure:** when drinking a beer outside on the balcony in the sun with your fellow roommates
- Domain satisfaction:** when you are satisfied with your parents
- Top experience:** when you feel great and part of something for a moment. A sense of unity. For example when all students inside the same building start cheering on the balconies because the Netherlands won the football match.
- Life satisfaction:** Enduring satisfaction with one's life as a whole. You are satisfied with yourself, your study, your friends/family and your student home.

And as stated in figure 8 (Happiness theory Veenhoven 2009), the enduring satisfaction with one's life-as-a-whole is what happiness is. As the bio philosophical theory is considered the most dominant path, this project focuses on the needs of human nature that provide feeling happy or (to connect it to the well-being definition) feeling well.

3.2.2 Maslow's hierarchy of needs

When talking about human nature and the need for gratification, one cannot neglect Maslow's research on people and their hierarchy of needs (Maslow, 1943). Maslow stated that people want to fulfil their needs in life, but they cannot achieve one need without fulfilling the one before. You have to fulfil one need before unlocking the next. In other words, the needs are hierarchical.

When mapping the insights (from the happiness theory of Veenhoven and the Harvard adult study) onto Maslow's hierarchy of needs, it becomes clear that the focus of this project should be on Maslow's psychological needs. To focus on stimulating friendships that contribute to our overall feeling of belonging, of feeling at home. However, herewith not forgetting the basic needs of water, shelter and safety. As the first two levels, the basic needs, are the minimum needs a housing corporation has to take care of. The basic needs as well as the psychological needs have

to be equally highlighted from the beginning of the project. When designing a new building or developing a renovation plan, one can already think about how to stimulate social contact between roommates/neighbours, how students can evolve inside their homes and how the property should be managed in the end. Make sure the well-being aspect doesn't become something you 'add on' at the end. Once DUWO also incorporates these psychological needs, there is room for students to explore what they need in terms of self-fulfillment and become satisfied with life as a whole.

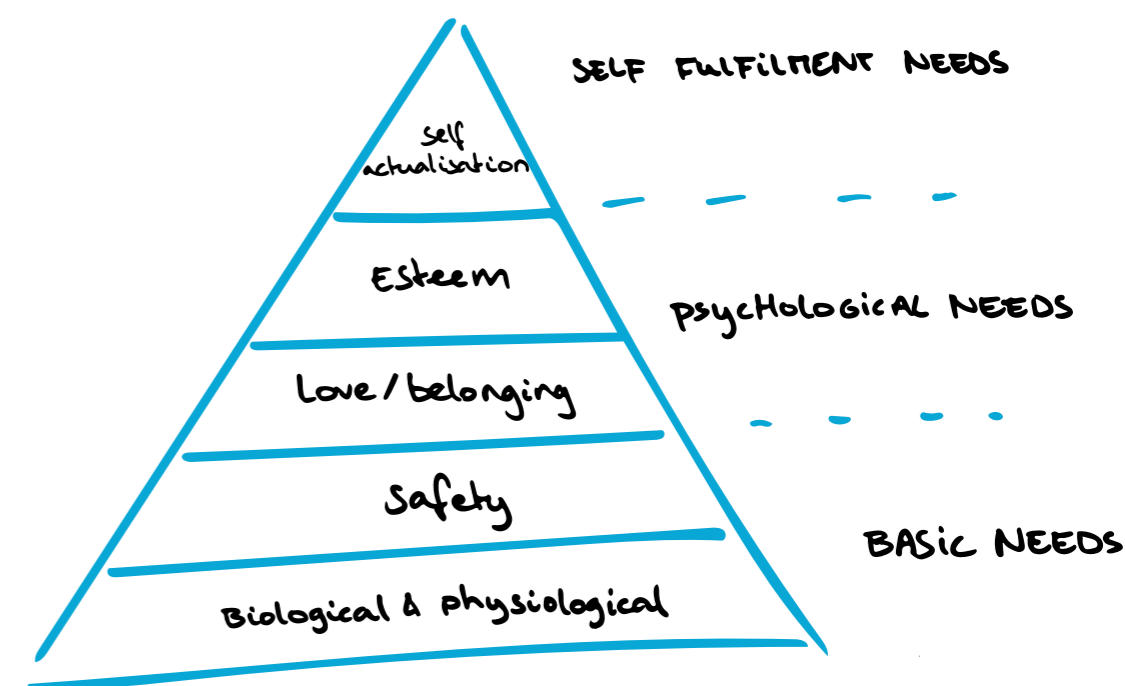


Figure 15: Maslow's hierarchy of needs (1943)

3.2.3 How valuable connections make us happy

A Harvard study that already runs for more than 80 years and started off as a study about adult development, proves that close relationships make people happy and have a powerful influence on their health (Mineo, 2017). Although people tend to focus on money or fame, it is not what makes them happy. Close relationships keep people happy. In his TED talk *What makes a good life? Lessons from the longest study on happiness*, Waldinger explains the effects of good relationships and how they keep people happier and healthier (Waldinger, 2015). He mentions that social connections are great for humans and that, oppositely, loneliness is toxic. Isolated people are less happy compared to people who do not experience loneliness. Also, their brain functioning declines sooner (earlier memory loss) and they live shorter lives.

Secondly, Waldinger (2015) highlights it is about the quality of the relationships. It is not about the number of relations you have. People can still feel lonely in a crowd or even in a marriage. Robert Waldinger (2015) categorizes good and valuable relationships as relationships that feel warm and in which you can count on each other when the moment gets tough. They form a protective effect on people's lives. Contrarily, it is harmful to our health to live within conflicted relations as physical pain gets magnified by emotional trouble. So, to live happy and healthy, people should devote time to leaning into relationships.

“It might be something as simple as replacing screen time with people time or livening up a stale relationship by doing something new together, long walks or date nights, or reaching out to that family member who you haven't spoken to in years” - Waldinger, 2015

Nonetheless, it is a challenging message to live up to for us humans. We still strive for money and fame. According to Waldinger (2015), this is because people prefer a quick fix. Yet relationships are complicated, often not very glamorous and lifelong.

3.2.4 Good interpersonal relationships

How can a housing corporation contribute to the overall well-being of its tenants? This chapter explains it all starts with stimulating contact. According to Bakker (J. Bakker, personal communication, April 2021) more contact leads to better interpersonal relations and the better the interpersonal relations, the higher the achieved social support. Higher achieved social support in turn resolves in a higher well-being level. This contact can already be as simple as meeting each other in the hallway. So the more you meet with your neighbours, the higher the chance of creating a better interpersonal relation.

“A tenant living in the first room on the first floor of a building has the least social contacts as he passes the least amount of doors and has the least chance of bumping into someone” - Jos Bakker

But what are good interpersonal relations when talking about roommates/flat buddies? What are we looking for in these types of relations? Seven master industrial design students (both male and female, both international and Dutch and a mix of living in a studio, student house or with their boyfriend) concluded the following after their creative session. To enjoy student living, living together with nice roommates plays an important role. When asking about what they meant with 'nice roommates' they defined it as:

“roommates you share a similar day-night rhythm with and with whom you have some shared interests”.

Disclaimer: These seven students provided some first insights into what students nowadays consider important, however they do not represent the whole student population of Delft. This first creative session mainly gave some inspiration for what to research further. See chapter 3.2 to read the insights gained from the student interviews in which the question 'what makes the ideal roommate?' was further researched.

3.3 THE EFFECT OF COVID-19

When assessing the context and discussing the topic 'well-being' one cannot neglect the Covid pandemic, in which also this project took place. This chapter describes how Covid-19 has affected the students' well-being. Herewith focussing on students living in the Netherlands. Furthermore, it also presents the effects of the pandemic experienced by DUWO.

3.3.1 Lieve Mark

A Dutch student initiative called 'Lieve Mark' (Geels et al., 2021), is a call for action addressed to the Dutch prime minister Mark Rutte. The report, which is based on the responses of 7747 students, is meant to inform the prime minister about the troubles Covid-19 causes students and that it is time to stop ignoring this group. As it was seen that the student population was mostly ignored when looking at the (easing) measures taken by the government to control the pandemic. The main message of 'Lieve Mark' was to start including students in the policy making process. Let students think along and come up with projects that can provide perspective. They want to help but have no idea where they can present their ideas. Secondly, the report provides insight into how students grade their overall well-being on a scale from 1 till 10. As the overall grade didn't get below 4, the graphs excluded the numbers 1 till 3.

As can be seen in figure 16, the feeling of well-being is drastically lower during the lockdown and the second wave, compared to the period of relaxation during the summer of 2020. This shows that there is a large group of students that grade their well-being as insufficient during the partial or intelligent lockdown. When zooming in on these results, one can also identify a difference when comparing age groups. Students in the age of eighteen till twenty-one seem to be more affected by the measurements compared to the other age groups.

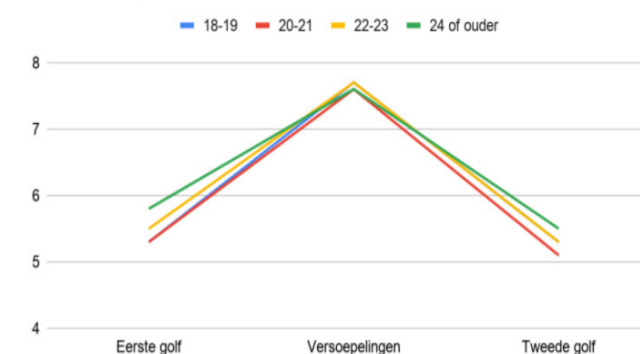


Figure 16: Well-being rating at three different periods plotted against age.

Furthermore, it became clear the living situation of the students influenced their well-being. Students who get to live with at least one other roommate grade their well-being 0.5 point higher compared to students who live on their own (see figure 17). The difference could be explained by the belief that the students' overall feeling of well-being is linked to having social connection with peers, as students who live without roommates experience drastically fewer social connections. Noteworthy, there is no clear difference in well-being between the students living in a rather small or big student house.

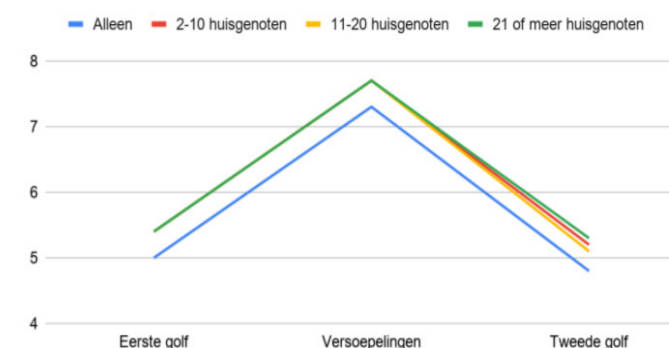


Figure 17: Well-being rating at three different periods plotted against group size of the student house.

3.3.2 Covid & DUWO

To get a closer look at how Covid-19 is affecting the student housing market, the rental numbers of DUWO are investigated. The biggest effects over the year 2020 and the beginning of 2021 are listed in the table 7 on the right.

Diving deeper into the latest numbers of June 2021, one can see the trend of increasing numbers of regular rent terminations (1) diminishing. The same holds for the decrease in registration time needed to get a room via Direct Offer (4). The trend of an increase of University Housing rent terminations (5) has completely stopped since the end of March 2021.

On the other hand, the increase of premature termination of University Housing contracts (6) seems to have stopped. In 2021 there are in total 413 cases, which is way less compared to the 1.436 cases in the same period last year. Furthermore, the amount of University Housing cancellations (7) turns out to be 25% lower this year.

This year the ROOM subscriptions (3) increased again, but this might not be directly linked to Covid. Most likely the subscriptions increased because the student housing corporation of Groningen joined ROOM and therefore there are more rooms available on the website.

Lastly the number of average responses per room advertisement (2) are back to normal. However this might be the case because there was a drop in available rooms.

To summarize, the mutation rate turned out to be higher during covid. As more students decided to end their renting contract, more rooms became available. And although the number of responses per room turned out to be lower, there were still 40 people replying. Therefore, in the regular renting sector there were no vacancies. When looking at University Housing on the other hand, there turned out to be some vacant rooms. As by contract these houses are meant for international students, who decided/were not able to come because of Covid-19. But as there were still other students (who, under normal circumstances, cannot prescribe for these rooms) looking for a room, DUWO decided in agreement with the universities to rent out these rooms until the end of the semester via Direct Offer. Resulting in the trend of a decreased registration time needed to get a room via Direct Offer.

<i>The effects in 2020</i>	<i>Explanation</i>	<i>June 2021</i>
1. An increase of regular rent terminations	In 2020, 19.2% ended the contract, which translates to <i>1700 more</i> terminations compared to the year before.	Diminishing trend
2. A decrease in average responses per room advertisement	In the first five weeks of 2021 there is an average of 35-45 responses per room, whereas in the same period the year before the average lies between 65-75 responses per room.	Stopped
3. A drop in new registrations in ROOM	In 2020 there is a drop in new registrations in weeks eleven till fifteen, and between September till December.	Stopped
4. A decrease in needed registration time to get a room via Direct Offer	In 2020, an average registration time of 8.8 months was needed. In 2021, the average registration time is 11.8 months. This is still less compared to the needed registration time of 19.8 months in times before the Covid pandemic..	Diminishing trend
5. An increase of University Housing rent terminations	This holds for contracts without a predetermined end date. A <i>25% increase</i> in 2020 compared to 2019.	Stopped since week 12
6. An increase of premature termination of University Housing contracts	This is about students who already signed the rental contract, but decided at the very last moment not to come to the Netherlands. In the first five weeks of 2021, <i>128 contracts ended prematurely</i> . In the same period in 2020 there were 73 cases.	Stopped
7. An increase of the University Housing Cancellations	Students who decided not to sign the rental contract (due to Covid-19, students were given more time by the Universities to make their decision). In the first five weeks of 2021 already 74 cancellations were processed, in the same period last year there were 43 cancellations.	Stopped

Figure 18: The effects of Covid-19 on student housing market as detected by DUWO

3.4 CONTEXT CONCLUSION

DUWO

- In the upcoming seven years the demand for student housing in the Netherlands, and especially in Delft and Wageningen, will remain bigger than the offer.
- DUWO is part of the larger political entity in which all agreements about student housing are recorded and in which everyone checks/advises each other. If DUWO wants to adopt a new vision, within the current context, it will always have to consult and coordinate matters with the stakeholders and comply with the rules.
- Together with the TU Delft and the municipality of Delft, DUWO formed a task force to actively trying to tackle the student housing shortage in Delft

Well-being

- Well-being is a combination of feeling good and functioning well. Whereas the feeling part is considered dominant and is therefore where the focus of this research lies.
- Social contact leads to valuable relations and valuable relations is what people need to become happy in life.

The effect of Covid

- Covid-19 did have an effect on the number of international students coming to the Netherlands and cancelling their room. Nonetheless, the amount of students searching for a room is still greater than the availability of rooms, therefore vacancies were limited.

4

TREND RESEARCH

In this chapter, we look at trends in student housing to get an idea of how the trends might influence the students' overall well-being. The focus of this project is still on the Netherlands and Delft in particular, yet, this chapter highlights insights from all over the world as other cities can function as an example and are a source of inspiration to see how a city can respond to specific trends. In particular, cities that already face many more challenges regarding housing shortages can provide creative solutions that may also be relevant for Delft in the future. This chapter starts by explaining the approach for identifying the most significant trends (4.1) and then presents the selected trend views (4.2).

4.1 THE TRENDS IN STUDENT LIVING

The trend views technique (Simonse, 2018) is used for this trend research. The approach starts by collecting all kinds of (visual) information. At the same time, the designer documents all observed changes in the daily lives of people regarding the subject. In this case, the initial topics for the trend research were student housing, housing in general and (student) well-being. To check if all areas are covered, a final DESTEP analysis (which maps all possible demographic, economic, socio-cultural, technological, ecological and political influential factors (Vliet, 2020)) was carried out. Finally, as this is an authoritative trend technique, the designer is the expert and summarizes the information resulting in trend cards. After mapping the trend cards, it resulted in the trend views presented in chapter 4.2.

4.1.1 The trend cards

This paragraph presents the summary of the trend research in the form of trend cards.

1. Bursting cities - Demographic



Figure 19: Trend card 1
Image retrieved from bungalow.com

As more individuals want to live inside the city, cities are rapidly expanding, resulting in more high rise buildings, lack of space and extreme challenges for infrastructure. These areas become overcrowded, and space becomes limited. Limited space in combination with issues in the construction industry have led to a housing shortage in Delft (Van der Velden, 2019).

2. Continuously connected - Socio-cultural



Figure 20: Trend card 2
Image retrieved from dribbble.com

More and more time of our lives people spend online, which results in being continuously connected with anybody at any moment in time. Creating power for the individual (McCrinkle & Fell, 2020), yet disconnecting to what is physically around the corner. One can no longer solely assess the type of people someone surrounds himself with to determine if this person belongs to a community (Michael, 2020).

3. The expensive dorm - Economic



Figure 21: Trend card 3
Image retrieved from thestudenthotel.com/delft/

Student housing has become a revenue model in the Netherlands (Eerenbeemt, 2019). As space is limited and the demand is high, the rent increases. A new concept is where a landlord doesn't just rent out a room but provides a whole lifestyle with varying facilities. The Student Hotel is a clear example of this luxurious but also expensive lifestyle.

4. Study pressure - Socio-cultural

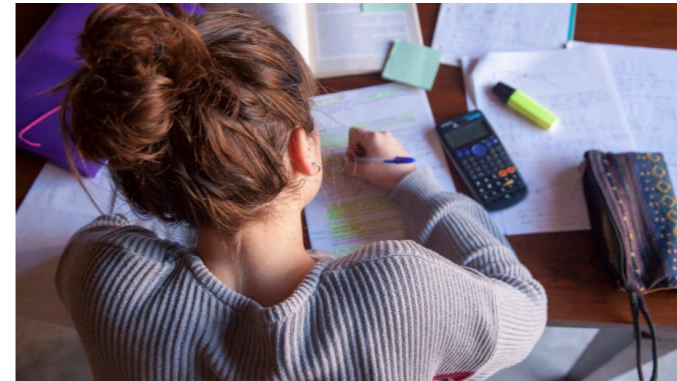


Figure 22: Trend card 4
Image retrieved from goedgezind.be

The increasing pressure to perform in combination with the study loan is causing a lot of stress on students (NOS, 2019). Taking ten years to complete your studies is now an exception rather than a rule. This pressure also resolves in a greater focus on studying at home.

5. Relive co-living - Socio-cultural



Figure 23: Trend card 5
Photo from: David Butler (Wainwright, 2020).

Co-living as a solution to the urbanisation challenge. Host many more people in the same popular city areas by having a smaller private space and shared common spaces (Wainwright, 2020).

“If we see a shared space – and a network of shared spaces – as being part of our rent - it transforms how you live. It’s a move away from the idea that your private space is the end of your living experience.” - Tom Teatum, Director of Noiascape (co-living developer) (Coldwell, 2020)

6. Digital nomads - Technological



Figure 24: Trend card 6
Image retrieved from thebrokebackpacker.com

As we can connect to the wifi almost anywhere in the world, working remotely has become more popular. People are no longer bound to one place to live, which stimulates the privileged digital nomad community where people travel all over the world to work from exotic places (Lufkin, 2021).

7. Sustainable housing - Ecological/Politics



Figure 25: Trend card 7
Image retrieved from urbanrigger.com

As natural resources are limited, sustainability drivers also influence the way we live. Introducing eco-friendly homes: homes that produce electricity, efficiently cool/heat the house and sometimes are even built on water because of the limited space on land. In the Netherlands, the government focuses on insulation and energy transitions for the social housing sector (Rijksoverheid, 2020).

“Today sustainable is almost another word for common sense, or making things practical and smart.” - Bjarke Ingels, Founder & Creative Partner BIG (Iype, 2019)

8. International student growth - Demographic



Figure 26: Trend card 8
Image retrieved from Student Hotel

A growing number of international students is coming to the Netherlands. A trend that most likely will not diminish soon (Kences et al., 2020).

9. The social epidemic loneliness - Socio-cultural

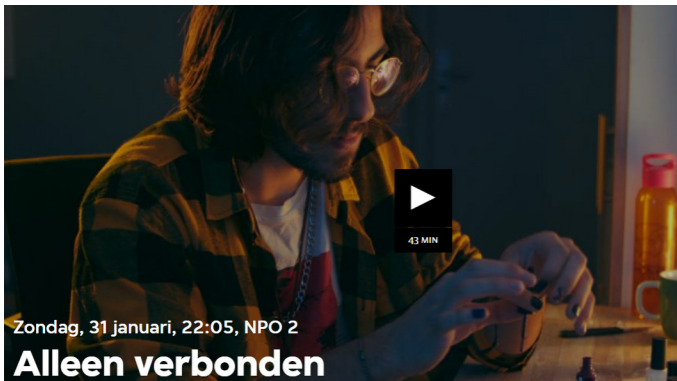


Figure 27: Trend card 9
Image retrieved from VPRO.nl

Loneliness has become a social epidemic. We spend more time of our day alone than we did ten years ago (Asthana, 2020). More people experience loneliness, which damages the brain and people's mental health (Waldinger, 2016).

According to Reeves, the only solution is to "Belief in voluntary-action and give more power and control to the people." (Asthana, 2020)

10. Studio living - Socio-cultural/Economic



Figure 28: Trend card 10
Image retrieved from DUWO

More students are living in studios in the Netherlands (Voogt, 2020). As studios are nowadays affordable due to the rent allowance in the Netherlands, students like the idea to not have to share facilities, you do not have to get voted in to live in a studio, and corporations more often built studios. This slowly starts to change the image people have of Dutch student life where big groups of student live together in one house and form tight communities

11. Move around - Socio-cultural/Economic



Figure 29: Trend card 11
Image retrieved from Het Parool - ANP database

Students live in one place for shorter periods. Nowadays, students, on average, need less time to finish their studies, more decide to still live with their parents for the first year (Voogt, 2020), and once they start renting a student room, they move around more often. Probable reasons for the latter: more students want an experience abroad (Nuffic, 2020) and sublet/leave their room, and students switch universities between Bachelor and Master.





Images retrieved from Facebook page: Kamer in Delft

Images retrieved from studenthotel.com

4.2 TREND VIEWS

Mapping the previously presented trend cards resulted in the following three trend views. I (the designer) believe these three trend views summarize the most significant expected changes in student living. One cannot neglect these three views when designing for the future of student living.

Individualistic living

Student life is becoming more individualistic. Roughly half of the students live in studios, and more are choosing the studio life. Furthermore, there is a greater focus on personal study achievements, which results in students more often wanting to study alone in their room. Besides, we all spend way more time of the day online behind our screens than we ever used to. A lot of time, when we could also have met up with others physically, we spend alone.

Luxurious living

Commercial parties entered the student housing market and turned student living into a revenue model selling a luxurious lifestyle. Yet, slowly this way of living is becoming more of a standard outside of the Student Hotels. Study achievements become more important, plus students seem to have more going on outside of their homes. The busy lifestyle leaves them spending less time on daily (house) chores, which they prefer to outsource. Students order food every week and pay a subscription fee to guarantee that their bike always works are great examples of student life becoming more luxurious.

Temporary living

It's becoming more standard for students to spend at least half a year of their studies in another country. Besides, more and more international students decide to study and live in the Netherlands. This increase of study experiences abroad results in the need for temporary living. And if students only live in one place for a short time, this also changes the way they furnish the room. The need for furnished rooms where students only need to add some personal items increases. This need results in student rooms becoming more neutral.

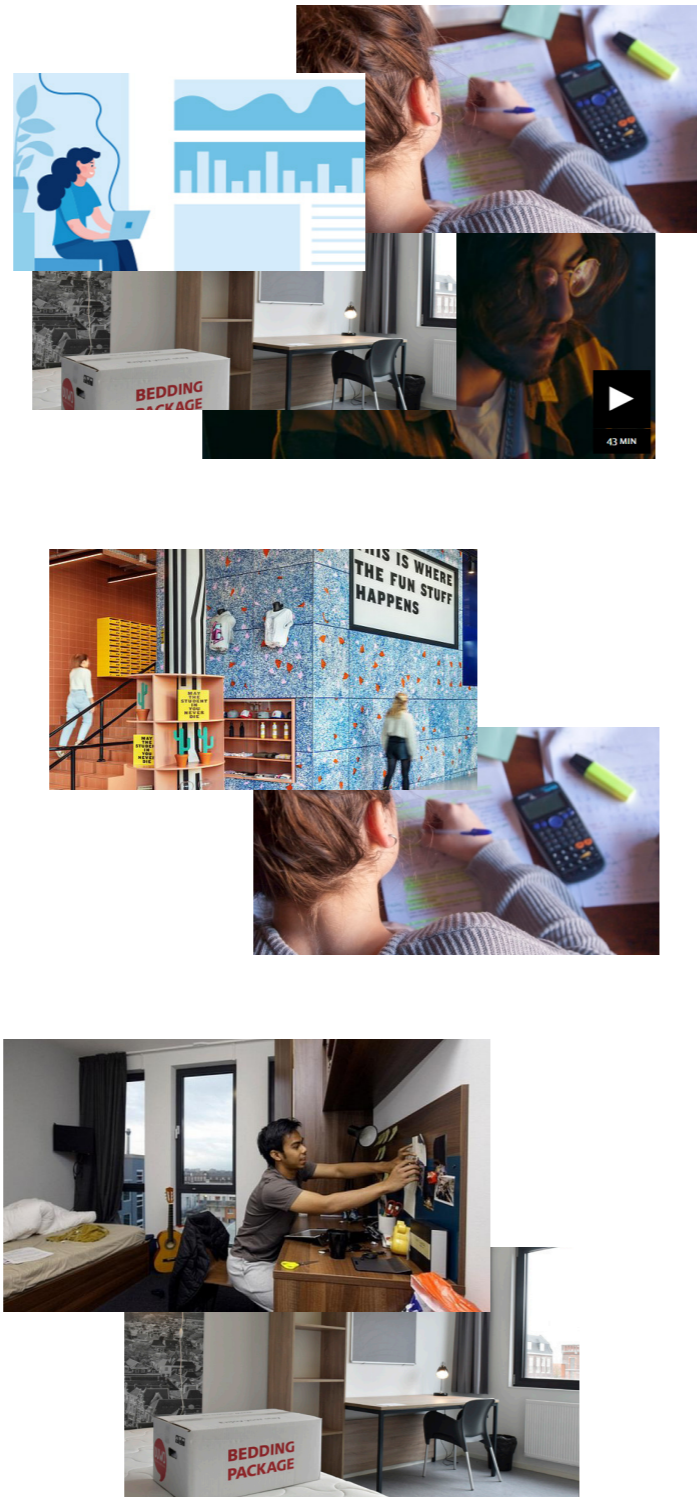


Figure 30: Repeating images to visually refer to according trend cards

5 REDEFINING THE CHALLENGE

Now we have discussed the trend views (4.2), the theory on well-being (3.2) and DUWO's interest in well-being (2.1) and their operating network (3.1), this chapter formulates the redefined challenge based on those insights.

Based on previous findings, we can conclude that stimulating valuable relationships helps improve the social well-being among students and helps avoid loneliness among students. But it is still unclear how one can support those valuable relationships and what students consider valuable.

This chapter starts by describing the current problem. It discusses the insights found that explain what is currently limiting the possibilities in student housing to improve well-being strategically. Next, it presents the followed consequence to conclude with the redefined challenge.

5.1 THE CURRENT PROBLEM

Based on the insights gathered throughout the research phase of this project, the current problem DUWO faces is that the corporation has difficulty **clearly understanding and representing student needs**. Yet, understanding those needs is necessary to be able to support student well-being effectively. Two following two discussed components (the communication gap and the missing link) explain why DUWO is currently facing this challenge.

The communication gap

It seems that there is **a gap between the corporation's intention and the expectations of the students** (See figure 31). As DUWO is always searching for the most affordable and also sustainable solution which is available for all students (see chapter 3.1.1), their policy focuses on the future and the collective. Whereas as students nowadays are more globally connected and live at varied places for shorter periods of time (chapter 4.2), they ask themselves what it means for their situation at the moment. So, they focus moreover on the present and individual effects.

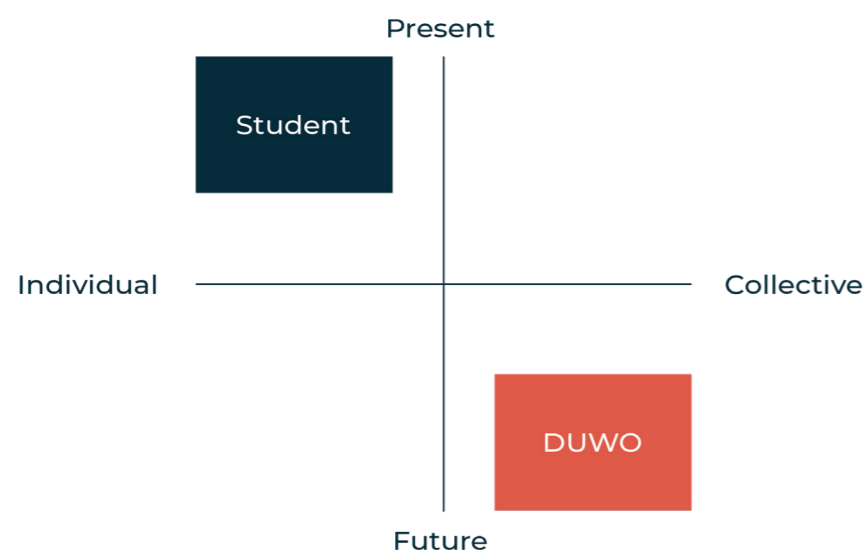


Figure 31: Different perspectives between students and DUWO

The missing link

Nowadays **there is no clear party that is both close to the students** (and by being so has a clear understanding of their current (tacit) needs) **and at the same time strategically translates these needs into long-term policy plans for student housing**. The parties all form a link between the policy plans and the student, but none of them is in this ideal position. Figure 32 provides a schematic overview of how the parties form a link between student and housing plans, whereas the orange part indicates the ideal position. The paragraph below explains for each party their positioning.

1. Wijwonen (the tenant organisation)

The tenant organisation Wijwonen represents the students' interests (as required by the Dutch law). In practice this is indeed the case for the smaller individual matters on a very practical level. Unfortunately a clear vision and strategy to achieve newly set goals, defined from the student needs, is currently missing. To give an indication of the practices of Wijwonen, the commissioner of residents summarizes her function as follows:

"I am the first point of contact for students if they have problems in their room which they cannot solve with DUWO."

2. Collaborating tenant organisations

The collaborating tenant organisations together serve a very strategic and long term goal. They create plans intended to serve the collective. Yet, only the most often mentioned student matters which are pushed forward by the tenant organisation, will be included in these strategic plans. In other words they become quite distant from the students themselves.

3. The residential assistant

This role is introduced by DUWO mainly to support new incoming international students. Students already living inside a DUWO building, welcome new students and help them settle. These residential assistants are the first point of contact during August/September. Unfortunately, after this period, the role disappears. So there is some real close contact between students and these residential assistants, yet the focus is solely short-term.

4. The student caretaker

This is another role introduced by DUWO, with the aim to solve small practical issues in and around the complex. The student caretaker lives in the student building him-/herself, reports repairs to DUWO, fixes small technical problems, controls the cleaning tasks and mediates conflicts when they are still in their infant stage. The student caretakers focus moreover on the practicalities instead of the student needs, yet as they live in the building themselves they are the eyes and ears for DUWO.

5. The residents' committee

The residents' committee represents all tenants of one student complex. They meet at least three times a year and have the authority to approve the service charge account on behalf of all residents. The residents' committee is a useful advisory body that is both in rather close contact with students and aims for a longer term focus. However, experience has shown that a residents' committee is particularly active when there is a problem. When things go well, the commitment often weakens quickly and it is difficult to set up a new committee

6. The building caretaker

The building caretaker is mentioned here because this person is often in close contact with students and therefore possesses a lot of tacit knowledge about student needs. The caretakers form a direct communication link between DUWO and students. They hear all kinds of stories when visiting the student complexes. However, as the name already suggests, their main focus is to take care of the building. So their plans are focused on the building rather than on the needs of the students.

- 1 Wijwonen
- 2 Collaborating tenant organisations
- 3 Residential assistant
- 4 Student caretaker
- 5 Residents' committee
- 6 Building caretaker

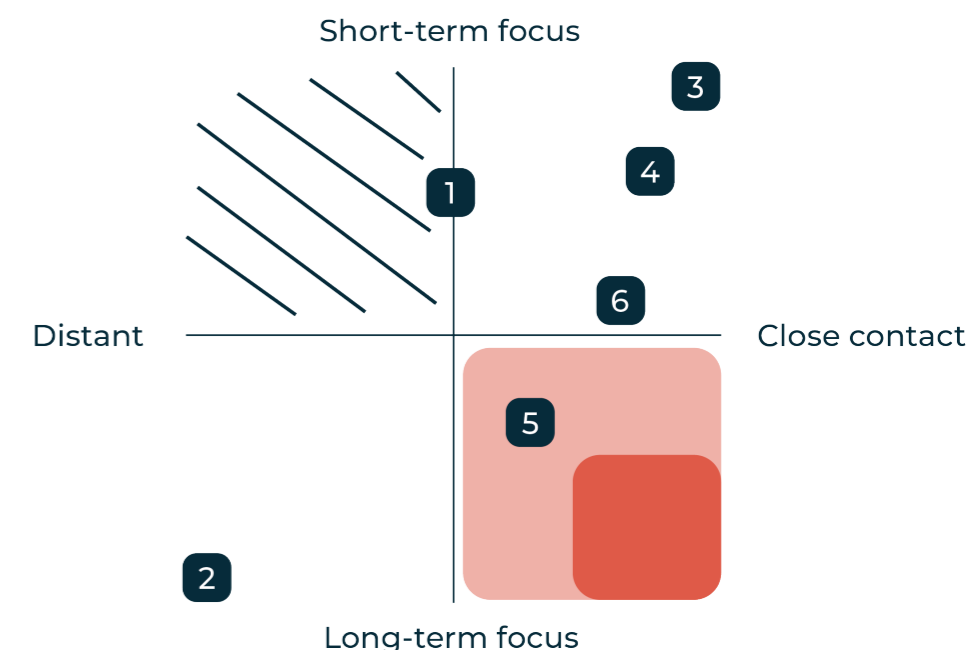


Figure 32: Schematic overview of parties' positioning

5.2 THE REDEFINED CHALLENGE

The consequence of the previously described situation is that DUWO's policy focuses on affordability, availability and sustainability. Well-being is only thought of at a later stage. Their attitude is reactive instead of proactive. In practice, this attitude results in building more studio complexes and redesigning big common rooms once it becomes clear the students do not use them (because it doesn't fit their needs). DUWO is perfectly aware of what needs to happen to make something affordable and practical from their perspective, yet pays less attention to what the students need in terms of their psychological needs.

To conclude, this is the redefined challenge as to how it results from the findings formulated in section 5.1:

To develop a future vision on how DUWO can incorporate students' social well-being in their policy.

The related sub-challenges:

1. To find out how DUWO can get a better understanding of students' (unspoken) needs to be able to design for those needs
2. To determine how DUWO can support the creation of valuable relationships between students living in the same building

6 STAKEHOLDERS' NEEDS

To get a deeper understanding of the stakeholders' challenges (and if these are in line with the redefined challenge presented in the previous chapter) empirical research was conducted. In this chapter, I provide an overview of the most meaningful insights from this empirical research. These are the insights from the student panel (8 participants) and student interviews (13 students) as well as the expert session (4 experts). This empirical study builds on the redefined challenge and serves as validation. This chapter mainly addresses the pre-defined sub-challenges as it provides insights into the needs of the students and what they consider valuable relations. Furthermore, it investigates the experts' expectations at the board level to determine how they match the student needs.

6.1 THE STUDENTS' VALUES

In this chapter, I discuss which values (vital to the students themselves) emerged from the creative session with the student panel and the student interviews. Furthermore, I zoom in specifically on the core values of the Krakeelhof, using Hofstede's onion model.

The interviews in particular indicate what a student is mainly looking for in a student residence. By exploring primarily the questions: what makes a home?/ what makes the ideal roommate?/ why did you decide to move out?

6.1.1 Creative session with student panel

At the beginning of this project, an online creative session with eight Master students from Industrial Design was hosted to get a first impression of students' wishes and expectations regarding their housing situation (see Appendix C). To get an idea of what they like/dislike about their home, how often they move and why they decide to move, and what topics they consider most relevant to address. As these were already older students, it was interesting to take a look at their living careers and all the experiences they have had. Above all the goal was to get a grasp of all possible directions to take on to improve student living and support well-being.

Method

Due to Covid-19, the session took place online via ZOOM. To make the discussions more interactive, the digital workspace Mural was used. Via this program, everybody can post images and share their thoughts via digital post-its.

Agenda creative session

1. Welcome (5 min)
2. Getting familiar (15 min)
3. Filling-in personal living career (20 min)
4. Defining personal student room criteria (15 min)
5. Rank pre-selected criteria together (20 min)
6. Determine students' wishes (10 min)
7. Closing (5 min)

Prior to the session, all participants were given the task to take a picture of their favourite place inside their home and describe what makes it their favourite place. This exercise was discussed directly after welcoming everybody for participating and briefly introducing the topic and goal of the session. The 'favourite place exercise' functioned as a warm-up and gave a first idea of the student's needs.

To get an idea of how often students move during their student time and why they want to move, these Master students had to describe their living careers. To get an idea of how old they were when they started living in their first student room. To see why they decided to leave their parents' place. To discover how many different student homes they have lived in by now. And to know with how many roommates they currently live.

By filling in the living career exercise, the students themselves got a clearer idea of their reason to live where they live, which helped them with the next task. During this exercise, they defined their top three selection criteria when looking for a new place to live. These selection criteria combined give a rough idea of the students' expectations.

To get an even deeper understanding of the student expectations, the students had to rank ten pre-selected elements on student housing, derived from a quantitative study by DUWO. As there is only one place for most important and least important (see figure 33), the discussion steers towards these two. This approach derives from the Q-method. The Q-method was already developed in the 1930s, as the creator William Stephenson wanted a scientific method that handles subjectivity (Coogan & Herrington, 2011).

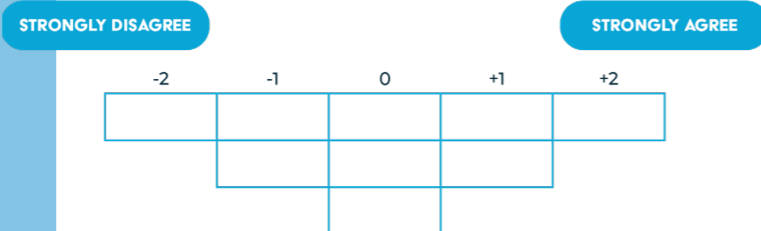


Figure 33: Visualisation of Q-method

Outcomes

The creative session triggered various discussions which unveiled some underlying needs, expectations and wishes of students. Nonetheless, it turned out to be hard for students to pinpoint specific needs. This paragraph summarizes the most prominent insights found through the discussions and answers to the exercises.

For six out of nine students, the favourite part of the house links to social interactions.

Two students choose their balcony "as it invites roommates to spend time together". Another student (living in a studio) picks her dining table as her favourite spot, as this place reminds her of the warm conversations she has with friends. A fourth student picks her boyfriend (whom she lives with) as her favourite part of the house. I choose the cupboard filled with board games since I like playing board games with my roommates. And a final (international) student picks an artefact that reminds him of his childhood home "It connects me to what I care about, I suppose". So it is not even about his current room anymore.

The living career exercise revealed that:

- This group, on average, lived in four different places. One student remained at one home for her whole study career and another student lived in seven different places.
- Travel distance seems to be the most common reason why these students leave their parents' place.
- Students were on average 18.2 years old when they left their family home.
- The deviation between shared and private housing is 50-50

(see Appendix C for the complete table)

Top three selection criteria: price, roommates, location.

Seven out of eight students mentioned price (in relation to size) as one of their top three selection criteria when looking for a student room. The discussion showed that the students were willing to adapt their criteria quite easily based on the availability. That when the availability of rooms is limited, it is simply about fair pricing. So you do not pay too much for what you get in return. For half of this group is having nice roommates, one of the top three selection criteria "as it can legitimately improve your overall living experience".

Three out of eight mentioned the location to be important. That the house is not too far from the city centre/campus.

Social contact with residents is the most important pre-selected criterion.

Social contact with residents turned out to be the most important factor and the appearance of the building the least. During the discussion, the element presence of crime was depicted as irrelevant when discussing student housing in Delft. But the students mentioned the element already becoming more important when talking about student housing in Rotterdam or the Hague. This remark triggered the following reflection:

Are students always selecting those elements that are missing or lacking as most relevant? Regardless of their overall objective value?

For example, a student might never consider choosing fire safety as the most important element in a situation where there is an escape route and where everything related to electricity and gas seems to work fine. However, the moment there is a fire incident inside the building, fire safety immediately gets on top of their list. So ranking these elements is always related to the current situation.

When looking into the rankings of the Krakeelhof (see figure 34) from the quantitative study conducted by DUWO, the condition of the house is ranked most important. Yet, social contact and location receive a shared second place of importance, although these two elements are considered the two best selling points of this location. So to refer back to the question as stated above, no students do not only select those factors that are lacking at this moment. Yet what they decide to give their top priority is directly linked to the current situation. Therefore, the ranking of the elements reveals information about the students' current living situation, rather than a ranking result of objective value for each topic.

When striving for customer satisfaction, one should focus on those elements on top of the list (with a high importance ranking) that receive a low overall score (on a scale from one to ten). Students consider it important, and there is still a lot of room to improve. But when looking at the same numbers from a well-being angle, one might be more interested in keeping specific aspects alive. Take Krakeelhof as an example. Do we want to update the overall condition of the complex even if it would affect the overall score of social contact with residents? What if with renovating the house come new rules that affect social cohesion? Students might rearrange their ranking once elements are brought into relation with one another. So as these results provide a clear overview of the status quo, it is best to not base 1-1 solutions on it as students do not oversee the practical implications. **Students, therefore, have to be involved in the decision-making process to increase both well-being and customer satisfaction.**

Lastly, student wishes vary a lot.

From the last exercise, where students could dream and decide on what they want to improve their current living situation if anything is possible, it was again clear that students all wish for something different. One wants to have a bigger outdoor space, another student prefers having new neighbours who make less noise, and a third student wants to keep the same room but place it in a house with roommates. So to assess what students genuinely need and wish for, it is best to address them directly.



6.1.2 Student interviews

From the creative session with a student panel, a couple of new questions about student needs arose. The main reason for conducting the student interviews is to unravel the most important values of student living in order to get a better grasp on these fundamental needs of students. This paragraph starts by explaining the method used and then describes the most valuable insights.

Method

A semi-structured interview style is used to conduct the thirteen interviews with varying students (see Appendix D for the interview guide). As said, the main goal is to find the essential values of student living. To find these values, students are triggered to think on an abstract level and answer questions like ‘what is home for you?’. Subsequently, a more direct question like ‘why did you decide to move out?’ and especially ‘why did you decide to leave your first student home?’ is asked to get clear examples of what students consider important and how they change during their studies. The third essential question ‘what makes the ideal roommate’ is asked to get an idea of what students consider valuable relations in the living context.

Participants

1. Master student from India, male, lives in a studio of DUWO in Delft
2. Dutch Master student, female, lives in a studio of DUWO in Delft
3. Dutch Bachelor student, female, lives at her parents’ place
4. Dutch ex-student, male, lives in an apartment in Delft, with three other Master students (used to live at the Krakeelhof)
5. Master student from the UK, male, lives in a big international house with +10 roommates (SHS Delft)
6. Dutch Master student, female, lives in a studio of DUWO in Delft
7. Dutch Master student, male, shares two-room apartment of DUWO in Delft with one other Master student
8. Dutch ex-student, male, owns an apartment in the Hague
9. Dutch ex-student, male, rents an apartment with his girlfriend in Rotterdam (used to live at the Krakeelhof)
10. Dutch Master student, female, lives in a two-room apartment of DUWO in Delft with her boyfriend
11. Dutch Master student, female, lives in an apartment with three other Master students in Rotterdam
12. Master student from Polen, female, lives in a big student house with 17 roommates (lives at the Krakeelhof)
13. Dutch Master student, male, lives in a two-room apartment of DUWO in Delft with his girlfriend

Krakeelhof (n=7)

Element ranking	Element score
1. Condition of the house	3.9
2. Social contact with residents/Location	8.3/7.6
10. Presence of criminal activity	5.9

Shared housing (n=1526)

Element ranking	Element score
1. Condition of the house	5.4
2. Hygiene	5.3
10. Presence of criminal activity	6.1

Private room (n=1771)

Element ranking	Element score
1. Condition of the house	6.3
2. Hygiene/Location	6.2/8.0
10. Social contact with residents	5.5

Figure 34: Summary of DUWO's customer satisfaction research results

The ideal roommate

When looking into the answers students give to describe their ideal roommate, one can identify three clusters (see figure 35). The perfect roommate is either someone who doesn't bother you, who feels like family or who becomes a friend. There is a gradation from having a neutral relationship with your roommate to being super close. As almost solely Master students are interviewed, students also provide insights into how their opinion has changed over the years. They used to be more interested in becoming friends with their roommates, but nowadays, they prefer a familial or neutral relationship.

- The student currently experiences a negative relationship with his/her roommate:

"Nuisance. My roommate used to make loud music at two in the night."

- The student feels like the type of relationship (s)he shares with the house no longer fits his/her student life. Usually, students at some point want a more casual relationship with their roommates or decide to live on their own.

"My internship started, and I wanted to live a more healthy life. I was done with all the parties every evening."

"I felt guilty about not being at home that often anymore."

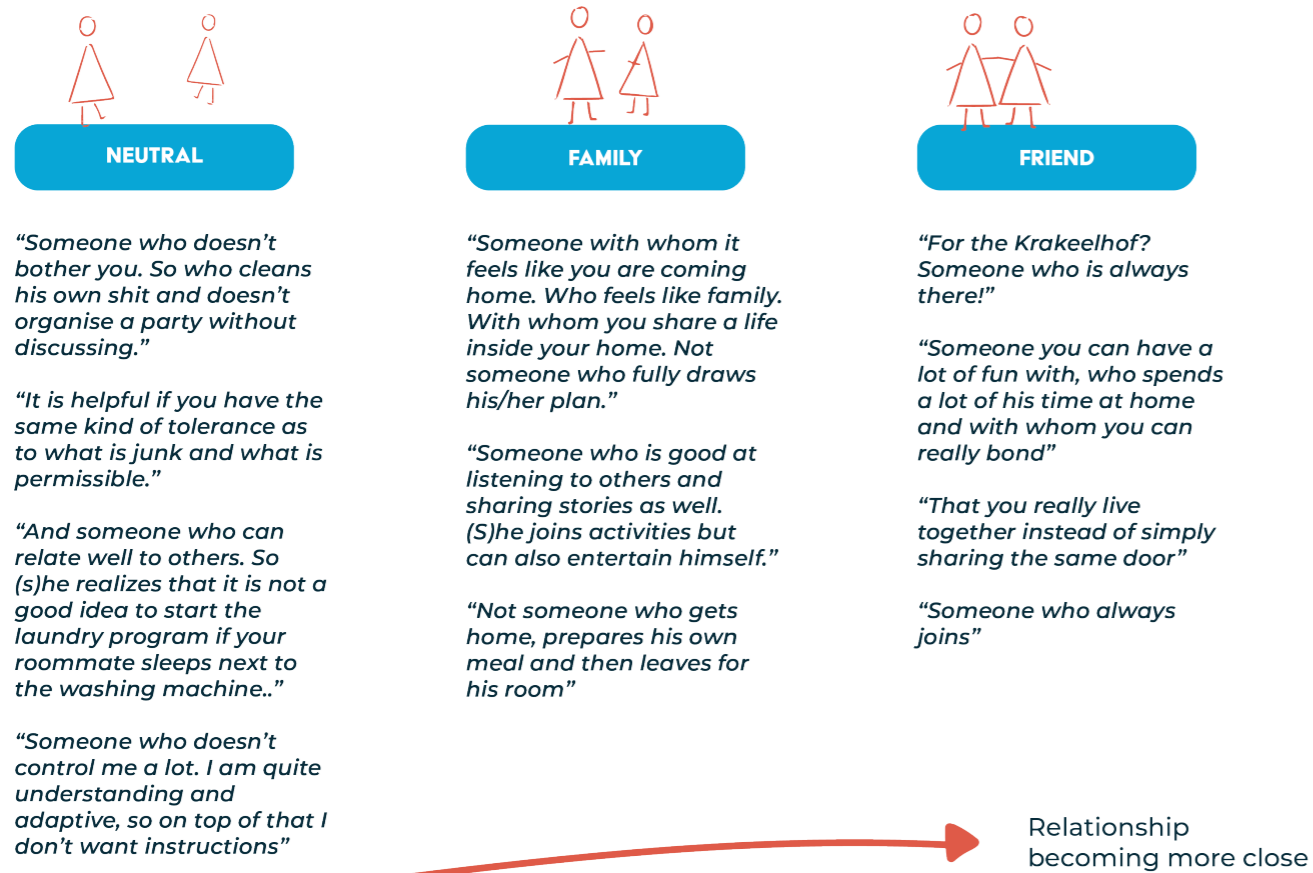


Figure 35: Visualisation of three types of roommate relationships

Why move out?

This question was asked to get a better understanding of what students consider important regarding their living situation. Since, as you decide to move, there must be a reason to undertake the action. Looking back at all the answers that were given, they were either contract or relationship related. Most reasons can be directly linked to a change in the relationship with roommates the student seeks.

- The student decides (s)he wants to live with his/her boyfriend/girlfriend
- The student decides (s)he wants to live with friends

The other reasons were solely practical. The contract stated that the student had to move out after a certain period of time.

What is home to you?

It turns out that most students think of *home* in terms of *feeling at home*. They moreover describe a feeling they want to experience at a place they call home, rather than describing the place itself. Half of the students described *home* as *"a place where I can be myself"*.

- Where you do not have to pretend
- Where everything important to you is within reach
- Where you can let go of all the things that go on in your mind.

"If I live in a place where I don't have the things I like to do around, I cannot be myself because it is also part of who I am"

Another big part of the students mentioned the feeling of home is mostly about the people. The place itself matters less because it is about the people you live with that make it home. Following this reasoning, it makes sense that people can feel at home at places they have never been before. However, they do have to be or get familiar with the people living there.

"It is a combination of the place and the people. You may feel at home in an unknown place, just because of the people with you. Or the other way around."

Furthermore, the question about home triggered the discussion about the meaning of the word itself. In Dutch, the word for home is *'thuis'*, which already captures two meanings: 'I feel at home' and 'I am home'. However, in English, the word 'home' is more directly linked to a place, to your family home. The place where you grew up. So in terms of communication with international students (particularly students from the UK), one might consider using the word **'homely'** to address the same kind of meaning.

Conclusion

- **Students value a good relationship with their roommates.** If the relationship is not good/unequal, it becomes for many students an argument to move out. There are several ways for the relationship to become a reason to move out. Sometimes the reason to move out is directly linked to negative experiences (the students don't see eye-to-eye), but sometimes it is simply because of a gradual change in needs. The need for a type of relationship with roommates (neutral/family/friend) no longer matches the relationship need of the fellow residents.
- **Half of the students want their home to be a place where they can be themselves.** Where everything important to you is within reach and where you can let go of all the things that go on in your mind
- **One-third of the students believe the people make it home,** that the place itself matters less. So when wanting to make someone feel at home, one should start by ensuring the person becomes familiar with the people around. Make them feel **homely**.

6.1.3 Core values of the Krakeelhof

The onion model (Hofstede, Hofstede, 2005) helps to discover the underlying values of a specific culture by visualising the three layers that surround the core: the symbols, heroes and rituals. In this case, the model was used to find the core student living values of the students of the Krakeelhof. Because, as the wishes and values turn out to differ so much between students (as mentioned in chapter 6.1.1.), it is best to address the target group directly. In this project, the current and future students living at the Krakeelhof form the target group. Figure 39 depicts the filled-in onion model of the Krakeelhof.

When examining the symbols, heroes and rituals of the Krakeelhof, it immediately becomes clear that there is a strong sense of community. If you enter the property (especially on a sunny day, but not exclusively) you see students chatting everywhere. They host block parties (the four houses of one block host a party together), study sessions with the house, swim parties with the entire block and (date)dinners. Most symbols refer to this community feeling. The stairs are often the decor for the parties and chill sessions, the entrance symbolises 'coming home', and the dinner subscription system shows how often students eat together. Furthermore, the eldest of the house (in Dutch 'huis oudste' often abbreviated as 'H.O.') is often seen as the hero of the house. This person gains the most respect from the other students as this person has the longest-lasting living experience

and knows best how things work inside the home. This respect also shows how much students value the tight communities that they form at the Krakeelhof. Sometimes the old roommate who used to live at the property is also seen as a hero. The old roommate is seen as a hero if he decides to visit the home quite frequently. Most houses even have the ritual of organising the 'old roommate dinner' once a year where students that have left the house five years ago still come back. They still feel part of the community.

Furthermore, students experience a lot of freedom and value creativity at the Krakeelhof. Unfortunately, this gets symbolised by all the junk that gets left behind at the property. Students party and leave their beer bottles scattered around. Bikes are parked everywhere. Often not in the bicycle shed as it is inconvenient and it would hinder their freedom. On the first sunny day of the year, somewhere in April, students decide to set up the inflatable pool, which can easily stay there until October without anyone taking care of it. This randomness/freedom factor also results in various creative expressions. On the square, students repair their cars and build new furniture (additions) for their homes. In the past, they even used to host a festival every year.

To conclude, the core values of student-living at the Krakeelhof are community building, freedom and creativity.



Figure 36: Students at the Krakeelhof repairing their car



Figure 37: Chilling at the stairs of the Krakeelhof



Figure 38: Inflatable pools at the Krakeelhof

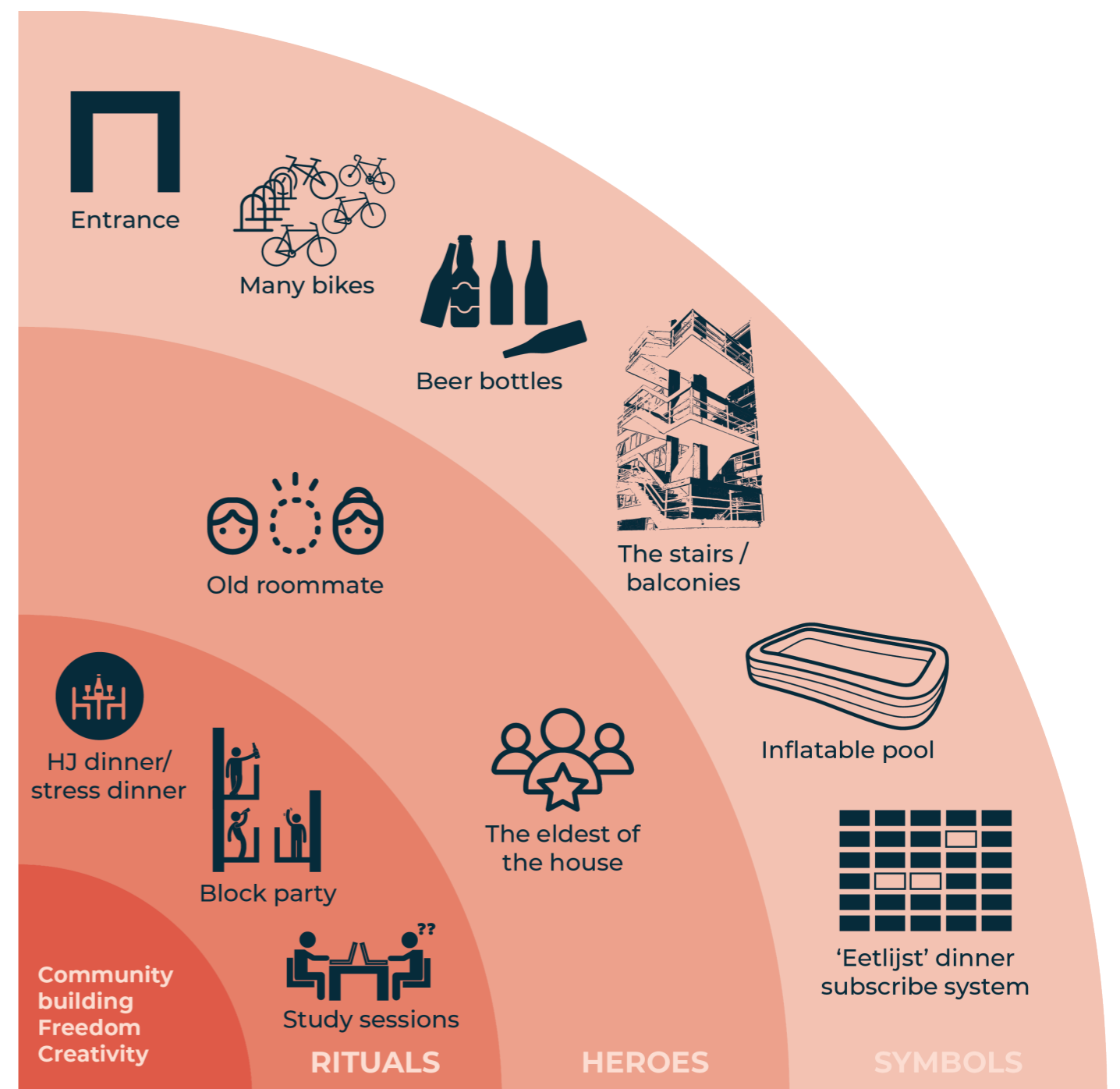


Figure 39: Onion model depicting the cultural values of the Krakeelhof

6.2 THE EXPERTS' CHALLENGES

This paragraph delves deeper into the opinions of the experts. The expert session itself served as a further elaboration of the redefined challenge, presented in chapter five. The specific goal of the session was to check what complicated issues the experts face and what challenges they see for the future. To see how and if their challenges are in line with the proposed redefined challenge of chapter 5.1. See appendix E for a detailed description of the whole session.

6.2.1 Method

A creative session with experts was hosted to get an idea of the challenges they face concerning the topic of student housing. The whole session took place online (due to Covid-19) via Microsoft Teams. The exercises were set up in the online program Mural where all participants can put in digital post-its to share their thoughts.

Participants

- Counselor of Delft - Living, sports and poverty
- Policy advisor TUDelft - Logistics, student prognoses
- Area developer, Site - Creating a vision for the 'Krakeelpolder' area
- Policy advisor DUWO - Strategic advice on renovation projects
- Master student Design For Interaction
- Host: Master student Strategic Product Design

Agenda creative session

1. Introduction (10 minutes)
2. Warm-up exercise (10 minutes)
3. Addressing student needs (20 minutes)
4. Mapping experts' standpoints (15 minutes)
5. Addressing society's expectations (15 minutes)
6. Revealing challenges (10 minutes)
7. Round-up (10 minutes)

Prior to the session, all participants received an invitation explaining the purpose of this graduation project (see figure 40). During the introduction the project was once more briefly explained, the principles were clarified and agreed upon, the functionalities of Mural were explained and all participants got the opportunity to introduce themselves to get to know each other and herewith create some relaxed group dynamics. The principles were defined as follows:

- As everyone is carefully selected based on his/her background, one should speak from his/her personal point of view unless indicated otherwise
- There are no right/wrong ideas and everyone is able to speak freely
- The goal of the session is to deepen the context and highlight the most important challenges of the future of student housing.

To first get an idea of how the participants see students, they were asked to write down terms they associate with students. This task derives from the flower association technique, where participants are to come up with as many associations with one word as possible (Heijne & Meer, 2019). Here the exercise was used to loosen up the participants and see what first comes to their minds.

To dive even deeper into the student context, the participants were asked to place themselves in the shoes of the students and



Figure 40: Invitation to stakeholders explaining the project

write down the needs students have. To provide some scope, the focus here lies on the first three years of the student living experience. The same question about student needs was asked once more, but now specifically about the needs of international students to see if there is any difference between those groups.

Dilemmas were presented to provoke a discussion and determine the experts' outset-opinions. The discussion starts black and white, yet, as the solution mostly lies in the middle, the discussion becomes more nuanced along the way. This exercise maps the starting point for the discussion of each participant.

To get a rough understanding of what is expected from students from the standpoint of society, the participants were asked to describe the ideal student. What would the ideal student do? How would he behave? What would he especially not do? By asking this question it also becomes clear where the frustrations and therefore the challenge lie for student living.

In order to really define those challenges, the participants were asked to combine a student need (from the second exercise, point three on the agenda) with an expectation and afterwards come up with as many solutions to tackle this challenge.

During the final round all participants got the opportunity to share their thoughts or ask their final questions.

6.2.2 Outcomes

Throughout the whole creative session, various discussions were triggered, which pointed out many challenges. This paragraph lists all the challenges that came apparent. Besides, it discusses the linked causes as indicated by the panel (the participants of the creative session). Lastly, it lists what, according to these experts, the students' needs are.

Students form a heavy pressure on the city of Delft. In percentage terms, a large part of the residents in Delft is a student, which creates pressure on the city. This pressure has an enormous impact on the overall city experience. Especially now that space inside the centre is limited, and people want to live in the same place, the pressure of the student

population is causing considerable political discussions.

“The pressure on the rental housing market is so huge it will trigger political conflicts. Because the starter wants to live here as well. Understanding each others' situations is essential.” - Counselor

Difficult for international students to find housing. According to the panel, the vote-in system in the Netherlands is disadvantageous for international students. At the same time, the necessity to find a room is essential for this group as the non-EU students are obliged to provide an address to receive a residence permit. The vote-in system, which is quite well-known in the Netherlands, allows the roommates (already living in the house) to select a new tenant. In other words, you have to get voted in. But international students often do not get picked. The most heard argument why an international student will not get selected is that the national students prefer someone who speaks Dutch.

“Non-EU students (this now holds for the UK as well) are obliged to have an address in the Netherlands to receive a residence permit. So finding an address where they can stay is a real necessity for them. However, it is hard to find a room in the Netherlands when still living somewhere completely else. The distance limitation does not allow them to enter the vote-in evenings, and they do not know people around here.” - Employee policy TUDelft.

‘Verkamering’ (splitting ordinary family houses into several student rooms) increases the shortage of student rooms. The expert panel points out the overarching problem of the general shortage of student housing in Delft. The new regulations that prohibit ‘verkamering’, are seen as a cause that increases the overall lack of available student houses (see the quote of policy employee TU Delft). Nonetheless, it is considered a necessary intervention to maintain the population balance in the city (see the citation of the counsellor).

“As we no longer want people to create student rooms inside regular family-houses, and the policy makes it harder to do so, the Dutch students (who used to live in these rooms) now want to live in the same rooms as the international students. Therefore this policy increases the pressure on the regular student housing market.” - Policy advisor TUDelft

“What we see is that the number of students versus the amount of other citizens is getting out of balance. To find this balance, we now aim to freeze the existing housing distribution and prevent house splitting. Furthermore, we have to broaden our scope to the TU Campus, but also Schiedam and Rijswijk for example.” - Counsellor

Student housing on campus complicates TUDelft research. The idea of building new student complexes on campus is often considered a logical solution to the housing shortage. As space inside the city is limited, there still is room available on campus, and students find it convenient to live close to their educational institution. However, because of the increasing number of students living on campus, other (new) research-related locations need to make room.

“But we do need to be careful with where we build on campus. Take the problem we had, for example, with the building on the Stieltjesweg. There used to be a research setup that made a lot of noise (which was well known by the investor). Yet they built the student flat anyway, and students started to complain because of the noise. It cost the TUDelft a couple of million to move it, which is a lot of money you prefer to spend on staff/research itself. - Employee policy TUDelft

The rent allowance giving the wrong incentive to solely built studios. Similar to what was mentioned in chapter 2.3, this expert panel also points out the undesired effect of the rent allowance system in the Netherlands. The fact, nowadays, that almost exclusively studios are built is the effect of the rent allowance and the home valuation system combined. As a result, students, who live in these studios, are en masse applying for the rent allowance.

“At this moment in time, we actually should build shared housing, which is extremely hard. Almost impossible. As everybody is making use of the rent allowance system, which makes it more affordable to rent a studio.” - Employee policy TUDelft

“This is also the result of the housing evaluation system, which is extremely disadvantageous for shared housing. So we keep on mentioning it to the central government: ‘Please do something about this!’ Because of this, we are losing support for the rent allowance. We all make too much use of it at times when it should not be necessary and when one can arrange it otherwise.” - Counselor

Older Master students do not move out of their shared houses (no throughput). Another challenge observed by the panel, is that Master students are not moving out of their shared houses. Therefore, they do not make room for new/younger students. As a result, the new students end up living in the studios.

“The balance of shared/private housing of the current student housing property is 50-50, but there is no throughput. So if you just recently started studying, it is hard to find a room. We keep on talking about building new complexes, yet actually, we should start discussing allocating students. Curiously, we do so little with it.” - Counsellor

Commercial parties making money by providing student housing. Because there is a shortage of student housing, commercial parties have started to earn money from students. Students pay high rents because nothing else is available. International students who have to live in Delft to be able to study here are particularly affected. They do not have another option.

“Non-EU students more often end up with the more commercial housing organisations and because of this (which is my personal frustration) student housing becomes a revenue model.” - Counsellor

The nuisance of big groups of students living in the city centre. According to the counsellor, the set maximum number of people per house is mainly there to prevent students from creating noise disturbance. Therefore, she believes the maximum size of the group is directly related to the location of the student home. So for a house located at the end of the campus, it is okay to accommodate bigger groups versus one in the city centre. The challenge is to see how to moderate and solve the current complaints about nuisance.

Students need room for discovery, a homely feeling and enjoyment. All the student needs the experts mentioned can roughly be divided into three categories.

1. Discovery: Students are getting to know their way around.

“As they leave their elderly home for the first time, they need to learn how the whole new situation works for them. How does the TU work? How does the city work? and they need to find their place in it” - Counselor of Delft

2. Homely: Students need to feel safe and at home.

“You hope that the student house, with shared services, becomes home” - Employee policy TUDelft

3. Enjoy: Students make many new friends, plus there is a low threshold to join a leisure activity.

“You have your room where you can get some rest, but on the other side of the door, you can directly find commotion and enjoy the freedom of student life.” - Area developer at Site

6.3 KEY TAKEAWAYS

Inside the residence, a student is mainly looking for a homely feeling. This homely feeling gets triggered by the ability to be yourself or is directly related to the people living inside the house/complex. Sometimes it is a combination of both. If having a roommate, all students want a roommate with the same ideas about how much time you spend together and what personal matters you discuss. The ideal roommate is a student that matches the type of relation (neutral-familiar-friend) you seek.

Furthermore, it turns out it is difficult for students to pinpoint their exact needs. Their needs change over time and link directly to their living situation. Someone who feels lonely might feel the need to bond with other students. Another student might need some more rest and seeks more distance between himself and his roommates.

Our values trigger our needs. Therefore the student values were addressed to get a better understanding of those varying needs. When we talk about the core values of a building such as the Krakelhof, where mainly younger students live, the students value freedom, creativity and community building. These student values relate to the expert session. They summarized the students' needs as discovery, homely and entertainment.

From the creative session, it became clear that the experts face the following tough challenges:

- The rent allowance provides the wrong incentive to build studios.
- The vote-in system is disadvantageous for international students.
- Master students do not move out of their first home and therefore do not make room for new Bachelor students.
- There is still interest in housing large groups of students together, but not in the city centre.

To conclude, although the two groups agree on the core values, it doesn't give us a clear idea of what the students now need. As we remain rather abstract and general, it continues to be unclear what each student needs concerning the context. Furthermore, these rather abstract values of freedom and feeling at home are often directly linked to practical/political matters such as the rent allowance and vote-in system. However, instead, we should start reasoning from these values to discover the linked needs. And determine from there which needs relate to student well-being. To do so, all parties need to talk more with the student, as indicated in chapter 5, to grasp this tacit knowledge.



7 ESTABLISHING VALUABLE RELATIONSHIPS

This chapter builds on the reformulated problem definition: 'how can we stimulate the creation of valuable relationships?' as defined in chapter 5.2. It dives one step deeper into the theory on well-being to see how one can support the creation of valuable relations.

7.1 COMMUNITY BUILDING

In this subchapter you will read how community building leads to the formation of valuable relationships since people within a community dare to be vulnerable, depend on each other and show intimacy. Examining the theory of sense of community gives us a first idea of what students might be looking for in their relationships with roommates or flat buddies and how it can be triggered.

Gusfield (1975) determined two separate uses for the term community. On the one hand you have the conception that a sense of community is linked to a location. The community in a city, a town or neighbourhood. On the other hand, one can also refer to the relational aspect. That it is about the quality and type of the relationship you have with others that forms a sense of community. But the two uses are not mutually exclusive. In modern society more communities seem to be formed around similar interests rather than locality (Durkheim, 1964).

According to McMillan & Chavis (1986) the definition for 'sense of community' consists of four different elements.

1. **Membership:** feeling of belonging. A sense of personal relatedness.
2. **Influence:** A sense of mattering. You make a difference to a group and the group matters to its members.
3. **Reinforcement:** Fulfillment of needs. Resources retrieved through being a member helps fulfill a members' needs.
4. **Shared emotional connection:** The belief that members will share similar experiences, a history, time together.

In the following sub-chapters these elements will be discussed in more detail.

7.1.1 Membership

To become a member, one has to invest a part of oneself. Resulting in the right to belong (Aronson & Mills, 1959; Buss & Portnoy, 1967). Every membership has its boundaries. That is why there are also people who do not belong.

Having these boundaries provides a feeling of safety which is needed for people to express

their personal feelings and makes it able to create intimacy (Bean, 1971; Ehrlich & Graeven, 1971; Wood, 1971). Because the boundaries protect the members of a group, they have the opportunity to be interpersonally vulnerable. It creates emotional safety. Yet, as these boundaries protect our personal space, they also create the pain of rejection and isolation for the people who are left out. To protect the group against threats, members use rituals/dress/language to create boundaries (Park, 1924; Perucci, 1963). In the case of student housing room advertisements mentioning 'Dutch only' (which refers to Dutch-speaking students only) is one of the most mentioned barriers student houses install to protect their community. However, leaving international students behind and creating social distance. But the Dutch student who gets selected (and passes the boundaries) experiences a feeling of belonging. You get picked by the rest of the group. They are accepting you. You are part of them now. You feel you earned it. People often use a common symbol system to maintain the group boundaries and to have a way of representing the group. (McMillan & Chavis, 1986). In a neighbourhood, a symbol could be a landmark or architectural style. Student houses in the Netherlands like to create a house logo that represents their community.

The following two images are two logos of student houses in Delft. The second logo is the logo of of Jacoba van Beierenlaan 73 called 'the Bazaar'.



Figure 41: Examples of a Delft student house logos

7.1.2 Influence

The element 'influence' works both ways: a member influencing the group and the group influencing its members. McMillan & Chavis (1986) describe four statements about how this element plays a role in forming communities.

1. Members prefer to be part of a community in which they feel they are influential. In addition, the most powerful members of a group are the members who acknowledge the values, needs and opinions of others. Translating it to student housing: students prefer to live in a house where they respect (and maybe even share) the same values. That's why students decide to live in a house which is directly linked to their student association. This way, they can influence the overall behaviour of the group, yet herewith still reflecting the values.
2. Both community and conformity influences on members are indications of the strength of the overall bond. As humans like to feel that others experience things the same way (Backman & Secord, 1959; Byrne & Wond, 1962), group pressure on an individual to validate a group view is the primary drive for uniformity (Cart-Wright & Zander, 1960; Heider, 1958; Newcomb, 1961; Thibaut & Kelley, 1959). Group pressure is also apparent in student houses. For example, what if it becomes clear that one student is hesitant about hosting a party on a Monday night, yet all the others believe it is an excellent idea? The student is likely to be peer pressured to arrange the party and change his view. The strength of the bond between the students determines what happens. Either the student decides to (indeed) host the party or sticks to his opinion and ignores the pressure.
3. Both the individual and the community need consensual validation. This need results in the urge towards conformity. Therefore, one can see conformity as an indicator of cohesiveness besides a forced aspect to create closeness. Sometimes conformity can result in a loss of individual freedom. For example a student doesn't feel like joining the drink night at the student association, yet they all go together. Consequently, it's the desire to create communities that accept individual differences.
4. Both directions of influence can be present at the same time, concurrently. In a tightly knit community, these interactions are most likely to be seen. For example, voluntary associations are the mediator between the individuals and the city. They make the city more aware of the individuals' needs and yet still are part of the city and respect its boundaries. The same holds for the study associations. They form the mediator between the student and the university.

7.1.3 Reinforcement

Reinforcement is about the fulfilment of needs. Regarding communities, the group must be rewarding for the individuals to make sure the overall vibe remains positive and people stay motivated to be a part of the group (McMillan & Chavis, 1986).

Various rewards can function as reinforcements. In research status of being a member, competence in another and group success are considered successful reinforcers. But it is difficult to say how people prioritize their needs and what they believe to be the most rewarding reinforcers. Yet, as needs often derive from values defined by culture/how parents raise their children, having shared values might function as a force for cohesive communities (Cohen, 1976; Doolittle & MacDonald, 1978). In a good and strong community, people can fulfil others' needs while meeting their own (cf. Riley, 1970; Zander, Natsoulas, & Thomas, 1960). So students prefer to share the same values inside their home and meet each other's needs while meeting their own. For example, creativity might be a shared value inside a house. When painting the walls for an upcoming theme party, the painters can express their need for being creative. The others get to experience success once they host the party.

7.1.4 Shared emotional connection

Shared emotional connection is always partly based on a shared history. It is not that members of a community have to share the same history, but they should be able to relate and identify with it (McMillan & Chavis, 1986). Nonetheless, it helps to spend time together and interact in the same events to strengthen the community. The seven principles (presented on the right) play a crucial role in the element of shared emotional connection.

An example of the shared valent hypothesis. In an interview with a 26-year-old male (who works for almost two years now), he shared the following about his experience of living as a student at the Krakeelhof:

“During three years, you experience so many things together. At a certain point... For example, my grandfather passed away during the time I lived there, and it is one of the most beautiful moments I shared with my house because everybody really supports each other” [showing tears in his eyes]

A quote describing the spiritual bond communities can experience.

“They [blacks] had a spiritual bond that they understood and that white people could not. Soul was an indefinable, desirable something; black people had it but white people could hardly aspire to it. It was the animating spirit behind their music, their dance, and their styles. It even expressed itself in their taste in food, their language, and their speech. Not even all black people shared it. Those who rejected their blackness did not.” - (Bernard, 1973, p. 130)

7 elements of emotional connection

1. **Contact hypothesis:** (as mentioned before) The more people interact, the more likely they develop a valuable relationship. (Allan & Allan, 1971; Festinger, 1950; Sherif, White, & Harvey, 1955; Wilson & Miller, 1961)
2. **Quality of interaction:** The more positive the experiences, the stronger the bond, as successes have a powerful positive effect on cohesion (Cook, 1970).
3. **Closure of events:** It hurts the social cohesion of the group when tasks turn out to be endless and remain unsolved (Hamblin, 1958; Mann & Mann, 1959).
4. **Shared valent hypothesis:** The more meaningful the shared event, the stronger the bond becomes. Research shows that experiencing a crisis together increases the strength of the bond heavily (Myers, 1962; Wilson & Miller, 1961; Wright, 1943). These are moments people will never forget.
5. **Investment:** (at this point, investment goes further than the previously mentioned investment to maintain certain boundaries and become part of a group) The degree of investment links to what the status of the community means to its members. Someone who devotes more time and energy will be more emotionally involved. This person feels the impact of events on the community. One can also invest in intimacy. If someone dares to open himself to emotional pain from the community, it will affect the person's overall sense of community (Aronson & Mills, 1959; Peterson & Martens, 1972).
6. **Effect of honour and humiliation on community members:** Punishing or rewarding individuals among others of the community impacts the attractiveness of this community to a person significantly (Festinger, 1953; James & Lott, 1964).
7. **Spiritual bond:** Something difficult to describe, yet present to some degree in all communities. Something experienced by those who belong to the community and not by others.

7.2 CONCLUSION

To summarize all the above-presented information about the sense of community, let's provide an answer to the question "how do people feel a sense of community in student houses?". In short, via membership, by exchanging influence, by fulfilling needs and via a shared emotional connection.

In other words, to feel part of a community, a student has to become a member of the group and accept the linked boundaries. The student will affect the group via his/her influence. Yet, he/she will also get influenced by the group in their search towards conformity and members' needs towards consensual validation. Since the community is also fulfilling the students' needs and the student experiences the 'rewards', it increases the sense of community. Finally, the shared emotional connection established by both contact & high-quality interaction further strengthens the bond among the students.

8 FUTURE VISION

This chapter presents the future vision resulting from the recommendation on understanding the students' needs and the requirement of stimulating social relations through social contact. The final design outcome, the future vision, consists of three aspects: 1. the internal policy, 2. student involvement & communication, and 3. architecture recommendations. One by one, each part will be discussed in-depth, showing how it forms a part of the desired state.

8.1 THE INTERNAL POLICY

In the redefined challenge (5.2) we have identified the goal of supporting the social well-being of students. This chapter describes the first aspect of the future vision: the desired state for DUWO's internal policy.

By 2040, Student Housing Corporation DUWO has fully incorporated social well-being as their most important guiding principle, affecting the overall policymaking. The previously existing pillars of affordability, availability and sustainability as pointed-out in chapter 3.1, form the foundation that supports social well-being. Together they shape the basis that informs DUWO's decision-making.

In order to facilitate a practical and viable future vision for DUWO, to let the students reach a high level of social well-being, the desired end-state is visualized below (see figure 42).

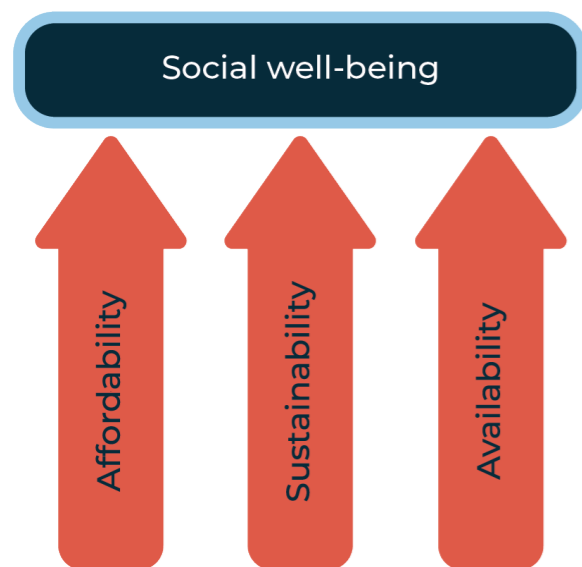


Figure 42: Visual representation of DUWO's basis

8.1.1 The three pillars explained

- **Affordability:** As a social housing corporation, DUWO has the responsibility to provide affordable living for all students. It should not be the case that sustainable housing, supporting students' social well-being, is only available for the rich. Besides, internally, the affordability pillar stands for the prevention of financial risks and guarantees the company's survival.
- **Sustainability:** As the world is becoming more crowded every day, space and resources are limited. DUWO has the duty to strive for sustainable living. The corporation designs durable buildings so they are viable, updates complexes to consume fewer resources, so these complexes are bearable for the environment and effectively houses students, so it is equitable.
- **Availability:** DUWO must strive for enough available student rooms to ensure that these (affordable and sustainable rooms that support the students' social well-being) are available for all different types of students. E.g. long-term/ short-term, Bachelor/Master, National/International.

Social well-being: As it is a well established problem that a large part of the student community experiences loneliness, depression or anxiety (Dopmeijer, 2021), designing for social well-being has become a crucial element of today's society. Especially a place that people call home, is where you can make a difference. DUWO is committed to guarantee the health of its tenants and therefore social well-being forms the most important guiding principle.

If one of the previously named pillars becomes more prominent than the other, the system is out of balance and the well-being goal becomes harder to achieve. This, because all the three pillars lay the foundational elements needed to design for social well-being.

8.2 STUDENT INVOLVEMENT & COMMUNICATION

Based on the redefined sub-challenge about understanding the students' needs, (as described in chapter 5.2) this chapter provides a strategy for DUWO to better understand and communicate about those needs.

In 2040, DUWO is continuously up-to-date on the interests, desires, wishes and expectations towards the future of their tenants through the student participation platform. DUWO sets up the platform in close collaboration with students and a hired sociologist to look at it from a sociological point of view and understand what students need. This advice links back to chapter 2.1 on the corporation's initial relation to well-being. The student participation platform is an extension of the already existing DUWO app. Further on I will present a complete description of this platform, how it can look like and discuss an attached roll-out strategy. Because the platform actively stimulates students to express their thoughts, DUWO can represent the students' needs. The company can form a bottom-up approach to support social well-being.

Secondly, through the information gained via this platform, DUWO can link the future plans for the collective to the current- and mapped interests of the individual. DUWO understands the students' language and can bridge the communication gap (see figure 43) between the different perspectives, as discussed in chapter 5.1.

8.2.1 The participation platform

This section provides a complete description of the platform, a visualisation of how it could look like and its attached roll-out strategy.

The online participation platform is an extension of the existing DUWO app where the tenant can find all the information about the housing provided by DUWO. Students can manage their financial affairs (including online payments), conveniently request a repair, find all detailed information about their building, home affairs (in Dutch 'woonzaken'), and directly contact the caretakers of their building. Apart from all the practical stuff, in 2040 the app also functions as a participation tool for students. The following points describe the functionalities of this latter part of the app. For each functionality it is indicated to which one of the nine recommendations for citizen platforms, as defined in research on digital democracy initiatives at national level (Rathenau Instituut et al., 2020) it relates. All nine recommendations and their explanations can be found in Appendix F.

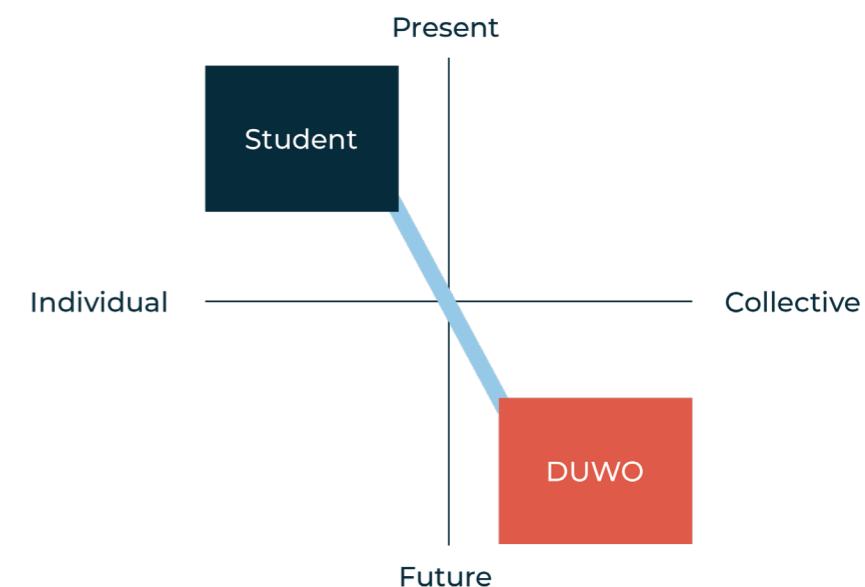


Figure 43: Visual representation of how DUWO bridges the gap between the different perspectives

- To actively motivate the students, DUWO presents a new statement about student housing every month. Every time students open the app, they will see the statement pop-up and can decide for themselves whether they want to reply or not (relating to recommendation 4: Low threshold/invitation). Via the statements, DUWO can quickly learn about the students' expectations, frustrations and opinions. If the statement triggers a student, he can let DUWO know that he wants to think along. If the corporation plans to organise an offline brainstorm session about the topic, the student gets contacted to participate.
- Every once in a while, DUWO hosts offline evenings to discuss political matters with the students. These evenings are organised based on the outcomes of the statements, e.g. when there is enough enthusiasm and input from the students (relating 7: Combine online and offline instruments).
- For the students to become more informed and involved in student housing policy, DUWO presents clear information on internal administrative processes (relating to 1: Make administrative processes transparent). Students can read about critical decisions taken and how it is affecting the student housing market. All the information becomes centralized and easily accessible for the students.
- The students can also upload their initiatives for group activities or improvements for the whole building via the application. Other tenants (of the same complex) can vote on these initiatives. Once an initiative has enough votes (depending on the size of the building), the corresponding social caretaker of the building gets informed. The social caretaker is then obliged to respond and brief the student on whether or not (and in what form) the initiative will become a reality (5. be clear about the process and influence of engagement).
- Each student has insight into specific information about his building, presented under the bulletin board icon in the app. The provided information includes updates of the residents' committee (or the call for new members to start the committee), general messages from the caretakers,

questions and remarks from students (similar to a neighbourhood Whatsapp group) and news from DUWO. Via this section, DUWO can share success stories related to the building (about completed own initiatives, fruitful discussions etc.), efficiently provide specific information on a matter/topic (as they see many students having the same question) and invite students for upcoming events.

- Furthermore, the app provides a direct question-and-answer possibility (3. moderated interaction between students and DUWO) which is now already being tested by DUWO. Students can easily direct their questions via WhatsApp. These questions can now also be policy-related. If they are difficult to answer, the student gets forwarded to the right person/tool.

The following image is a visualisation of the app based on the existing DUWO app. It shows an example of the first idea of presenting statements to students.



Figure 44: DUWO's student participation app visualized

8.2.2 The roll-out strategy

This paragraph describes the advised roll-out strategy for all the recommended functionalities of the DUWO app. It gives an idea of the separate steps of the process that need to be considered and their connected hurdles that have to be overcome.

Step 1: Make the app available for all buildings

Already started in March 2021

To make sure all students renting with DUWO can use the app, it needs to be available for all complexes. As the basic functionalities are working and DUWO is already expanding the app to make it available for all buildings, this is considered the first step.

Step 2: Actively promote the app on social media and during the introduction (welcome talks)

Start August 2021 + continue to update new functionalities

It remains a challenge to guarantee diversity and inclusivity on online platforms. Therefore, it is crucial to actively inform students about the existence and functioning of the available platforms through campaigns and information activities (Rathenau Instituut et al., 2020). So once the app is available for all students, DUWO actively promotes it on social media and their other platforms/contact points. To make sure all new incoming students directly start to make use of the app, DUWO actively promotes it this August 2021. In this regard I advise to make sure the videos on the app are short, inviting and clear about the functionalities to trigger the students.

Step 3: Structure building specific information to present online

Start September 2021 (and ongoing)

To make the app more intriguing to use, students like to read about their specific situation, what it means to them individually as mentioned in chapter 6.1. As the bulletin board is already available in the app, this step is about structuring the information and extending the existing functionality. Along the way, caretakers, students and DUWO can actively make use of this functionality and more information will become available.

Step 4: The whatsapp functionality is fully integrated

Januari 2022 - August 2022

To ensure students can receive direct answers to their questions, the WhatsApp functionality needs to be fully integrated. As more direct opportunities for moderated interaction between students and DUWO representatives can contribute to balanced information and communication flows, allowing them to influence and correct each other. The German and Greek citizen participation platforms examples show that platforms with a question-and-answer function encourages the representatives to be accountable for how they fulfill their role (Rathenau Instituut et al., 2020). Besides, students always need to get the feeling that they are understood and taken seriously and that the contact feels personal. At this point DUWO employees also need to be able to advise students on more policy related matters.

Step 5: The own initiatives functionality is fully integrated

Implemented August 2022

Once the app really starts focusing on the student participation part, the first functionality that needs to be alive is the own initiative component as you don't want nice initiatives to get lost in translation. From the start, it needs to be clear for the students where/how they can post their ideas and how these ideas are processed. Because, for the success of students' initiatives, it is crucial to manage expectations and to be clear about how students' input affects formal decision-making. This requires will and commitment from DUWO to take the results seriously, but also for interim feedback and accountability afterwards. (Rathenau Instituut et al., 2020).

Step 6: Update internal information on administrative processes and present online
August 2022 - ongoing

DUWO becomes more transparent about their internal processes in order for students to feel more involved. The presented information can support interested students in their involvement, as well as help DUWO representatives to shoulder their responsibilities (Rathenau Instituut et al., 2020). Being more transparent also means making the information easily available for students.

Step 7: Formulate statements to upload in the app and process the responses
Januari 2023 - ongoing

To actively stimulate students to give their opinion on matters DUWO faces, the corporation presents statements on these topics. This digital voting offers opportunities to involve larger groups of people and make better use of knowledge and expertise in society (Rathenau Instituut et al., 2020). Yet, DUWO shouldn't translate the output directly to one-one solutions as it is always the question how representative the output is and what the qualitative reasoning (chapter 6.1) behind the answers are.

Step 8: Offline evenings hosted based on statement insights/student initiatives
Februari 2023 - ongoing

The online functionality forms a low threshold for students to give input and gives DUWO an understanding of their needs and expectations. But once students feel really involved and care about the outcome, they want to speak to someone and have a real conversation (see chapter 6.1). Digital engagement tools can contribute to a renewal of democratic processes, but it takes effort and more than technological gadgets to organize fruitful, free and safe interaction between students and DUWO (Rathenau Instituut et al., 2020). It is a matter of trying to find out how often and in what form these evenings should take place. Make sure to discuss the format with the students.

Step 9: Iterate
Continuously

It requires careful design, repetition and reflection to determine how, when and why a participation process contributes to democratic legitimacy. Little is known about the long-term effects and influence of digital citizen engagement on trust between citizens and government. Extra research into this and flexible design of new platforms and initiatives are crucial to be able to translate lessons learned into new designs (Rathenau Instituut et al., 2020). That's why the sociologist needs to be involved throughout the process of implementing this application.

8.3 ARCHITECTURE RECOMMENDATIONS

Facilitating social contact through physical architecture. As described in chapter 3.2.4 (on good interpersonal relationships), social contact leads to the formation of valuable relationships. This is again confirmed in chapter 6.1 (on community building), explaining the contact hypothesis. So the more people interact, the more likely it is that they develop a valuable relationship thereby diminishing isolation, loneliness and anxiety. Herewith improving social well-being. To visualize how the physical architecture of a building plays a role, the Krakeelhof functions as an example. The theory on promoting contact as described by Gehl (2011), forms the foundation for the following suggestions. For each of the five elements as described in this research, it is discussed to what extent Krakeelhof already stimulates contact or how it can be implemented in a new building.

1. The facing balconies at the Krakeelhof already are a great example of facilitating interaction. This type of face-to-face orientation stimulates contact. Back-to-back orientation would inhibit contact.

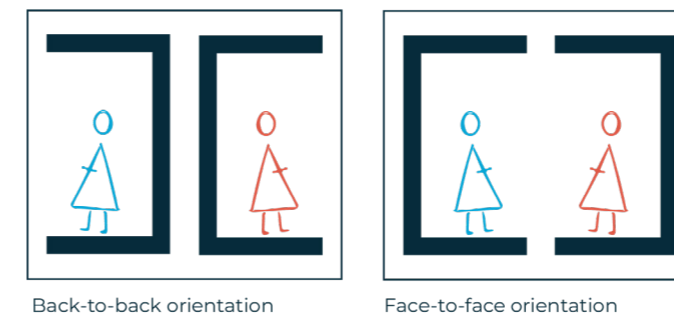


Figure 45: face-face orientation



Figure 46: The balconies at the Krakeelhof

2. An improvement would be to shorten the distance between the balconies, as smaller distances make it easier to communicate. This implies narrowing the square in the middle.

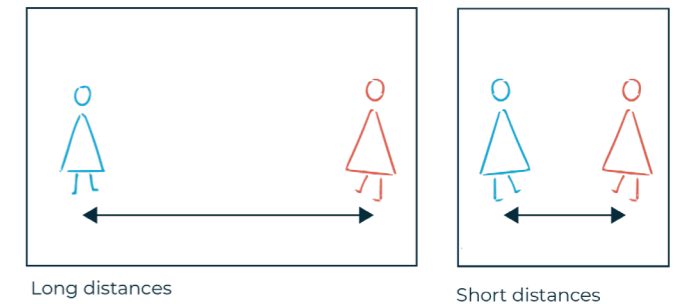


Figure 47: Short distances



Figure 48: The indicated long distance between houses at the Krakeelhof in Delft

3. Narrowing the square in the middle also improves the social contact made on ground level. As again the distances between people become shorter, also the speed level decreases and therefore it gives people more time to interact. The square will no longer be hospitable for automotive traffic. People tend to see the space more suitable for walking instead of driving.

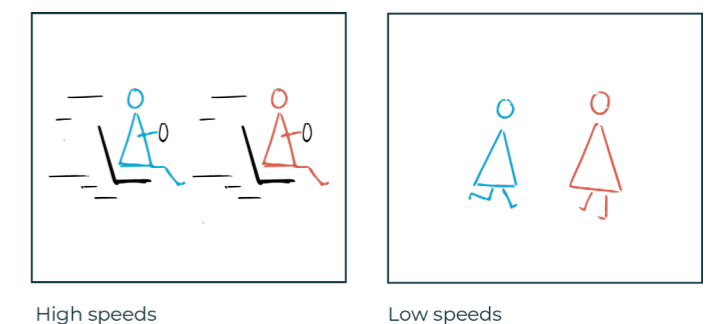


Figure 49: Low speeds

4. Yet if you would decide to make multiple smaller squares (as indicated by visual 50), this would then also negatively affect the amount of social contact at the Krakeelhof. Since no longer all houses face the same square anymore, some views from the balconies to the square would be blocked by the walls of the other houses. Yet, the more people see what is happening on the square, the more people will feel invited to partake in what's going on at ground level, herewith stimulating social contact.

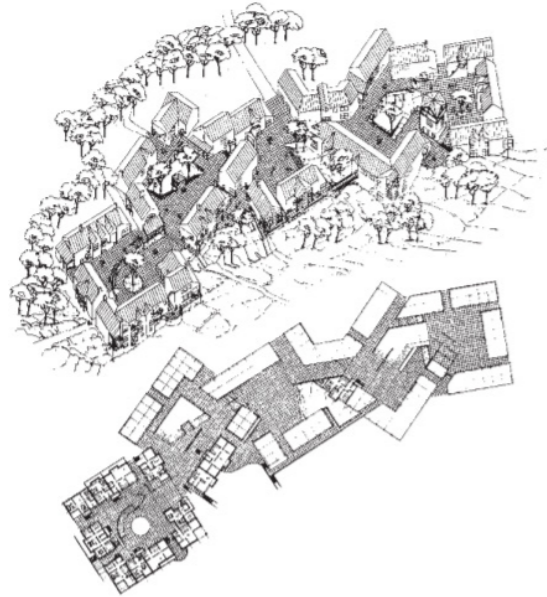
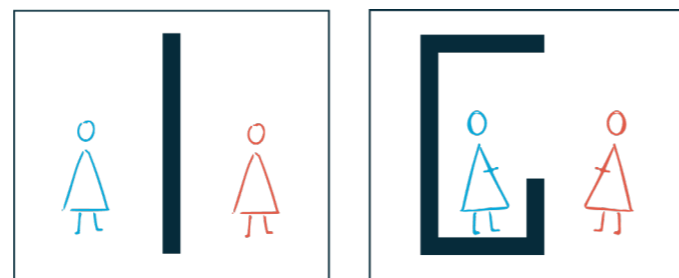


Figure 50: An example of building architecture that makes use of smaller squares

“Community centers with windows on the street have more members than clubs in basement rooms because passersby are inspired to join in by seeing what is going on and who is participating.”

“It is generally true that people and human activities attract other people. People are attracted to other people. They gather with and move about with others and seek to place themselves near others. New activities begin in the vicinity of events that are already in progress.” (Gehl, 2011)

So in general, one should strive for as few walls as possible, as this directly increases the amount of contact. If there would be no walls, students would literally see each other all the time and would have to interact. Yet, of course people need their personal space. Therefore, this advice mainly holds for semi-private and semi-public spaces. Such as creating an open living room so you immediately know what is going on when entering. At the Krakeelhof, the living room of the student house is already one big space, positioned in the center of the house, so the students get a good idea of what is going on and feel more invited to share some time together.



Walls

No walls

Figure 51: No walls

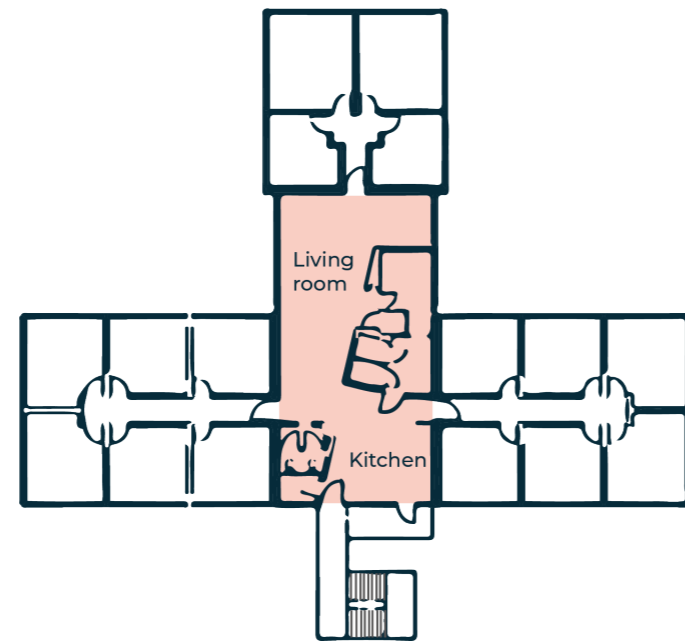


Figure 52: Overview of the central location of the living room of student houses at the Krakeelhof



Image retrieved from Facebook page: Kamer in Delft

5. Another positive aspect at the Krakeelhof, is the fact that there are a lot of people living on the same level. Ideally, from the perspective of stimulating contact, all 500 students would live on the same level so they can all see and hear each other. However, this would be hard to manage in reality, since space inside the city of Delft is limited, as mentioned in chapter 6.2. Only creating one-level housing would indicate completely neglecting the pillars of affordability and sustainability. Besides, this would probably also indicate longer distances between the houses, resulting in inhibiting social contact. So it is always about finding the right balance. Therefore, the advice is to strive for as few levels as possible, without increasing distances and without neglecting the affordability and sustainability of the building.

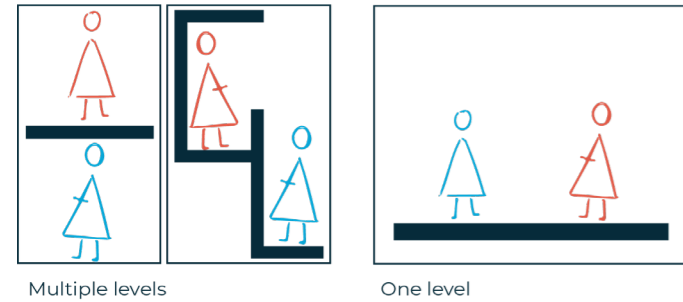


Figure 53: One level

6. Finally, the Krakeelhof has a hierarchical structure that establishes a gradual transition from private to public (see figure 56). Because of this gradual transition people feel more attracted to the public space and know the people living outside of their private space better. This results in a greater sense of belonging and a feeling of security for the students.

“The establishment of a social structure and corresponding physical structure with communal spaces at various levels permits movement from small groups and spaces toward larger ones and from the more private to the gradually more public spaces, giving a greater feeling of security and a stronger sense of belonging to the areas outside the private residence. The area that the individual perceives as belonging to the dwelling, the residential environment, can extend well beyond the actual dwelling.” (Gehl, 2011).



Figure 54: The single entrance to the Krakeelhof of today, which forms the transition from public to semi-public



Figure 55: The entrance sign that used to be in front of the Krakeelhof, but had to be torn down
Picture posted by waste disposal company Avalex

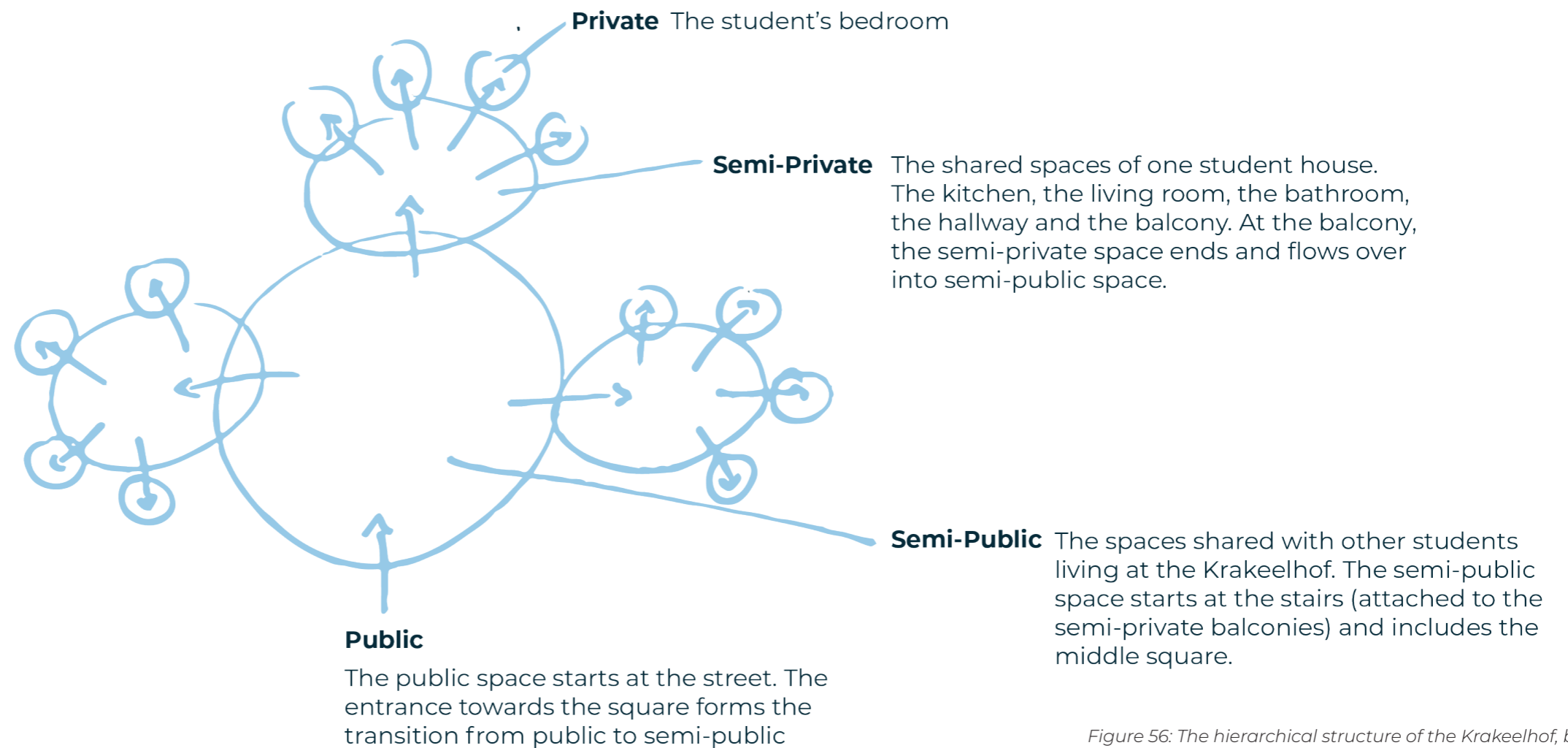


Figure 56: The hierarchical structure of the Krakeelhof, based on hierarchical theory by Oscar Newman (1973)

8.3.1 The Krakeelhof in 2040

This paragraph presents the concluding advice on how to rebuild the Krakeelhof by 2040 to stimulate social contact. Figure 57 visualizes the change for the ground plan. A: Gives an idea of the current surface area of the property. B: More clearly shows the position of the buildings/trees in this area. C: Visualizes the new idea for the floor plan. D: Solely shows the floor plan for the buildings to see how the spaces in between the buildings form.

The concluding advice:

1. Keep the balconies, so students face each other from their semi-private space
2. Keep the shared housing as an effective remedy against isolation. But vary groups in sizes. Not solely groups of 16-18 people living together. As *'There is no such thing as the average student'*. Students want a range of diverse group sizes.

3. Narrowing the square space in the middle to create shorter distances between the facing balconies
4. Opting for a few smaller squares. The smaller clusters help create more intimacy between students. It becomes possible to host even more than 569 students in total, but at the same time keeping the cosy atmosphere.
5. The canteen and workshop revival. Create a common space (with many windows so everybody can see what is going on inside) in the middle of the property (pink part) where students can work together and share a meal. Ideas: think of a maker space in collaboration with the TUDelft and a food court providing cheap meals for students.
6. Keep the single entrance (dark blue part). It forms the clear transition from the public space (the street) to the semi-public area and provides a feeling of belonging. Already when entering the semi-public property, the students feel the sentiment of 'being home'.

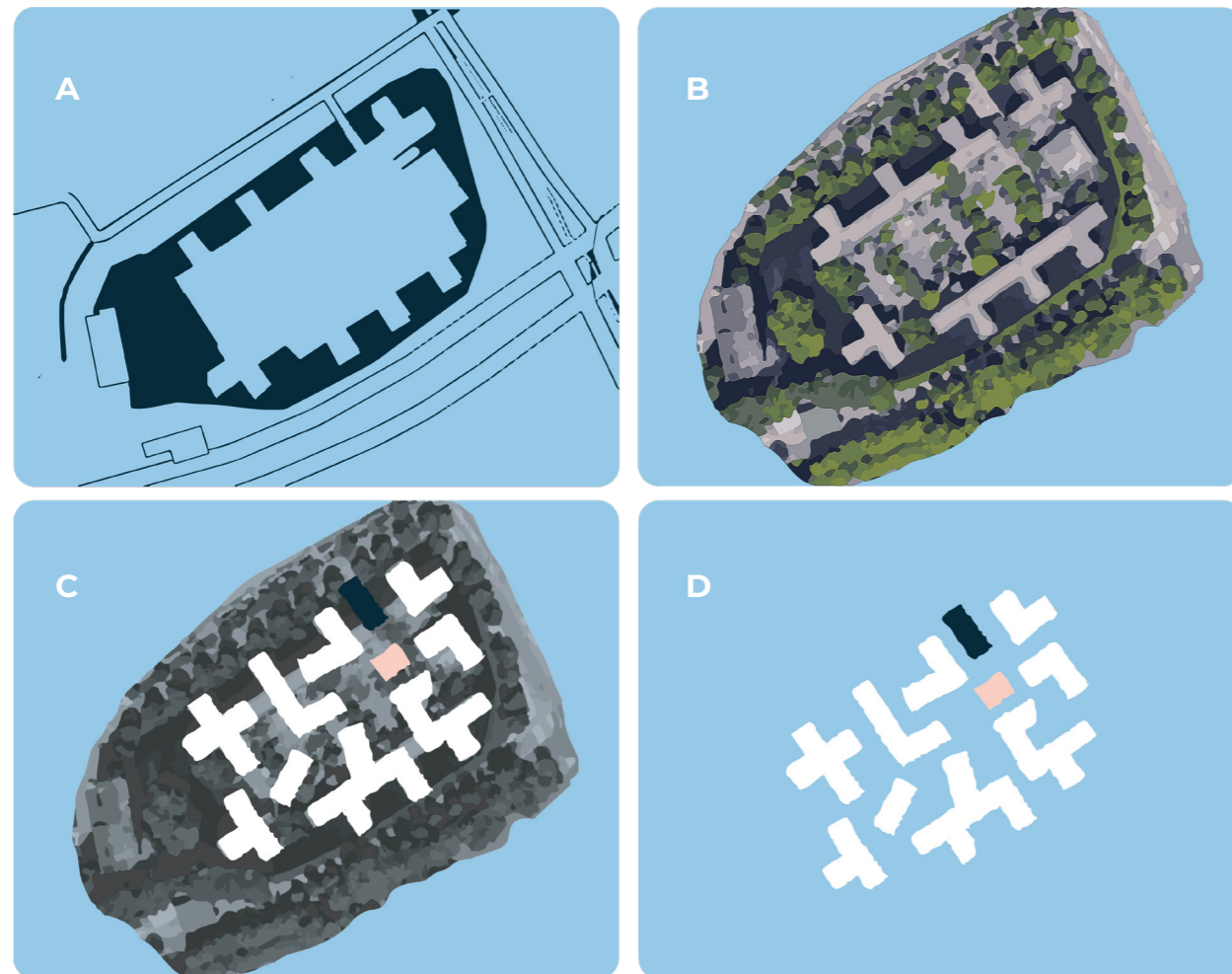


Figure 57: Visualisation of ground plan for the Krakeelhof

8.3.2 Additional housing considerations

Next to the architectural structure, DUWO can also promote social well-being through facilitating flexibility.

In 2040, semi-public spaces provide room to be used in different ways (relaxing, studying, dancing, meditating, eating etc.) without restricting the students to reserve the room before use. It improves the likelihood that students will consistently use the spaces and therefore (again) stimulates social contact.

DUWO can enhance flexibility via the provided facilities in semi-public spaces. First of all, through ensuring the furniture can easily be moved around to the students' liking and intended way of use. Furthermore, by providing some other facilities like games or a music system which already creates more possibilities of use. The living room of the sports and culture centre X can function as an example. But above all, it is advised to let students decorate the room together as described at point three.

DUWO also facilitates flexibility in terms of managing the property. As students will not have to reserve the space before use, it indicates DUWO is placing trust in students that they won't demolish the room and leave it tidy enough to their liking. This point links back to chapter 7.1 on the core values of student living. Leave room for freedom and creativity.

Thirdly, DUWO creates the opportunity to (re) decorate public rooms so students can make those their own. As described in chapter 6.1 on community building, this helps create a stronger feeling of belonging. Herewith supporting community building. Besides, the honour students get from decorating the room impacts the attractiveness of the community, therefore also supporting community building.

8.4 THE STUDENTS' PERSPECTIVE

Students living in a DUWO building do no longer need to worry about their social well-being. The affordable and sustainable complex they live in breathes the possibilities for social interaction, yet at the same time respects the need for personal space. The transition from private to public is well thought out, to make it as gradual as possible. Herewith, giving a greater sense of belonging to the areas outside of the private space (as explained in the sixth topic of subchapter 8.3). But if you, as a student, feel like something should change inside your building, or you have a great initiative you want to make a reality, the participation platform can support you in any way possible. It easily navigates you to the intended functionality. Furthermore, DUWO monthly proposes statements relevant to your living situation to hear your thoughts. It is up to you as a student to decide what statements you want to contribute.



9 EVALUATION

This final chapter presents the conclusion of this project by answering the initial research questions. Furthermore, it summarizes the insights given when validating the design outcomes. Thirdly, the chapter discusses the limitations and further recommendations. To conclude with a personal reflection to evaluate the whole project (process) from my point of view.

9.1 ANSWERING THE RESEARCH QUESTION

This project started with the following research question: *How can DUWO contribute to the better well-being of all students in the future?* This research question was accompanied by the following two sub-questions: 1. *What are the upcoming trends in student housing?* & 2. *How does community building affect student well-being?* But during the project, these questions have evolved into the following project challenge: *How can DUWO support social relations between students living in the same building and get a better understanding of students' needs, to be able to design for those needs and support social well-being?*

During this project, the focus has shifted to these social relations as research shows it's the valuable relationships in people's lives that make people happy and have a strong positive influence on their overall well-being. So, to answer the challenge: ***DUWO has to promote social interaction, social contact, as that is the first step towards valuable relations.*** For DUWO, the most direct influential way to support social interaction is through architecture. As architecture can promote and inhibit social contact. Chapter 8.3 presents how to promote social contact, where the Krakeelhof in Delft illustrates the advice.

Besides, ***DUWO has to become more continuously aware of the varying students' needs.*** Those needs differ per student/per moment in time and link directly to how they feel. To become more aware of those tacit needs, DUWO can start to gauge the students' opinions on all (to them) relevant matters. As presented in chapter 8.2.1, DUWO can do this via a poll in the DUWO app. To get a more in-depth understanding of those needs, DUWO has to organize discussion/brainstorm evenings where students (who have a strong opinion on the matter) can express their thoughts.

Lastly, for DUWO to contribute to student

well-being more proactively, things need to change internally as well. Instead of solely focussing on affordability, availability and (slightly) sustainability, ***there should be an integrated focus on student well-being.*** This integrated focus, which pays more attention to, and is more aware of the needs of students, changes how DUWO structures its business and designs new buildings.

9.2 EVALUATING THE DESIGN OUTCOMES

This paragraph addresses how I evaluated the design outcomes and how these evaluations have changed the future vision.

Method

A selection of people was carefully made to evaluate the design outcomes of this project. Based on their background, a different design outcome was discussed.

Participants

- One student living at the Krakeelhof, to evaluate the ideas for the DUWO app and the design for the Krakeelhof in 2040
- International student renting with DUWO to evaluate the ideas for the DUWO app
- Two Dutch students renting with DUWO to evaluate the ideas for the DUWO app
- One employee of DUWO working on the DUWO app to evaluate the ideas for the app
- One employee of DUWO working on the current renovation plan for the Krakeelhof to evaluate the design for the Krakeelhof in 2040

The DUWO app

All of the students mentioned they liked the idea of the statements in the DUWO app to gauge the students' opinions. Furthermore, they all indicated they prefer to solely see statements that apply to their living situation, as they would only have a clear judgement on those matters. This preference again confirms that students reason from a present/personal perspective rather than a future/collective perspective as mentioned in chapter 5.1.

The student living at the Krakeelhof mentioned that she liked the ideas of the statements, as it gives an idea of the overall needs of students, but that it does not provide the complete answer. As DUWO is the one designing the statements, they are already directing/seeking certain answers. So it is essential to remain receptive to the unspoken needs. Furthermore,

DUWO has to try to incorporate students in defining the topic for the statements and (as mentioned in chapter 8) has to hire a sociologist to carefully formulate those statements and be aware of how the overall process might affect the students' answers.

All students believe it is a good idea to present policy information at one specific location inside the app. They want the information to be quickly accessible whenever they need it. They want to access the information themselves instead of being overloaded by emails. Emails they usually forget about and later do not find back. The discussion about the information supply from DUWO also resulted, for three students, in the wish for a specific building calendar. This wish is in line with the planned ideas for the DUWO app. Students have this wish for a building calendar because they can quickly access it and see if maintenance is scheduled in the upcoming month and, if so, how long it will take. The building calendar can also show when a student initiative (say a complex BBQ) will happen and when the exam periods are (and students expect each other to respect some quiet time). Lastly, it can become the perfect spot for DUWO to update students on non-personal repair requests, such as fixing the elevator.



Figure 58: Evaluation session with a student

Furthermore, all students mentioned some more practical tips on how to improve the ideas for the application.

- They all would like to see a link to a page explaining the intention of the discussion evening (preferably with images) before actually signing up. This tip is now integrated into the final design, as students can click on more info. Before, it was unclear to the students what would be expected from them once they tick the box depicting “I would like to think along and partake in a discussion about this topic”. The “more info” page will briefly explain what the process will look like (after ticking the box) and how DUWO structures the evening itself.
- One student mentioned she would like to see a send button so she can decide when to send her final answer to the statement to DUWO.
- One student would like to immediately see the topic of the statement on top of it to be triggered to answer. Furthermore, she had the idea to mark different topics with different colours. By doing so, you immediately notice when there is a new statement to answer. However, it might be better to stick with one style to ensure students immediately identify the statement part of the app. To conclude on the best workable system, DUWO has to test different layouts to see what works best.
- One student mentioned she would like to click the statement away if she has no opinion about the matter. This comment resulted in a new iteration for the final design. The statements now always contain the option to answer: I do not have a clear opinion about this topic. When selecting this answer, you can make the statement go away yet still actively show DUWO that you do not have a clear answer. Future tests have to investigate how long one statement can remain on the starting page and if there should still be an actual cross depicting that you can close it.

The employee working on the DUWO app likes the overall vision. She believes it to be in line with the things the app team has thought of to implement. She especially likes the idea of proactively asking students about their opinions via the statements.

Yet, her main concern for this design outcome is: how are you planning to organize it? How would this be integrated into DUWO’s way of working? & Who will be responsible for formulating, posting and analyzing the statements?

Furthermore, she is surprised to see the read policy functionality as part of the app. But then immediately mentions that there probably will be students interested in reading it. Yet, she addresses the practicalities again of how this could become real.

“By making it very transparent, you also make the customer a lot more critical. A manager, a rental employee or whoever the students get on the phone will also have to know what it is about. This is difficult in this organization because we consist of different locations, all kinds of things happen, and everyone is very good at their own thing but not always aware of each other. So that is quite a challenge you put there. I think it is a very good one because it tightens the lines within our organization. You have to make sure that people can respond, be informed and understand what it is about. I think that is our biggest challenge if you were to introduce something like this.”



Figure 59: Two evaluation sessions with students

Rearranging the internal way of working will indeed be the biggest challenge to ensure the whole idea of more student involvement will become real. This comment, at the same time, also shows the hands-on mentality of DUWO. Yet, this entirely new way of working does not have to be implemented today or tomorrow. But how to properly prepare the company for this transition is still something that needs to be researched further (see 9.3 recommendations).

The design for the Krakeelhof in 2040

Together with DUWO’s current employee working on a renovation plan for the Krakeelhof, I have evaluated my design for the Krakeelhof in 2040. In general, she liked my design vision. First of all, she was sceptical if this vision would be realizable. The realization is always up to the agreements made together with the municipality of Delft. To make it more achievable, she advises reusing the current buildings to save some money. But when I told her it is a vision for 2040, aiming to improve student well-being, she started to assess the idea differently. This initial reaction again indicates the pragmatic and hands-on mentality of DUWO.

According to her, this idea could improve the already existing social vibe at the Krakeelhof. She sees especially value in the revival of the common space, which could function as a meeting point for students. Furthermore, she agrees with the theory of gradual hierarchy, which can indeed contribute to a feeling of safety. Yet, advises rethinking the properties of the semi-private and semi-public spaces as the living room is too small for 18 students regarding the current standards.

“The layering you are talking about is very nice. I only think that the sizes of the living room and the kitchen are no longer completely in proportion.”



Figure 60: Evaluation session at the Krakeelhof

“It is because you are on this island that you feel safe. The students are your friends, whether you know them or not, you are there with a common goal, and I think that makes you feel safe.”

Thirdly, she points out the functioning of the building. That, regardless of it being so old, students still love to live there and that we all should learn from a complex like the Krakeelhof and let it inform new designs.

“For such an old building, it still functions well. We can draw much more lessons from the Krakeelhof. Let it be an example for designing new complexes.”

The student living at the Krakeelhof, who is at the same time an architecture graduate student, also sees value in the redesign. She also points out the liking of the hierarchy theory, which she refers to as the different steps. Because of this reasoning, she also likes the idea of the smaller squares.

“That’s also almost like taking the layout of the interior into the exterior. It would be nice to have actual facing balconies”

About the fact that the cars would then need to disappear, she simply mentions: “But that’s kind of like the direction in general, the way things are moving now.” And that it is therefore okay to happen. She has the same sort of comment about the intended varying group sizes. Although she likes the experience of living with 16 people, she admits that it is not for everybody and that (from a co-living) perspective it makes sense to vary the houses in sizes. Furthermore, she advised me to highlight the circulation aspect of the stairs/balconies. Because in those circulation areas, which are indeed semi-public, people have easy-going interaction with others. If the stairs would be semi-private instead, this would directly reduce the amount of interaction.

9.3 LIMITATIONS AND RECOMMENDATIONS

This chapter discusses the limitations of this project's process and further recommendations for next steps to implement the design outcomes as presented in chapter 8. Because, when DUWO wants to implement the complete future vision, it will encounter some limitations that were not addressed during the project, as they are considered outside of scope.

The political point of view

This project only briefly addresses the political scope. The research part of the project highlights how DUWO is advised and controlled by all the different parties (which are in turn controlled by the Dutch government). But the final future vision leaves out the political point of view as my educational background doesn't equip me to advise on political matters in this kind of detail. The focus lies on the design outcomes and the aim to present a future vision that depicts an ideal scenario. The real emphasis lies on how, from a well-being point of view, things should be. So for DUWO to implement this future vision, DUWO still has to determine if/how it matches the political rules and expectations or if the political construct needs to change.

Covid-19

This project took place during the Covid-19 pandemic. A substantial part was, therefore, carried out online. Although I had the opportunity to be at the DUWO office, all interview appointments and group discussions were arranged via mail and held online. This online element complicated the process to spontaneously meet up with people and get inspired from each other. As a result, mainly Master students were interviewed, as they were easier to reach. Also it is necessary to interview more students currently living at the Krakeelhof. Furthermore, it would have been more effective to see how DUWO operates when everybody is at the office and how the future vision aligns with those daily processes.

Internal processes

To scope the project, but also due to Covid-19, this project solely focuses on DUWO Delft and not the other locations. It would have been interesting to see how the corporation

works as a whole. How the different offices communicate with one another and how to match the future vision accordingly. Especially for the pathway about changing the attitude towards the internal policy and preparing all employees to communicate with more critically equipped students, it would be wise to investigate how this would play out throughout the company.

The broader context

For this project, the focus lies on the well-being of the students and how DUWO can actively improve it. But it would be interesting to investigate how the future vision would affect the other housing sectors. Would it also positively change their tenants' well-being? Furthermore, it would be wise to look at the future of student-living more in general. For now, I briefly addressed the most compelling trends in student housing from the well-being perspective. But what would be the overall future of student living? What if we, for example, start looking from an economic/legislative perspective? In short, I would recommend broadening the project scope and investigating these two aspects.

The DUWO app

This project proposed the idea to present statements in the DUWO app (as presented in chapter 8) to investigate the needs of the students. However, there was only one iteration for this concept based on the evaluations presented in chapter 9.2. due to the project being focussed on the overall future vision for DUWO. For optimal functioning of this part of the application, I would recommend a few cycles of testing and evaluating. Zoom in on the interaction aspects and experiment with how to present what kind of statements, to discover the preferred style of the students. Plus see how to get as many students involved as possible to make sure answers give an inclusive image. Furthermore, more research needs to be done to see how to best integrate the whole functioning of the app into DUWO's daily way of working. See who would be made responsible for updating the statements, processing the answers and planning the discussion evenings.



9.4 PERSONAL REFLECTION

This personal reflection will reflect on past experiences of this graduation project and, based on those, describe what I believe is the perfect project for me as a Strategic Product Designer. What type of design process best fits me and why. I will summarize for which sort of design process and which topic I believe I am the best candidate, and at the same time also discuss what my points of improvement are. These insights will guide me during my professional career and hopefully inform future Strategic Product Design students to thrive in societal projects like these.

First of all, it became (again) extremely apparent that I value the first part of the design process, the first diamond. During this part of the project, I thrive. I carefully construct my research phase, where I focus on deepening the challenge at hand and search for the real question behind the question. I first want to map the whole context, see who is all part of it, and how these people communicate with one another. To do so, I want to speak with as many different people as possible, as these first conversations immediately give an idea about potential tensions. At the same time, I try to find and combine literature research insights from (mostly) psychology and sociology (as I always chose social topics) to determine the design aim of the project and formulate the new challenge. My weakness concerning this first project phase is that I cannot comfortably round it off and decide it is time to proceed to the next phase. There is always new information coming your way, which can further deepen the challenge and broaden the context, which I always feel I still need to take on. By taking on this extra material, I make it hard for myself to move on. I even start looking for this new information myself and keep asking myself questions instead of formulating design requirements. On the other hand, my strength is that I can cleverly combine various findings and compose new sincere insights from the complexity at hand. I am good at revealing and pointing out the sore spot.

Looking back at this whole situation, I have experienced that I had to adjust to working alone again. During the Master of Strategic Product Design, I got honestly comfortable

working in teams, where I (ironically) would always take on the role of the team manager. I would be the one creating the planning and setting milestones. So I know how to plan a project and make sure everybody likes doing his task and thrives doing so. But it seems that I also needed them to push me. They needed to tell me that according to my planning, it was time to move on. And if I now am genuinely critical about myself, I also needed them to tell me the work is good enough. Because I will never believe it is good enough, as I am always so aware of what still can be done and of what is the new next step. I have to start embracing that there is always limited time and that all the insights you find during that time are already valuable, that it is okay to stick to the schedule and leave some things unattended. So for future projects, I intend for myself to stick to the planning and document all the things I decide to leave unattended. This list can form the basis for new projects, depict the complexity of the whole situation and triggers the discussion.

Zooming in on this specific graduation project, the hardest part for me was to keep focusing on the future of student living. I wanted to create value for the client. I was aiming to align a future vision with their current way of working. As stated in my project brief, I wanted to incorporate the more pragmatic business outcome in my design vision. Yet, the client turned out to have an extreme hands-on focus, a mentality of what can I do now to make this work. Looking at tomorrow already felt far away. To think about 2040 again, I had to take myself out of their context. I had to feel the freedom, the envisioning ability of the industrial design students again. By consciously examining these past experiences, I notice now that I felt stuck at some point and that this feeling of being stuck for me points out the right moment to move on. To take me out of the context that I so carefully had explored and put myself back into the designers' role. If you feel stuck, it is time to let go of the things you have been doing, formulate design requirements and start envisioning a world that you as a designer would like to see. In the end, there will be time again to link it to today, but do not try to do this immediately. Give yourself the

freedom to be creative, explore and trust the process. For me, it then always helps to place myself in another environment.

To summarize, the perfect project for me is a complex social design project where I preferably can work in a team. Facets that I believe need to be in place in a design project for a Strategic Product Designer to thrive are: Being able to speak freely with various people (at different ranks) related to the context; Having access to policy documents; Getting the freedom to work from distinct places.

During this type of project, my goal would be to discover all hidden tensions, formulate clear new insights and create a vision that functions as the first steps towards a new understanding of this social domain. I would spark a new way of looking at things and trigger the discussion.



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Appendices

APPENDIX A

Approved Project Brief & Timeline



Personal Project Brief - IDE Master Graduation

Student housing in 2040: A vision for housing corporation DUWO _____ project title

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date 08 - 02 - 2021 _____ 08 - 07 - 2021 _____ end date

INTRODUCTION **

Please describe, in a concise yet complete manner, the context of your project, and address the main stakeholders (interests) within this context. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money,...), technology, ...).

DUWO is the largest student housing corporation in the Netherlands and is active in Amsterdam, Leiden, The Hague, Delft and Deventer/Wageningen. Student population numbers are increasing, so it is likely to say the corporation will only grow, and the student housing shortage will increase. The corporation strives to contribute to the best time of a student's life by offering suitable and affordable housing for both Dutch- and international students.

The corporation manages to build real-estate that is used for 50 years or more by creating unique and prestigious student buildings such as the Krakeelhof in Delft, housing over 500 students. To continue developing similarly successful projects, the corporation needs to stay ahead of its time, act innovative and always meet governmental regulations on housing, safety and sustainability. It is a challenge to balance all the different interests of both the corporation, government and the students. An opportunity here is to explore the wishes and expectations of student housing in the future to keep on building new innovative/successful student buildings that contribute to the student's mental wellbeing.

space available for images / figures on next page



Personal Project Brief - IDE Master Graduation

introduction (continued): space for images



image / figure 1: Krakeelhof Delft. Photographer Kees Bommele. Source: Delft op Zondag, Dec. 2019



image / figure 2: Balcony Krakeelhof. Picture from Kamernet. Edited by Hannah Keulen, Jan. 2021

PROBLEM DEFINITION **

Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

As the world is ever-changing, and DUWO wants to stay ahead of its time, the corporation requires a future vision on student housing. To create this future vision three different perspectives need to be investigated. The perspective of the government/society, of students and of the corporation itself. What are their aspirations, beliefs and wishes? The future vision derives from the research question: "What are the (upcoming) trends in student housing, and how do they affect students' mental wellbeing?"

The sub-question, related to this research question, will be: "How does the formation of communities affect the student's mental wellbeing?" Herewith investigating the effect of shared versus independent housing. To illustrate the future vision, the Krakeelhof in Delft will function as an example. How will this vision translate into a specific building? What aspects need to be in place to make it a unique and innovative complex that students will use for over 50 years?

ASSIGNMENT **

State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

Design a future vision on student housing for DUWO based on the current trends, with a focus on the effect of living situations on a student's mental wellbeing, and develop a concept scenario for the Krakeelhof.

I will design a future proof vision for DUWO that helps to visualise a concept scenario for the future of the Krakeelhof in Delft. To find this vision, I will research the (upcoming) trends in student housing. Herewith, focusing on the opinions of the governments, students and corporations. Next, I will explore the effects of living situations on a student's mental wellbeing. How can we contribute to a better mental wellbeing of students? And more generally, how can DUWO contribute to the best time of a student's life in 2040?

I will use the double diamond method for my research, whereas the first diamond focuses on exploring student housing and ends with a formulated concept future vision. Translating this future vision into a scenario concept for the Krakeelhof is focus in the second diamond.

PLANNING AND APPROACH **

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date 8 - 2 - 2021 end date 8 - 7 - 2021

Week number	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Date on Monday	8 Feb	15 Feb	22 Feb	1 Mar	8 Mar	15 Mar	22 Mar	29 Mar	5 Apr	12 Apr	19 Apr	26 Apr	3 May	10 May	17 May	24 May	31 May	7 Jun	14 Jun	21 Jun	28 Jun	5 Jul
Week count	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Amount of days working	5	4	5	5	4	5	4	4	5	5	4	4	4	4	4	4	5	5	5	5	5	5
Introduction at DUWO																						
Literature research																						
Interviewing																						
Select relevant solution spaces																						
Creative sessions																						
Design for vision																						
Etography study at Krakeelhof																						
Literature research																						
Test different scenarios																						
Development design																						
Test final design																						
Conclude and report																						
Meetings																						

See the picture enlarged on the next page.

APPENDIX B

Tables prognosis student housing shortage Annual report 2020 DUWO

Prognoses aantal studenten en uitwonende studenten tot 2028

gemeente	groei aantal studenten 2020-2028		groei aantal uitwonende studenten 2020-2028		groei SSH-studenten
	trend	corona-scenario	trend	corona-scenario	
Amsterdam	6.900	4.942	7.431	3.899	255
Delft	4.840	3.712	3.598	2.323	20
Den Haag	1.460	606	1.689	173	250
Leiden	2.750	2.812	1.738	1.337	75
Haarlem	-360	-294	-82	-126	-
Almere*)	330	330	85	85	25
Deventer	-940	-881	-214	-264	20
Wageningen/Ede	1.680	1.213	1.595	983	65
DUWO	16.660	12.440	15.839	8.410	710

*) cijfer corona-scenario onbekend, gelijk gehouden aan trendscenario

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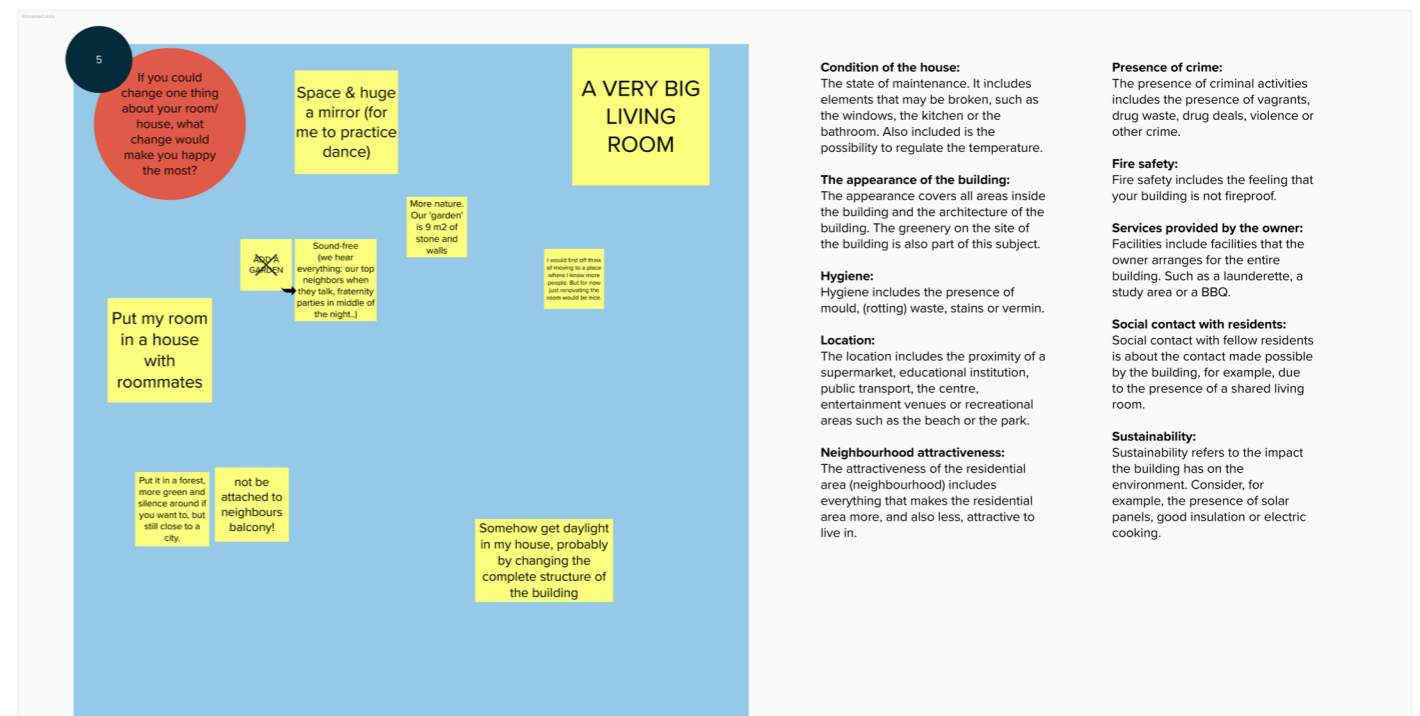
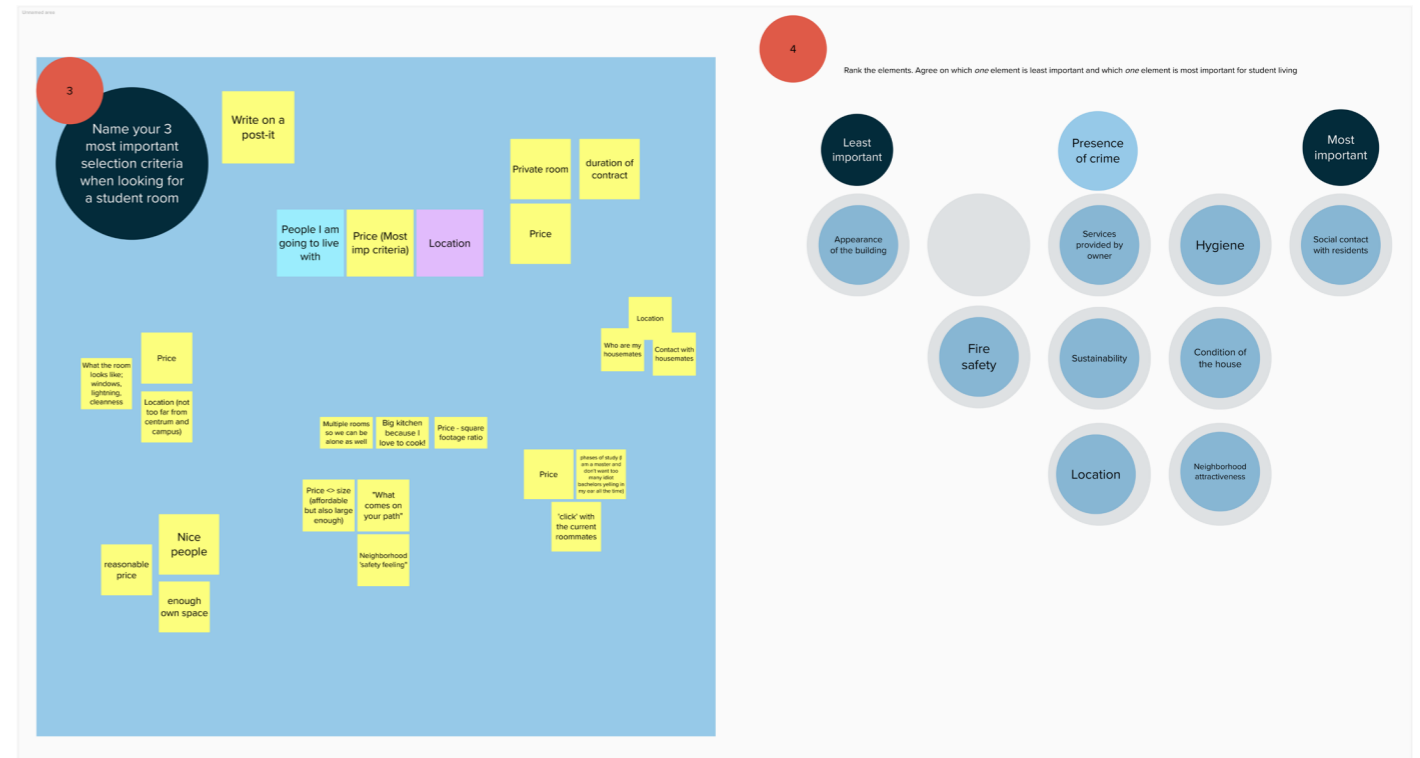
Potentiële uitbreidingsbehoefte studentenhuysvesting in werkgebied DUWO

gemeente	uit aanbod	in exploitatie sinds maart 2020	potentiële uitbreidingsbehoefte 2028		project in uitvoering/ontwikkeling		resterende potentiële uitbreidingsbehoefte	
			DUWO	trend	corona-scenario	DUWO	derden	trend
Amsterdam	2.500		15.386	11.854	933	8.166	6.288	2.756
Delft	471	22	5.567	4.292	136	1.500	3.931	2.656
Den Haag	47	90	2.996	1.480	929	863	1.204	-312
Leiden		52	4.011	3.610	291	1.282	2.438	2.037
Haarlem			258	214	251		7	-37
Almere*)			260	260	514		-254	-254
Deventer			107	56			107	56
Wageningen			975	363		1.052	-77	-689
DUWO	3.018	164	29.558	22.129	3.054	12.863	13.642	6.213

Living career insights

First student house/room at the age of:	The amount of different locations I lived:	Why I left my parents' place:	The amount of roommates I currently live with:
17	7	to study and prepare for competitive exams	left blank
18	4	Going to college (including housing)	0 (misses living with roommates, but isn't actively looking for something else)
18	6	Start studying in a different city. Couldn't travel back and forth each day	1 (Boyfriend)
18	1	Wanted to experience the real student life and living on my own	8
19	5	Wanting to be closer to friends and the university	4
18	4	Did not want to miss out on anything by travelling each day even if it is only from Rotterdam to Delft	1 (Boyfriend)
19	2	Did not want to travel and did want to join a student association	3
19	2	No more travel time	0 (wants to live with roommates, is quite actively looking for something else)
18	5	Wanted to live in a student house and did not want to travel such distances each day	3
18.2 Years old	4 Houses	6/9 travel time 3/9 Fun student life experience	4/8 Private housing (50%) 4/8 Shared housing (50%)

Living career of two international students (blue), seven Dutch students, my personal situation (orange) and the total result



Condition of the house:
The state of maintenance. It includes elements that may be broken, such as the windows, the kitchen or the bathroom. Also included is the possibility to regulate the temperature.

The appearance of the building:
The appearance covers all areas inside the building and the architecture of the building. The greenery on the site of the building is also part of this subject.

Hygiene:
Hygiene includes the presence of mould, (rotting) waste, stains or vermin.

Location:
The location includes the proximity of a supermarket, educational institution, public transport, the centre, entertainment venues or recreational areas such as the beach or the park.

Neighbourhood attractiveness:
The attractiveness of the residential area (neighbourhood) includes everything that makes the residential area more, and also less, attractive to live in.

Presence of crime:
The presence of criminal activities includes the presence of vagrants, drug waste, drug deals, violence or other crime.

Fire safety:
Fire safety includes the feeling that your building is not fireproof.

Services provided by the owner:
Facilities include facilities that the owner arranges for the entire building. Such as a launderette, a study area or a BBQ.

Social contact with residents:
Social contact with fellow residents is about the contact made possible by the building, for example, due to the presence of a shared living room.

Sustainability:
Sustainability refers to the impact the building has on the environment. Consider, for example, the presence of solar panels, good insulation or electric cooking.

6 Closing - A final round
What do you still want to say?
How do you think students live in 2040?

What topics become important?

What negative trends to watch out for?

APPENDIX D

Interview guide student interviews

EN

1. Describe your living career as a student in the Netherlands?
 - What homes did you live in?
 - For how long did you live there?
 - What was your first student home?
2. Why did you decide to live there (first home)?
 - What attracted you?
 - What were you looking for in a home?
 - In case of necessity: How did you get the room?
3. Why did you decide to move out?
 - What were you looking for?
4. If you could change one thing about your current living situation, what would it be?
 - Do not think about budget/architectural/social constraints
 - There are no restrictions!
5. What makes an ideal roommate?
 - In terms of behavior?
 - Certain characteristics?
 - Attitude?
6. In case of 'instemmingen'
 - How do you select a new roommate?
 - Do you have specific rituals?
 - Are there certain questions you ask each other to select a new roommate?
 - When do you 'know' a new person will fit the group?
 - Do you envision specific situations?
7. What is *home* for you?
 - What does it feel like?
 - When do you feel at home?
 - What are important elements to make something feel like home?

NL

1. Beschrijf je wooncarrière als student in Nederland
 - Op welke plekken heb je gewoond?
 - Voor hoe lang?
 - Wat was je eerste studenten thuis?
2. Waarom besloot je in dit eerste huis te wonen?
 - Wat trok je aan?
 - Waar was je naar op zoek in een huis
 - Indien noodgedwongen: hoe kwam je aan de kamer?
3. Waarom besloot je dit thuis weer te verlaten?
 - Waar was je nu naar op zoek
 - Waarom matchte het niet meer?
4. Als je aan je huidige huis 1 ding kon veranderen, wat zou het zijn?
 - Sta niet stil bij de praktische restricties. Alles is mogelijk!
5. Wat is voor jou de ideale huisgenoot?
 - Welk gedrag vertoont deze huisgenoot juist wel of niet?
 - Heeft deze persoon bepaalde karakteristieken?
6. Indien er instemmingen zijn voor dit huis: Hoe selecteren jullie een nieuwe huisgenoot?
 - Zijn er bepaalde rituelen?
 - Zijn er specifieke vragen die jullie elkaar onderling stellen?
 - Op basis waarvan zijn jullie meestal overtuigd dat een nieuw persoon erbij past?
 - Zie je bepaalde situaties voor je bij het kiezen? (bijv. hoe zou je het vinden als je 's ochtends met diegene aan de keukentafel zit)
7. Wat betekent thuis voor jou?
 - Hoe voelt thuis?
 - Wanneer voel jij je thuis?
 - Welke elementen zijn belangrijk om je thuis te voelen?

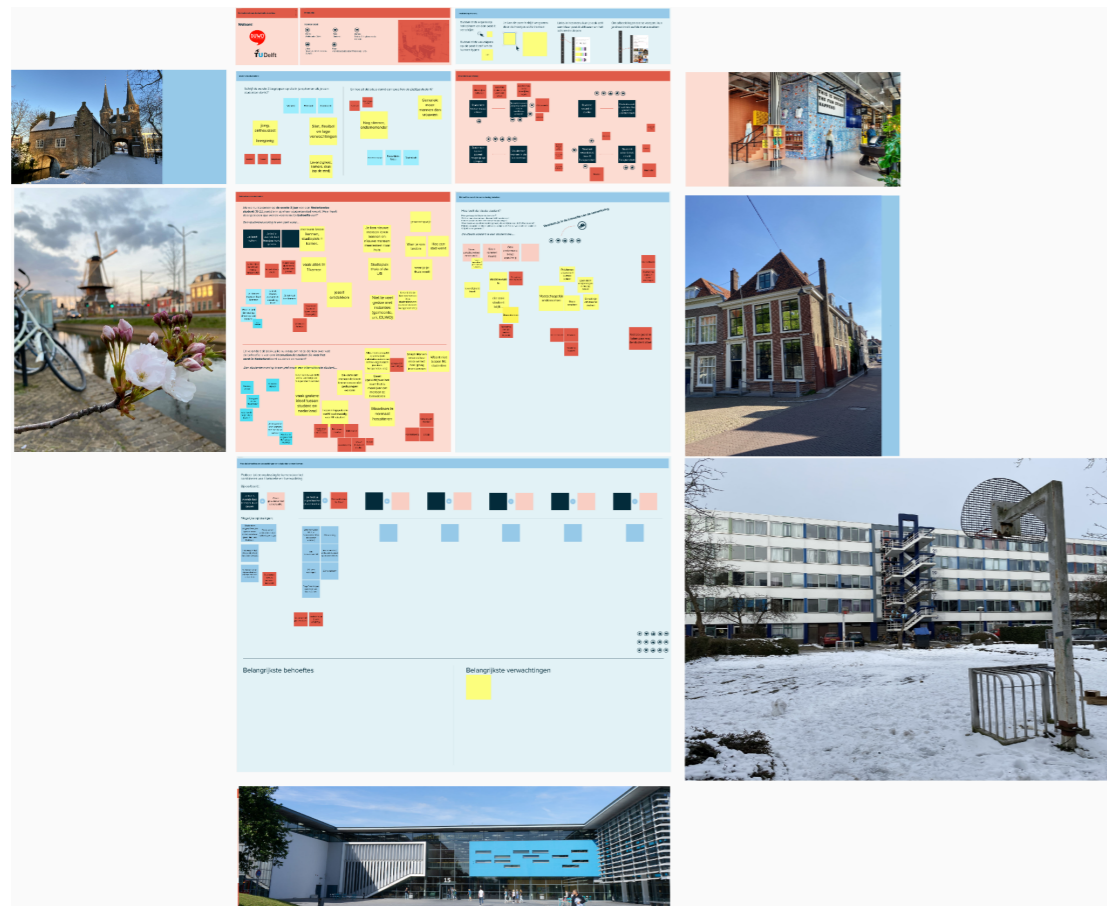
APPENDIX E

Creative online session with experts Detailed description

The reason to initiate this creative online session was to get an insight into the challenges these experts of student housing face and how they envision the solutions to both their challenges as the dilemmas raised by this research project.

List of attendees:

- Counselor of Delft - Living, sports and poverty
- Employee policy TUDelft - Logistics, student prognoses
- Area developer at Site
- Employee policy DUWO - Strategic advice on renovation projects
- Master student Design For Interaction



To first get an idea of how the participants see students, they were asked just that. *Which words do you associate with the term student?* This task derives from the flower association technique, where participants are to come up with as many associations with one word as possible (Heijne & Meer, 2019). Here the goal of the exercise was to loosen up the participants and see what first comes to their minds. Therefore, the task was to name three associations instead of as many as possible. And to see if the participants had any other associations when specifically picturing the Delft student, they were again asked to write three associations.

Associated words with <i>student</i>	Associated words with <i>Delft student</i>
Young	Sororities
Freedom	Technical
Enthusiastic	More men
Search	Enterprising
Flexible	Rotterdam-centered
Smart	Even smarter
Low expectations	Prominent
Eager to learn	
Study	
Roommates	
Party	
Student room	
Lively	
Pressure on the city	

Figure 38: Word associations - Expert Creative Online Session

One can conclude these participants have a relatively positive image of students, as most of the answers are positive. The term *low expectations* is meant as a positive association as well, as it refers to the fact that most new students don't know what to expect yet. It's the first time on their own, they don't have any specific requirements, and their expectations still need to be shaped. The solely slightly negative aspect mentioned was *pressure on the city*. As the amount of students, especially in Delft, impacts the overall city experience.

Needs of Dutch students, aged 18-22, living in university's city

A student house/room is a place where...
Getting to know people
Feel at home
Share services
Learn how the city works
Feel welcome
Can get some rest
Experience not much hassle with authorities
Don't feel alone
Everything takes place in the same room
Discover yourself
Like your roommates
Get in contact with other cultures
Low threshold for the (welcoming) commotion
Make friends
Bring new people to your home
Someone (elder roommate) shows you how things work

Figure 39: Mentioned needs of Dutch students - Expert Creative Online Session

The listed needs can roughly be divided into three categories. These categories are in line with the previously presented values of student living.

- Discovery.** You are getting to know your way around.
"As they leave their elderly home for the first time, they need to learn how the whole new situation works for them. How does the TU work? How does the city work? and they need to find their place in it" - Counsellor of Delft
- Homely.** You want to feel safe.
"You hope that the student house, with shared services, becomes home" - Employee policy TUDelft
- Enjoy.** You make friends and there is a low threshold to join a leisure activity.
"You have your room where you can get some rest, but on the other side of the door, you can directly find commotion and enjoy the freedom of student life." - Area developer at Site

The needs of International students

First time living in the Netherlands.

A student house/room is a place where an international student...
Finds his/her way
Makes friends
Wants more knowledge about Delft/TU
Opportunity to get to know people but isn't forced
Everything needs to be arranged (National student prefers to organise it himself)
Learn about Dutch culture
Get in contact with Dutch culture
Get a buddy

Figure 40: Mentioned needs of international students - Expert Creative Online Session

"Yeah, in general, people who come to the Netherlands for half a year... I went abroad for my education as well... You don't want to have to buy your furniture and assemble it yourself. You simply want it to be arranged and be done with it. But if you will live here for a longer time, then it is nice to arrange the furniture yourself. The ultimate solution is if you can choose and lease it" - Employee policy DUWO

Difficulties for international students

In short, the vote-in system in the Netherlands is disadvantageous for international students. But the necessity to find a room is even stronger for this group as the non-EU students are obliged to provide an address to receive a residence permit. Therefore this expert panel believes it is okay to reserve specific buildings for internationals only. Herewith it is crucial to estimate how many international students the TUDelft and DUWO can handle, as the housing shortage only increases, and to discover what their varying needs and wishes are.

The question about the needs of international students triggered an intense discussion as all participants knew examples of international students wanting to live among Dutch students but weren't able to find a room. The vote-in system, which is quite well-known in the Netherlands, turns out to be disadvantageous for the international student. The system allows the roommates (already living in the house) to select a new tenant. In other words, you have to get voted in. But international students often do not get picked. The most heard argument why an international student won't get selected is that the national students prefer someone who speaks Dutch.

"Everything else is already in English. I want to speak Dutch somewhere" - Male student, 26
"I feel more at home when I can speak my mother's tongue" - Female Student, 23
"Speaking English is still hard for me so I won't feel at ease" - Male student, 21

Another argument mentioned a few times during the interviews with students, is that the students prefer a roommate with a kind of similar idea about student life. Someone with a rather similar

lifestyle. So think about their mindset in how they envision the bond with their roommates, how much time they spend together, how often they eat together, where they like to party, how often they like to party, how long they study etc. And as Dutch students are more likely already familiar with the Dutch student culture, they more easily fit the lifestyle. Unfortunately it therefore becomes hard for an international student to find a room. Yet, it is a real necessity for them to find one.

“Non-EU students (this now holds for the UK as well) are obliged to have an address in the Netherlands to receive a residence permit. So finding an address where they can stay is a real necessity for them. However, it is hard to find a room in the Netherlands when still living somewhere completely else. The distance limitation doesn’t allow them to enter the vote-in evenings, and they do not know people around here.” - Employee policy TUDelft.

“Non-EU students more often end up with the more commercial housing organisations and because of this (which is my personal frustration) student housing becomes a revenue model.” - Counsellor of Delft

But as there is a difference in needs among Dutch students, there is a difference in needs among international students. Not all international students prefer to live among the Dutch. Especially when looking at non-EU students from further away, there seems to be a stronger focus on their study and less on getting to know the Dutch culture and wanting to live among them. These usually are the students who already know they want to go back home once they finish their education in the Netherlands. And some love living among other international students. They can discover things together and help each other out. Struggling together is always more fun.

“When looking at the amount of time needed to finish the education program, one can indeed constatate that the non-EU student needs slightly less time compared to the Dutch students.” - Employee policy TUDelft.

4.1.3 Shortage of student rooms

Yet, although it is crucial to map all the student’s different needs and make the houses meet those needs, the actual problem is the shortage of student rooms for both national and international students. And *because* there is a shortage, there will always be a group left behind. Unfortunately, the shortage of student rooms in Delft will only increase.

“As we no longer want people to create student rooms inside regular family-houses, and the policy makes it harder to do so, the Dutch students (who used to live in these rooms) now want to live in the same rooms as the international students. Therefore this policy increases the pressure on the regular student housing market.” - Employee policy TUDelft

To which the counsellor commented:

“As soon as the new regulation is adopted, it is not solely more difficult. It is simply no longer possible.”

“What we see is that the amount of students versus the amount of other citizens is getting out of balance. To find this balance, we now aim to freeze the existing housing distribution and prevent splitting of houses/creating student rooms inside regular family houses. Furthermore we have to broaden our scope to TU Campus, but also Schiedam and Rijswijk for example.”

“But we do need to be careful with where we build on campus. Take the problem we had for example with the building on the Stieltjesweg. Here used to be a research setup that made a

lot of noise, which was well known by the investor. Yet they built the student flat anyway and students started to complain because of the noise. It cost the TUDelft a couple of million to move it, which is a lot of money you prefer to spend on staff/research itself.

4.1.4 Dilemmas on Friday

The following two dilemmas were presented to trigger new discussions. Participants had to choose sides. So the conversation starts rather black&white, yet along the way, more nuances come into play.

Dilemma one: how to distribute students		Dilemma two: group size	
Students live next to each other	Students live among other population groups	Student houses with a maximum of nine people	Student houses with a minimum of ten people

Figure 41: Dilemmas - Expert Creative Online Session

The first dilemma

Students living next to each other versus students living in between other population groups.

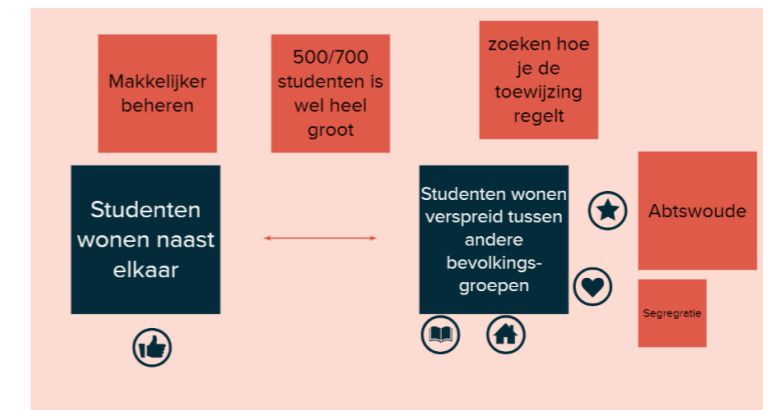


Figure 42: Dilemma where students live - Expert Creative Online Session

To find the right balance between the larger student complexes/smaller houses and where to locate those *and* herewith respecting the current policies regarding student housing is not an easy job. This becomes even more difficult taking the overheated housing sector into account. The best advice there is to give: stay in close contact with the students and remain as flexible as possible.

Why it would be better to put students together:

“To manage student houses in between houses of other population groups is a nightmare. Eminently when the destination plan from the municipality is unclear. The only thing you put your time and energy into is moderation. People only seem to think of solutions that do not work, as the only solution is to split up these groups with different needs. And as more money goes to moderation, less will be available to build new affordable housing.” - Employee policy DUWO

Yet, if students are to live in larger groups together, this stimulates segregation.

"I do not think it is ideal to form these separate islands. Because if people do know their neighbours, it is easier to discuss irritations and respect someone else's needs." - Master student Design For Interaction

So this panel concluded that one should find a balance. Preferably, younger bachelor students get to live together in larger groups. Whereas, Master students get to live in smaller groups among other populations. Herewith it is the key to carefully consider the size and location of the larger student complexes.

"If you put all the students of Delft together, they would form a whole town. Before you know it, people put a fence around it, and you created an enclave. We should balance the larger student complexes a little outside the city and student houses in the city centre. Maybe the Bachelor students get to live together in bigger complexes, and Masters get to live scattered around the city centre." - Counsellor

"It's about finding the right target group for the right type of living situation. In Leiden, students live together with elderly, and this works pretty well." - Employee policy DUWO

But what is the actual upside of students living among others?

"It is a way for both parties to gain something. To both find a profit. But yes, it has to suit you. So it is indeed about finding the right target group." - Counsellor

The second dilemma

Student houses with a max of eight people versus student houses starting with nine people.

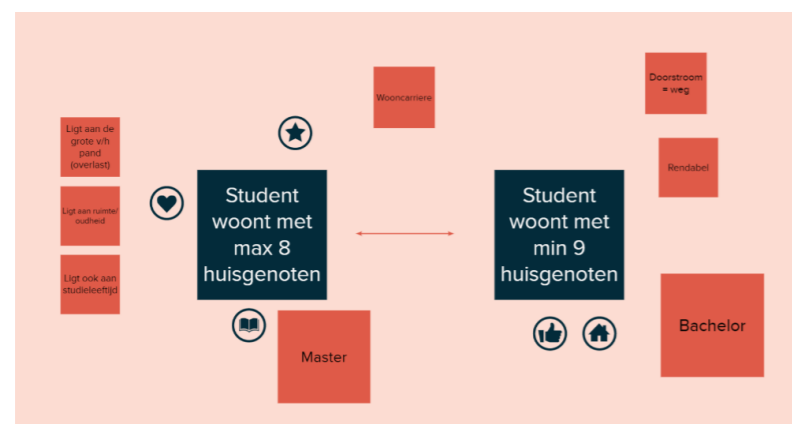


Figure 43: Dilemma group size - Expert Creative Online Session

The discussion that originated from this dilemma tried to answer the following questions. *What do you think of big student houses? And when is a student house considered a big house? And to get a feeling for the ideal group size for what type of student house.*

In short, the advice would be to host Bachelor students in larger groups, more outside of the city centre for example on campus or in an office area. Master students, who usually have a bit more money to spend, get to live in smaller groups or alone in the city centre. Furthermore, the central government of the

Netherlands has to update the policy regarding rent allowance and the housing evaluation system as it is unfavourable for shared housing.

According to the counsellor, the set maximum number of people per house is mainly there to prevent them from creating noise disturbance. And therefore, she believes *the maximum size of the group is directly related to the location of the student home*. So for a house located at the end of the campus, it is okay to accommodate bigger groups compared to a one in the city centre.

Furthermore, the following discussion took place among the younger participants of the session. Although experiences differ, one can again roughly conclude a difference in demand between Bachelor and Master students. Furthermore, the ideal size of the larger groups depends on the bond you want to establish between your roommates and the other needs of the students. Someone might prefer bumping into others now and then for a good chat, yet also likes having his/her own space. For this type of student, large houses of twenty people and having your own bathroom/fridge might be perfect. Whereas others prefer a tighter bond with roommates, where they can eat together every day. Here it is nice to share everything with a relatively smaller group of max ten students.

"For master students, eight people would definitely be the maximum. They prefer smaller groups and more rest. But for younger students, a big house with a vote-in system works super well. Besides, it is easier to build these houses, where more people share the services and students love it (in Dutch: it is gezellig)!" - Employee policy DUWO

"Also, the smaller houses are more expensive to build, and the Master student tends to have a slightly bigger budget. So that fits perfectly. Besides, a Master student has a longer waiting time compared to a Bachelor student and therefore more easily ends up on top of the waiting list for nice apartments." - Employee policy DUWO

"The nice thing about living together with twenty people is that there is always someone in the kitchen. If you live with fewer people, the chance of bumping into someone becomes smaller" - Area developer at Site

"Oh, I had a different experience. At Uilenstede, I used to live with many people, whereas in Eindhoven, I lived in a house with only six others. And my time in Eindhoven was so much more fun! Even though the house in Amsterdam was nice too. So, maybe it is also about the bond you have with your roommates that you all search for the same thing in each other. In Eindhoven, I never had to eat alone, and this was not because we actively arranged it, but it simply worked out each time. Whereas in Amsterdam I ate alone almost every night." - Master student Design For Interaction

"Yes, that's true. If it becomes too big, it can also become very anonymous. So you have to meet in the middle." - Area developer at Site

Private versus shared housing

The comment about Master students wanting to live in smaller houses and Bachelor students in the relatively bigger ones triggered another debate. The debate about private versus shared living. According to the counsellor, the discussion of private versus shared housing got off-track. In her eyes, people shouldn't only focus on what will be newly built but also start thinking of allocating students.

It is a problem that older students won't move out of their shared apartments, hence forcing new students to kick off their student life in a studio.

"At the council, we keep on discussing private versus shared housing, that the balance should become 50-50 again as if the balance is completely gone. However, the balance of the current student housing property is 50-50. Yet, there is no throughput. So if you just recently started studying, it is hard to find a room. We keep on talking about building new complexes, yet actually, we should start discussing allocating students. Curiously, we do so little with it."

So you mean people should move out of shared housing to provide a free spot for a younger student?

"Well, we do have a campus contract to make sure people move out once they have finished their education. You could also think of (although this might be too rigid) dividing Bachelor and Master houses. Maybe this should not hold for everybody, but we have to start thinking about it. Because at this moment in time, we actually should build shared housing, which is extremely hard. Almost impossible. As everybody is making use of the rent allowance system, which makes it more affordable to rent a studio."

But if we only build studios, the deviation will become off...

"Yes, that is true. This is also the result of the housing evaluation system, which is extremely disadvantageous for shared housing. So we keep on mentioning it to the central government "Please do something about this!". Because if nothing changes, and we can already see it happening permanently, people are en masse applying for the rent allowance, which was never the intention."

Okay, but this is an ongoing discussion for over ten years?

"Yes, because all the commercial parties that enter the market make it hard. It is allowed, however, does not happen in the regular social housing sector. In the social housing sector, solely the housing corporations provide housing, which should also be the case for student housing. The most suitable institution should take care of it. People should not make money from student housing."

"DUWO just recently lost the bid from commercial parties in Leiden.." - Employee policy DUWO
 "The commercial parties cannot outbid the DUWOs of this world" - Employee policy TUDelft

"And because of this, we are losing support for the rent allowance. We all make too much use of it at times when it should not be necessary and when one can arrange it otherwise."

4.1.5 The ideal student for society

Is someone who...
Provides liveliness
Is city conscious
Doesn't disturb the neighborhood at night
Is socially responsible + undertaking
No nuisance
Is willing to cooperate
Is open to new policies
Expresses issues (calls DUWO)
Empathizes with others
A feeling for the surrounding environment
Empathizes with other students
Returns a favor
Makes room for younger students

Figure 43: Behavior of the ideal student - Expert Creative Online Session

City consciousness:

"Know how much noise disturbance you cause/do something in return for your city. Students already do return the favour for their sorority. They only have to make the step outside of the sorority and do it for the city. There is still room to broaden the scope."

"Yet, a small side note, I do notice that we are bad at promoting these kinds of activities. Students already host multiple small initiatives, where we sometimes do not even know off. So we do not say the students do nothing. We know a lot is happening already." - Employee policy TUDelft

A feeling for your surrounding environment:

"Well, I would not say you have to do something for the city. It is always your own choice. But it would be nice if students have some feeling for their surrounding environment and empathize a little with others. For example, you see that your neighbour needs something, so you run a little errand for her. Still, it is okay to think about yourself as it is also the period in which you start living on your own for the first time." - Counsellor

Makes room for younger students:

"This one is great because this way you empathize with other students instead of the city. So you realize how nice your own experience has been and decide to make room for a younger student to experience the same." - Counsellor

4.1.6 Solutions to create throughput in student housing

One of the issues mentioned during this creative online session is the lack of throughput in student housing. In the last exercise of the session, the participants came up with several possible solutions and influences to take into account. In short, the participants concluded that Master houses are needed to stimulate the throughput. And move with some people from your Bachelor house to a smaller one.

“So they start hosting vote-out evenings 😊 !” - Employee policy TUDelft

Master houses and the segregated rental housing market

“The Master student wants to live in a smaller house with just a few of his friends. Four people of the larger house determine they have become too old for the way of living and want to find something together. But it is impossible to find a place like that. The regular renting sector is also not extremely enthusiastic to accommodate these kinds of groups.” - Employee policy DUWO

“Here in Delft, you got the downside of an extremely segregated rental housing market. The other housing corporations could play a role in building these types of Master student houses.” - Employee policy TUDelft

“Yet the pressure on the rental housing market is so huge it will trigger political conflicts. Because the starter wants to live here as well. Understanding each others’ situations is essential.” - Counsellor

The rent allowance as an extra incentive

“DUWO is creating 23+ complexes using the rent allowance system. The rent of these rooms will be 619 euros. To make it affordable, the student needs the allowance. But for these higher prices, students have to be at least 23 years old to receive it. The incentive is quite effective, but students aren’t enthusiastic about this, as the rent allowance only covers a part of the rent. Meaning the student pays on average 80 euros more for the same type of room.” - Employee policy DUWO

4.1.7 Closing round

During the closing round, a few more challenges got pointed out as relevant topics for this project. The shortage of available locations to build both social- and student housing. Which is an ever-recurring discussion of who to give it to? The advice to further research how the government should smartly finance affordable housing, as the rent allowance is considered the unfavourable solution. And the worry of what will happen if the basic grant (studiebeurs) gets reinstalled. Even more pressure on the housing sector?

Available locations

“Most of the ground in Delft belongs to commercial parties. But we make anterior agreements with them. These agreements state to reserve 15% for social housing or student housing. But when comparing those two, student housing is the more lucrative option. Because you built way smaller rooms, so in the same area, you can create more houses. That’s why all commercial parties chose that option. On a small plot, you can accommodate many students, and they receive the rent allowance. It is a double win for them.” - Counsellor

“Let’s not forget to also look on the bright side. For student housing, we indeed need only a small plot to create those houses! Nonetheless, we still see finding those plots is still a big challenge...” - Employee policy TUDelft

“Yeah, there is a lot of tension among people in the council at the moment. They compare the students to someone in need of a house in the social sector. These latter people wait for almost six years to finally find a home. I cannot make this any prettier. Even more students? And our children don’t even move out of the bachelor houses... It is an understandable sentiment. - Counsellor

Smartly finance affordable housing

“It would be interesting to investigate how you can smartly guarantee the affordability of both private and shared student housing. Without making a distinction between those two types of living. To me, object subsidy seems the preferable solution.” - Counsellor

“If you now take DUWO as an example. They mostly build private housing, as they can ask for a higher rent because of the rent allowance the student will receive. This is also because of the high construction costs these days. So to me, it seems a way better solution to finance some of the building costs. If the building costs are higher, we make sure the corporation can afford it. But we take away the advantage created by the rent allowance. This way DUWO can also build a mix of private and shared housing if this is favourable.” - Counsellor

Basic grant

“Most likely, the pressure will only increase if the basic grant gets reinstalled. Because the year it got abolished, it created some relief on the housing market.” - Employee policy TUDelft

APPENDIX F

9 recommendations for a participation platform (Rathenau Instituut et al., 2020)



1. ACCESSIBLE INFORMATION

Improve information management:

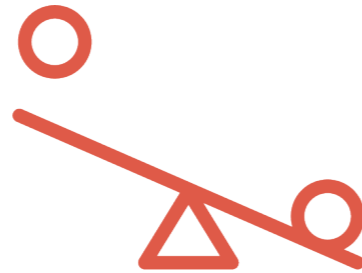
Make administrative processes transparent & present the information clearly so it is easy to find/searchable

Stimulate accountability platforms:

Provide insight into the decisions of individual representatives

Provide direct question-and-answer possibilities:

More direct opportunities for moderated interaction between citizens and DUWO representatives



2. EXPERIMENT AND LEARN

Low threshold for digital citizen involvement + easy accessible:

Create an online platform for citizens' initiatives and act as a user of consultation platforms. It is crucial to actively inform citizens about the existence and functioning of the platform through campaigns and information activities, to attract as diverse and inclusive audience as possible.

Be clear about the process and purpose of citizen engagement:

Show how the students' input affects decision-making of DUWO
The platform is mainly there to

Learn and improve:

It requires careful design, repetition and reflection to determine how, when and why a participation process contributes to democratic legitimacy



3. BE AWARE OF LIMITATIONS

Combine online and offline instruments:

Online interaction is complementary to the traditional, physical participation processes

Choose or design suitable digital instruments:

Look specifically at the possibilities and limitations of the digital instrument

Pay attention to security and the possibility of fraud:

It is important to consider which measures and investments in digital security are proportional.