TALLINN UNIVERSITY OF TECHNOLOGY
SCHOOL OF ENGINEERING
Academy of Architecture and Urban Studies

# CREATING ADAPTABLE ACCOMMODATION IN THE URBAN VOIDS OF TALLINN

–

# HOUSING A FUTURE MASS INFLUX OF DISPLACED PERSONS

## KOHANDATAV ELAMINE TALLINNA TÜHIMIKES - TULEVASE MASSILISE PÕGENIKE SISSEVOOLU MAJUTAMINE

MASTER THESIS

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## ABSTRACT

Since the start of the Ukrainian war and the activation of the Temporary Protection Directive by the European Union, the capital of Estonia, has had a mass influx of displaced persons. However, the infrastructure of the small nation has become overburdened. The housing sector in Tallinn has become under major pressure to accommodate the mass influx. As the climate crisis is only starting to have a major impact on the environment, future mass migrations and mass influxes could become a new norm, raising concern how a future humanitarian crisis could affect Tallinn. This creates necessity for new urban spaces which could be used to improve the government owned housing sector in Tallinn. Through qualitative methods, government owned housing sector, the needs of refugees and urban voids were analysed. Research outlines a need for adaptable social housing for different user groups which could be used to house displaced persons. Furthermore, the excess number of urban voids within the city offer vacant space near the centre, which would meet the spatial needs of refugees. Therefore, a possibility to create adaptable social housing, which corresponds to different user groups and could help alleviate the stress on the housing sector during a future mass influx of displaced people could be constructed using urban voids in the centre of Tallinn.

## ANNOTATSIOON

Ukraina sõja ning ajutise kaitse direktiivi rakendamise tõttu Euroopa Liidu poolt on Eesti pealinna saabunud massiline arv põgenikke. Väikese riigi infrastruktuur on selle tõttu ülekoormatud. Tallinna majutus sektor on põgenike majutamisest suure pinge all. Kuid kliimakriis on alles algstaadiumites ning hakkab põhjustama üha rohkem katastroofe, mis tähendab, et massiline rändlus ja suuremad põgenike sissevoolud võivad saada uueks normiks, tõstatades küsimuse kuidas need Tallinnat mõjutada võivad. See loob vajaduse uudse linnaruumi järele, mida saab kasutada Tallinna sotsiaalmajade süsteemi ja majutussektori parandamiseks. Läbi kvalitatiivsete meetodite analüüsitakse valitsuse omandis olevat majutus sektorit, põgenike vajadusi ja linnaruumi tühimikke. Uurimistöö jõuab järelduseni, et Tallinnas on vajadus erinevate kasutajarühmade jaoks mõeldud paindlikku sotsiaalelamute süsteemi, mida saab kasutada põgenike majutamiseks. Linnaruumi tühimikud pakuvad ehitusvõimalusi kesklinna lähedal, mis vastavad põgenike ruumilistele vajadustele. Seetõttu võiks tulevikus kasutada kesklinna tühimikke paindlikke sotsiaalelamute loomiseks, mis sobivad erinevatele kasutajarühmadele ning majutavad tuleviku kriiside ajal põgenikke.

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# INTRODUCTION

**Keywords**

Social housing;

Urban void;

Mass influx;

Displaced persons;

Master thesis

Since the start of the Ukrainian war and the activation of the Temporary Protection Directive by the European Union, the capital of Estonia, has had a mass influx of displaced persons. However, as a small nation the infrastructure is overburdened. The housing sector in Tallinn has become under major pressure to accommodate the mass influx. As the climate crisis is only starting to have major impact on the environment, future mass migrations and mass influxes could become a new norm, raising concern how a future humanitarian crisis could affect Tallinn. Analysis conducted by UNHCR (2023) after the start of the Ukrainian war suggests a lack of long-term accommodation options for refugees in Tallinn. In addition, a report by Peeker (2021) points out the current issues in the social housing system, which need improvement and more living spaces. However, housing refugees needs to take into consideration the factors that forcefully displaced people face. Dalal (2018) highlights how individuality, privacy and security are compromised in refugee camps in Germany. In addition, urban environment, which refugees are placed into need to be accepting of them as discussed by Gent (2022). This could be vital to the success of the integration process as social contact diminished prejudice on average as reported by Pettigrew (2011) (Gregurović, Kaufmann, Župarić-Iljić, & Dujmović, 2019). In addition, Gehl (2011) states that social contact could be created through properly designed social spaces.

However, as the Temporary Protection Directive has been activated for the first time in history it offers a new perspective into how the housing sector is functioning under increased stress. Furthermore, sources outline how an even worse situation has been avoided as Estonia had a Ukrainian community before the war and most of the refugees seeking protection in Estonia already had relatives, friends or family who could accommodate them (UNHCR, 2023) (Eesti Pagulasabi, 2022). This outlines the necessity to create solutions for a response plan in the event of a future mass influx of displaced persons caused by the activation of the Temporary Protection Directive. Little research details how using urban voids in the city centre could create better living conditions for housing refugees. In the same way, no research has been conducted into identifying urban voids in Tallinn. Therefore, little is known about utilizing the urban voids in Tallinn and how these spaces could create better living conditions for the local population and refugees.

The research aims to identify and propose a function for urban voids in Tallinn to densify the urban fabric by creating a solution, which could help alleviate the stress on the housing sector. In addition, by reviewing cast studies of refugee camps, the project emphasises how urban voids can be used to improve the conditions for a successful integration process. Furthermore, by implementing adaptable design solutions, housing would be able to change its function according to different user groups. By overviewing the need for social housing and long-term refugee housing a basic number of apartments needed is configured. However, the constraints of building long-term refugee accommodation lie in the fact that the necessity for social housing or housing in general is much more insignificant than the amount a future mass influx requires. Further research into the need for alternative functions for rentable spaces should be conducted in Tallinn.

Qualitative research methods are used to analyse the government owned housing sector in Tallinn and define urban voids. In addition, case studies of short-term refugee camps help to understand the needs of displaced persons. This research proposes an adaptable social housing, which corresponds to different user groups and functions to alleviate the stress on the housing sector during a future mass influx of displaced people. The buildings would use urban voids near the centre of Tallinn to meet the spatial needs of refugees. Simple and adaptable design would use less time to construct, cost less and be adaptable to different sites. The research highlights the need for additional government owned social housing in Tallinn and the need for a response plan to be implement in case of a future mass influx. It emphasises how flexible design could be used for different functions making it viable for construction during a mass influx of displaced persons even if the newcomers leave

for their home countries. Additionally, by outlining the needs of refugees, they could be implemented into future projects. The analysis of urban voids specifies how additional space could be found in dense areas. Moreover, by creating guidelines to identify urban voids in the urban fabric, future projects could adapt them to identify urban voids. The master thesis starts by analysing humanitarian crises in Europe and the current situation in Estonia on pages 9-11. Then an overview of the positives and negatives of social housing in Tallinn is presented on pages 12-14. Additionally, case studies and the needs of refugees are studied on pages 15-23. Urban voids are defined and explored on pages 24-30. Urban voids are identified and locations of possible construction sites in Tallinn are proposed on pages 31-40. The project part of the master thesis can be found on pages 46-70.

*Picture 1. People and a city (Rasmus Ink, 2022)*

# 1 MASS INFLUX OF DISPLACED PERSONS

## 1.1 Humanitarian crisis affecting Europe

Humanitarian crisis is defined as a singular event or a series of events that are threatening in terms of health, safety or well-being of a community or large group of people. It may be an internal or external conflict and usually occurs throughout a large land area. (United Nations Human Rights Office of the High Commissioner, n.d.). As of April 2023, the United Nation Refugee Agency Operational Data Portal reports 35 active situations which cover 172 countries, three in Europe (UNHCR, 2023). The most prominent of these is the Ukrainian war which has displaced a little over 8 million persons to Europe (UNHCR, 2023). In addition, there are ongoing situations in South-Eastern Europe which is composed of migration in the Western Balkans and the Mediterranean situation which is composed of refugees from Africa crossing over the Mediterranean Sea to Europe (UNHCR, 2023).

These situations can be classified by the causes that create them. The Ukrainian war is an active armed conflict which creates an immediate influx of displaced persons who are fleeing from the war. On the other hand, the migration happening in the Western Balkans is mainly caused by labour and happening more gradually. Finally, the migration from Africa through the Mediterranean to Europe is more complex, consisting of armed conflicts, climate change, labour and socio-economic trends and is less predictable. Comprehending and predicting these crises is the main solution to preventing them.

INFORM Climate Change Risk Index is a tool that measures the risk of humanitarian crisis that would require international assistance. They report that in the future drought will be a major driver of increased crisis risk (Thow, Poljansek, Marzi, Galimberti, & Dalla Valle, 2022). In addition, they point out river and coastal floods and epidemic risk are the major drivers in increased crisis risk in the coming decades (Thow, Poljansek, Marzi, Galimberti, & Dalla Valle, 2022). They conclude that climate change will become the main cause of humanitarian crisis in the future (Thow, Poljansek, Marzi, Galimberti, & Dalla Valle, 2022). INFORM reports that in the future more than 5.5 billion persons could be living in countries classified as having "high" and "very high" crisis risk (Thow, Poljansek, Marzi, Galimberti, & Dalla Valle, 2022). The reports notes that the lower income countries will be worst affected. Vince (2022) goes on to explain how climate change is going to be more prevalent in the regions close to the equator. People from these areas will begin to migrate towards higher latitudes seeking more stable environments (Vince, 2022). The countries with the highest risk index are in the Western, Southern and Eastern Africa (Thow, Poljansek, Marzi, Galimberti, & Dalla Valle, 2022). The migration between Africa and Europe is already happening and would only be sped up by climate change. European asylum laws are put in place to regulate the number of persons who are accepted into Europe as migrants. For example, in Estonia the annual immigration limit cannot exceed 0.1 percent of Estonia's permanent population per year (Riigikantselei, Justiitsministeerium, 2009). The legislation allows about 1300 people into the country per year which cannot cause a mass influx. The only way a mass influx can occur is due to an alternative legislation – the Temporary Protection Directive.


*Scheme 1. Migration in Europe*

## 1.2 Temporary Protection Directive

After the invasion of Ukraine by Russia in 2022 the European Union Council decided to trigger the Temporary Protection Directive for the first time in history to aid the population fleeing the war. According to the European Commission Migration and Home Affairs Temporary Protection Directive (referenced as TPD from now on) was initially adopted after the wars in Yugoslavia in the 1990s (European Commission, Migration and Home Affairs, n.d.). In short, the TPD offers displaced persons a residence permit for the entire duration of the protection which can last from one year to three years. This means that displaced persons have immediate access to housing, medical care, education, employment and can move freely in EU countries before the issuance of a residence permit (European Commission, Migration and Home Affairs, n.d.). It alleviates a mass influx in one area and distributes it more equally to all member states.

A mass influx of migrants can cause various issues in the host community, such as strains on economic resources and physical infrastructure, security risks and threats to government authority (Fujibayashi & Nakayama, 2017). Additionally, the normal asylum system could become overburdened by the flow of refugees. The TPD alleviates these issues by proportioning out the influx of displaced persons across the member states. This allows for a quick response plan which ensures that refugees receive help faster, and less time is spent in migration. In addition, member states are not left alone in the crisis and a better handling of the mass influx can be achieved.

The usefulness of the TPD has been proven since the start of the Ukrainian war, by helping refugees have a quick migration process. However, this has caused a lot of debate around the activation of the directive. During the Syrian Civil War and the following European migrant crisis of 2015, the TPD was not triggered (Global Detention Project, 2022), which created a lot of criticism. Discussion about the political bias of the directive was questioned and further analysis of the directive was demanded.

Following in depth analysis revealed problems with the directive. In a report, Arenas (2005) points out that the protection system can only be triggered by the Council and cannot be demanded by individuals or member states even though the member states are the ones directly affected by the outcome. This could create political bias when activating the directive as only a small group of people have a say in the matter. In addition, he reports of terminology that has been implemented and left consciously vague (Arenas, 2005). Firstly, the term "mass influx" which is composed of three phenomena:

- Influx from the same country or geographical area – this could mean that an influx from different countries would not be seen as a mass influx.
- Gradual arrival of asylum-seekers – This suggests that a mass influx could only be defined when the arrival of asylum seekers would happen suddenly and in mass.
- Number of persons must be substantial – No clear number of persons are indicated.

This leaves the interpretation of "mass influx" solely up to the Council (Arenas, 2005). Secondly, the term "displaced person" is explained as persons who have fled areas of armed conflict or endemic violence and persons at serious risk of systematic or generalized violations of their human rights (Arenas, 2005). This suggests that the TPD is leaning towards activation when an armed conflict occurs, which can be proven by comparing the response to the Ukrainian war and the European migration crisis of 2015. However, human rights violations can happen in multiple other ways leaving the terminology vague and up to the interpretation of the Council.

Currently increasing amount of humanitarian crises are happening because of climate change as pointed out by the INFORM Climate Change report (Thow, Poljansek, Marzi, Galimberti, & Dalla Valle, 2022). This questions the directive as it would be orientated towards armed conflict and dismissing relevant reasons for a mass influx in the 21st century. Kolmannskog and Myrstad (2009) point out that the TPD was drafted in a pre-recognition state regarding climate change which means that it might not be activated when facing a humanitarian crisis caused by climate change. According to the explanation implemented for "displaced person", this could be overlooked when in the aftermath of a climate crisis human rights would be violated. As climate change is affecting lower income countries the worst, the possibility of human rights violations is higher.

While the TPD has proven its usefulness during the Ukrainian war there is still room for improvement. There should be a reassessment of the causes of mass influx in the current age and changes should be implemented. The TPD creates a possibility for people displaced by crises in mass to seek asylum in Estonia. As this is the first time the TPD has been activated in history, the Ukrainian war offers a view of how the crises response plans and the infrastructure handles the mass influx in Estonia.

## 1.3 Situation in Estonia

Since the start of the war 128,875 Ukrainian refugees have entered Estonia and 70,163 people have decided to stay in Estonia. 30,823 people have registered a place of residence with 658 still being in short term accommodation (as of 23.04.2023), about 58,000 people have moved through Estonia to other member states. In April 2023 median average for refugees entering the country was about 50 people per day. (Sotsiaalkindlustusamet, 2023). Most refugees are gravitated to major cities, for example Tallinn, Tartu and Pärnu.

The Estonian Government has had a swift response to the influx of refugees because provisions from the TPD had already been transposed into the Estonian law, which meant that no further legislative steps were required to be made (UNHCR, 2023). The access to healthcare, social protection, education, and other benefits are provided on the same level as they are to Estonian citizens (UNHCR, 2023). According to the Ukrainian Situation Regional Refugee Response Plan by UNHCR the Estonian Government has set three main goals for its response to the Ukrainian refugee situation:

- Ensuring the sustainability of public and state services for all.
- Providing refugees with the appropriate conditions to achieve self-sufficiency and independence.
- Creating conditions for refugees to integrate into the Estonian society while maintaining ties with Ukrainian language and culture.

(UNHCR, 2023)

The Estonian Government is treating the Ukrainian refugees as equals. There is focus on integrating refugees into society to have a positive benefit on their stay while valuing their language, roots, culture and giving them individuality.

Despite the action taken the Ukrainian Situation Regional Refugee Response Plan by UNHCR points out that there are still shortcomings requiring improvement:

- Women and children face a lack of employment opportunities.
- Challenges in finding suitable childcare options.
- Shortage of specialists, funding and infrastructure in the education and healthcare sector
- Gaps in information refugees have about rights and services they are entitled to.
- The necessity for more flexible language learning opportunities, for example learning through jobs or hobby activities.
- A substantial number of children still have not taken part in the national education system.
- Shortage of accommodation as there is little social housing and the private rental market has been exhausted.

(UNHCR, 2023)

As Estonia is a small country it would make sense that there could be shortage in specialists, funding, and accommodation. There could be temporary changes made to the system to fulfil the needs of the refugees. Overall, the Estonian Government has had a solid response to the mass influx of refugees. Issues are being fixed as they appear with financial aid from the European Union.

*Picture 2. Demonstration in support of Ukraine (Rasmus Ink, 2022)*

# 2 SOCIAL HOUSING IN TALLINN

## 2.1 Social housing

Tallinn currently has 17 social houses for people who cannot secure a home for themselves or require help in their everyday lives (City of Tallinn, 2023). The living spaces are divided into social apartments and social spaces. Social apartments are living spaces for a single resident or families. Social spaces offer shared rooms or shared common spaces between strangers. The end goal of the service is to help people regain their independence and live without social benefits (City of Tallinn, 2022). The number of users of social housing is on the rise and has increased from 2017 with 1078 users to 1359 by 2021 (Kuulpak, 2022). Meanwhile the number of social housing rooms has increased from 1033 rooms in 2017 to 1122 rooms in 2021 (Kuulpak, 2022). In addition, Tallinn offers shelters for the homeless, social accommodation units service and dormitories to reintegrate people into society (Peeker, 2021). As housing which is meant for reintegrating people into society has different functions and rules in place for the system to work properly, they require a different typology from social housing that offers the main function of accommodation. For this reason, this research focuses on social housing and will not be taking other forms of housing into account.

A report by the Social Work Centre of Tallinn (2021) outlines the issues with the current social housing system:

- Density needs to be reduced to improve living conditions.
- It is necessary to relocate basement level accommodation.
- More people are required to move out from the social housing system to the real estate market. Most of these people will not rent from the real estate market but would be interested in renting from the municipality.
- Current social housing system does not allow for pets.
- Social housing is not a suitable place for families and raising children.
- There should be more support for people who are facing financial difficulties and are struggling to rent accommodation.
- Social housing is not accessible to the disabled.

As most of the current social housing is located in older Soviet era apartment buildings, this report outlines a necessity for buildings built using modern standards with more accessibility in mind. Extra apartments should be designed to house the disabled. Improved apartments with families in mind could be created. Higher quality social housing could add an additional level to the process of moving from social housing to the real estate market. This would produce a less noticeable transition phase for the resident. The current growth of users of social housing and the necessity to lower the density of existing social housing creates the necessity for more social housing to be built in Tallinn.

*Scheme 2. Social houses in Tallinn*

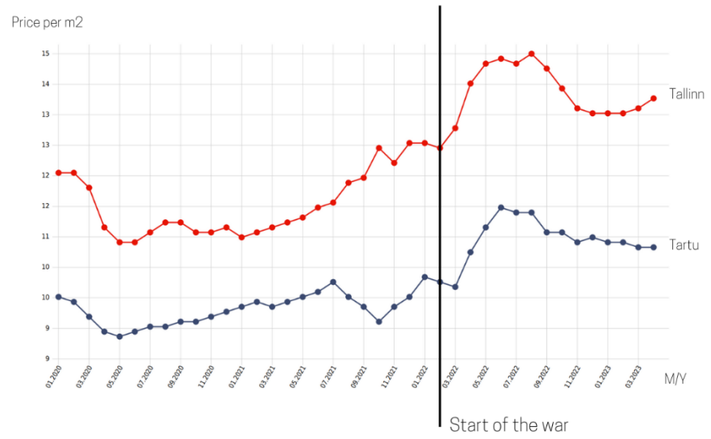
## 2.2 Accommodating displaced persons

Ukrainian Situation Regional Refugee Response Plan by UNHCR emphasises that accommodation is one of the main shortages currently in Estonia. When arriving in Estonia refugees are housed in short-term housing, which will give them time to find long-term housing. Even though Estonian Government provides a one-time grant to refugees moving to long-term housing they report that it could take longer for refugees to move due to shortages of suitable options (UNHCR, 2023). Furthermore, statistics by the Social Insurance Board display only three municipalities (Tallinn, Saaremaa and Põltsamaa), which offer government housing, each of the municipalities has only one government housing for accommodation, three in total for the whole Estonia (Sotsiaalkindlustusamet, 2023). More housing options are available in areas that are less populated, but this means that these areas offer less opportunities for employment. This creates an increased stress on the capital, Tallinn, which offers the most employment but suffers the most from accommodation opportunities.

At the moment Tallinn offers short-term accommodation up to four months in refugee centres, hotels and on a cruise ferry in Port of Tallinn. In addition, accommodation is offered by volunteers in their own homes and social houses, although the waiting lists are long. Plans to start renovating old apartment buildings in the rural areas have been suggested, but this would be a slow process and as discussed before, the rural areas offer less opportunities for employment (UNHCR, 2023). The ferry, which currently houses about 900 refugees, is set to be rented out to Canada which means that 900 refugees will be without accommodation in June 2023 (Mäekivi, 2023). Information about accommodation provided on the official website of Tallinn states that "Finding long-term accommodation for thousands of refugees takes time because Tallinn does not have enough unoccupied living spaces. This is why it is important seek help from relatives, friends or volunteers offering accommodation." (City of Tallinn, 2022). The shortage of government provided accommodation is prevalent and refugees have moved to the real estate market to secure housing.

Websites have been developed specifically to address the needs of refugees looking for accommodation on the real estate market (Kriis.ee, 2022). In addition, groups have been formed that specifically target the Ukrainian refugees looking for accommodation. This is one of the best solutions currently available for finding long-term accommodation in Tallinn. However, during the start of the crisis this option did not exist, and refugees were using the usual sites for the Estonian real estate market. The issues posed by the real estate market could be seen in the early news reporting when refugees were using the general sites to find accommodation. News articles discussing the discrimination of Ukrainian refugees on the real estate market were appearing during the initial months after the crisis began (Mets, 2022) (Länts, 2022). In addition, Scheme 3 displays how prices for renting apartments climbed after the start of the war in February. Not only was this because of increased demand, but landlords would raise prices to profit off the situation. As renting from the real estate market is the only option for long-term accommodation, the process of finding suitable long-term accommodation becomes even more difficult.

Even though this provides a bleak outlook on the long-term refugee accommodation in Tallinn a housing crisis has not erupted. Estonia had a Ukrainian community and seasonal workers living here before the war. Most of the refugees seeking protection already had relatives, friends or family living in Estonia who could accommodate them. Early reporting exhibited that only 28% of people who decided to stay in Estonia required accommodation (Eesti Pagulasabi, 2022). This has prevented a crisis in the Estonian housing sector, but it raises concerns about a possible future mass influx of people who might not have a support group in the country. With climate change creating more humanitarian crises leading to a rising number of migrants, a new mass influx could be happening sooner than anticipated. The necessity for an enhanced response plan in the housing sector is required to prevent a housing crisis in the city.




*Scheme 3. Price statistics - Renting apartments - Tallinn (red) and Tartu (blue) (Kinnisvaraportaal, 2022)*

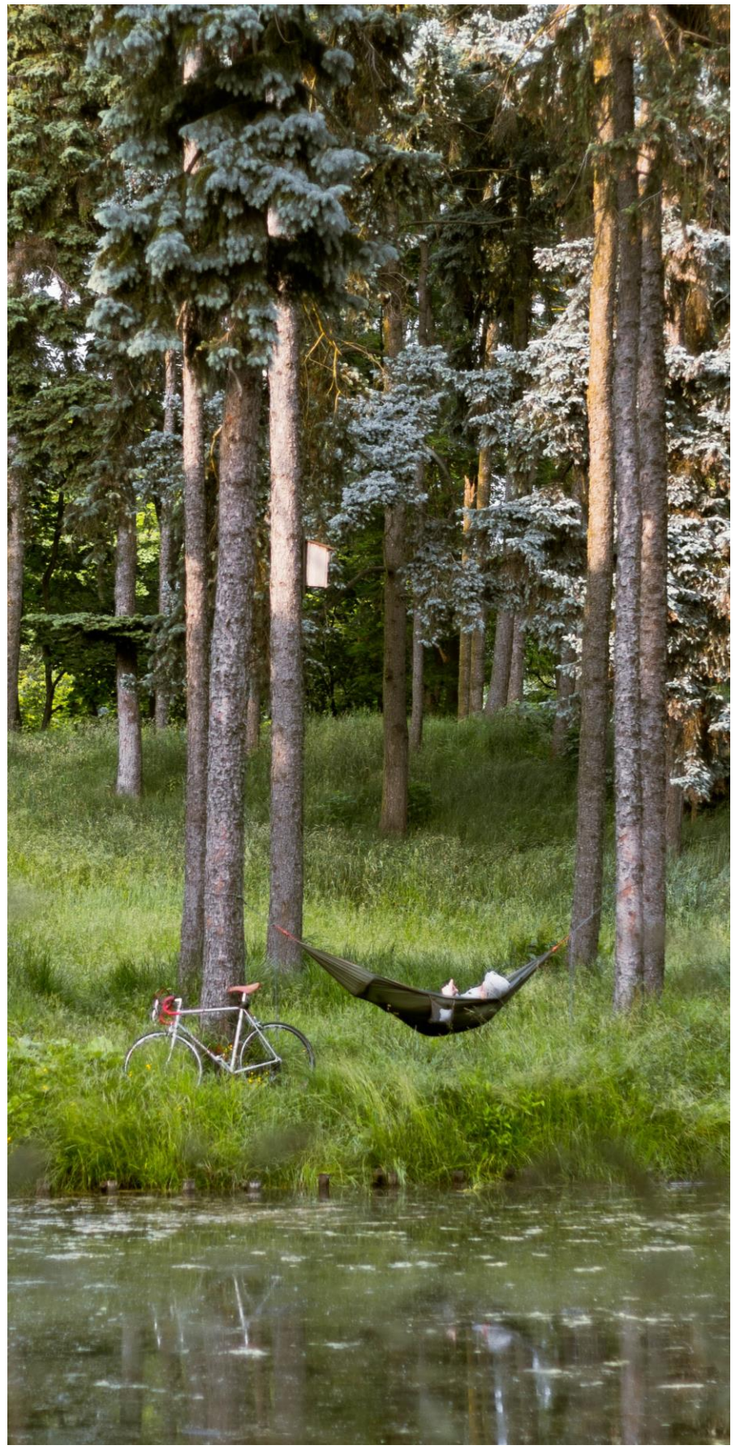
## 2.3 Social housing for displaced persons

The future prospect of displaced persons is returning to their home country. The TPD foresees an eventual return to home countries for the displaced, initially allowing only up to three years of protection. Currently accommodation is created by sourcing unused space in the host community to house the people in need, for example using ferries as housing alternatives. But an improvised solution cannot replace a solution meant for long-term housing as it is only meant for short-term stay. As social housing infrastructure extends to refugees, by combining the function of a social house with the functions required for long-term accommodation a new typology is created. New social housing could be built to accommodate displaced persons. From the perspective of long-term accommodation for displaced persons a social housing system owned and controlled by the government or municipality would mean guaranteed access to accommodation at a stable price. However, it would be negative for the host community to produce housing, which would be left empty after the migrants depart at the end of a crisis. A flexible design could offer different solutions for different user groups in the future or even offer short-term accommodation possibilities if other accommodation is exhausted in the city. These social houses should have to be controlled by the municipality otherwise they could artificially overburden the real estate market.

It needs to be acknowledged that humanitarian crises are unpredictable. From the reason they happen to the migration of masses they can cause. Recognising the number of sites to develop as social housing would not depend on the number of displaced persons requiring accommodation but rather the need for additional accommodation or other functions within the city.

*Picture 3. Housing (Rasmus Ink, 2017)*

# 3 NEEDS OF DISPLACED PERSONS

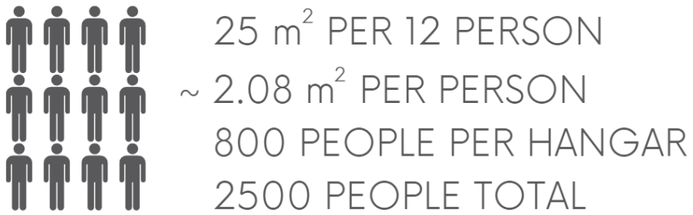


*Picture 4. Serenity (Rasmus Ink, 2022)*

## 3.1 Case studies

### 3.1.1 Tempelhof airport

During the European migration crisis of 2015, Europe saw a mass influx of displaced persons caused by the wars in Syria, Afghanistan, and Iran. Germany required fast solutions to accommodate the number of refugees. One of those solutions was to exploit vacant structures, for instance the Tempelhof airport. Several of the industrial halls within the airport were transformed into accommodation by constructing 25 square meter cubicles for refugees (Dalal, Darweesh, Misselwitz, & Steigemann, 2018). The cubicles were constructed of thin walls to separate the rooms, curtains for doors and bunkbeds for up to twelve people per cubicle. Overall, 800 refugees were accommodated per hangar allowing housing for 2500 people in total (Dalal, Darweesh, Misselwitz, & Steigemann, 2018).




Interviews done by Hutton (2016) with the refugees report little privacy, bad mental health, and little personal space as the main concerns. The cubicles did not have a roof making sound echo throughout the hangar and because of that noise was a major issue. The absence of a roof created light obstructions that were disturbing the refugees. The bunkbeds offered little to no privacy or personal space. Picture 3 and Picture 4 display how people were creating makeshift curtains to create private spaces. The only signs of individuality were created by colourful clothing owned by the refugees and writings and drawings hanged on the walls. To provide order and security, strict rules were set in place that regulated the daily routines by creating light switch off times, meals catered at certain hours and strict access control (Dalal, Darweesh, Misselwitz, & Steigemann, 2018). This can strip away individuality from individuals by constricting their day to follow the schedule proposed. Hutton (2016) reports that while the accommodation is meant as a short-term solution, some refugees had been accommodated in Tempelhof for six months. Research has found negative aspects linking to long term stay in short-term refugee camps. This impact is explained by the fewer opportunities to acquire education, work experience, and to a lesser extent, bridging social capital (Hannafi & Marouani, Social integration of Syrian refugees and their intention to stay in Germany, 2023).

Despite of the control and little space to work with, refugees found the way to handle spaces as according to their needs. Men would use wider corridors as hang-out spaces and women would arrange sofas into communal spaces. One person even managed to open a small hair-dressing service by using recycled furniture obtained from the guards (Dalal, Darweesh, Misselwitz, & Steigemann, 2018).

The refugee accommodation at Tempelhof airports serves its purpose as a fast response to an overwhelming number of refugees requiring accommodation. Yet, the negative aspects that come with this should be analysed and fixed:

- Lack of individuality
- Little privacy
- Lack of personal space
- Issues with noise and light
- Control over the daily lives of residents
- Short-term living conditions are used for too long periods

Considering the issues with the accommodation, Tempelhof serves as a valid example of how human beings adapt by creating their own spaces and finding freedom in controlled spaces.

*Picture 5. Tempelhof airport (Schwarz)*

*Picture 6. Bunkbeds at Tempelhof (Hutton, 2016)*

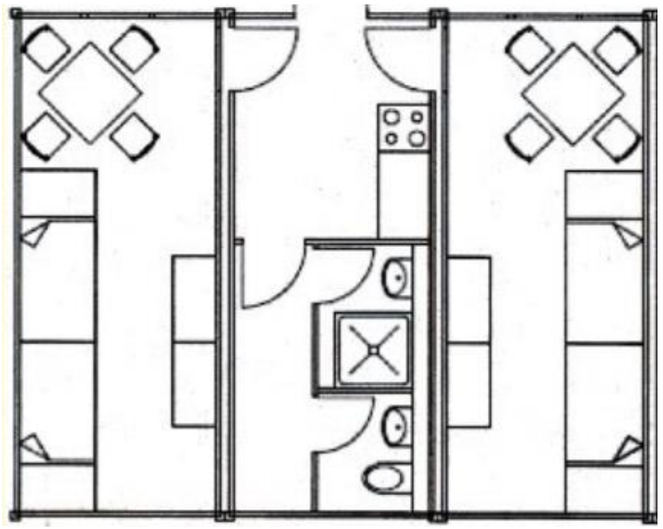
*Picture 7. Bunkbeds at Tempelhof (Hutton, 2016)*

### 3.1.2 Tempohomes

After the overcrowded accommodation at Tempelhof airport was criticised, the city of Berlin founded a new task force composing of state actors, professional planners, and architects to design new accommodation solutions (Dalal, Darweesh, Misselwitz, & Steigemann, 2018). Rather than using temporary solutions the task force came up with the idea of Modular Accommodation for Refugees, a low budget yet long-term, durable, and standardised module, which would be reused as affordable housing for the homeless or students (Dalal, Darweesh, Misselwitz, & Steigemann, 2018). This strategy combined the need for affordable housing in Berlin with the necessity of accommodation for refugees. The design process focused on standardisation, speed of construction, efficient maintenance, and compliance with fire safety rules (Dalal, Darweesh, Misselwitz, & Steigemann, 2018).

54 $m^2$ PER 8 PERSON
6.75 $m^2$ PER PERSON
8 PEOPLE PER TEMPOHOME
~1000 PEOPLE TOTAL

Tempohomes were implemented at Tempelhof airport to replace the criticised cubicles. A small village was constructed on the runways outside the hangars. Planning social spaces had an increased focus in the project by designing meeting spaces, playgrounds, and leisure facilities. Tempohomes had a small porch where people could spend time and be in contact with life around them. The facades of the modules were grey and identical creating little individuality. Modules had an area of 18 square meters, measuring 2.5 meters wide and 7.2 meters long. Three modules were combined as a single accommodation. Picture 5 displays the modular solution with a shared entrance, kitchen, and bathroom and two individual modules with sleeping arrangements.



*Scheme 4. Layout of a Tempohome (FACETTEN-Magazin, 2017)*

Compared to the cubicles implemented in the hangars, the issues of privacy, personal space, noise, and light obstructions were improved drastically. Added social spaces created room for leisure activities and socialization between the residents, but the issues of control over spaces persisted. Residents had no freedom over the furniture in their accommodation, they reported that nothing, even a picture on the wall, could not be changed without the permission of a social worker (Dalal, Darweesh, Misselwitz, & Steigemann, 2018). A local manager of Tempohomes gave an insight into the management of the site by stating: "Refugees must learn to live in Germany, according to our values where everybody is the same, where people from quite a few nationalities and religious groups live peacefully side-by-side not segregated. If they do not learn it here, when should they learn it?" (Dalal, Darweesh, Misselwitz, & Steigemann, 2018).

Even though the design and solution offered by the Tempohomes improved in contrast to the accommodation in the hangars the negative and controlling attitude by the management possibly hindered integration and made refugees feel inferior to people from the host community.

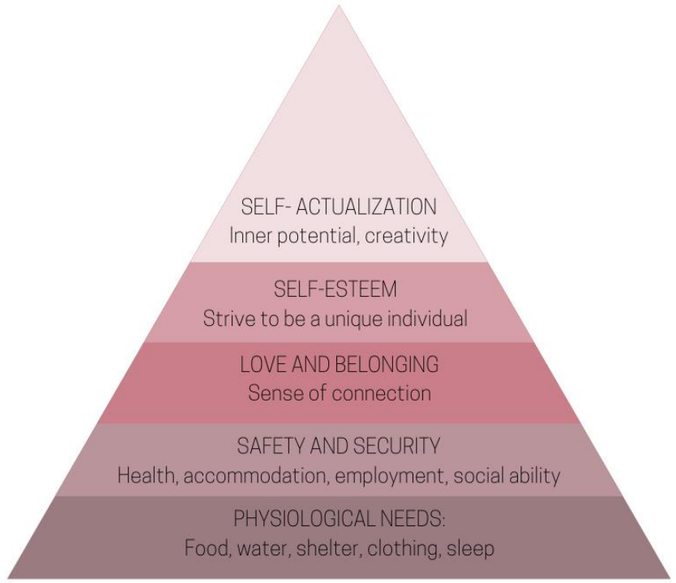
*Picture 8. Social areas (D'utruy, 2017)*

*Picture 9. Street (D'utruy, 2017)*

*Picture 10. Fencing (D'utruy, 2017)*

## 3.2 Long-term housing

Case studies highlight the positives and negatives of short-term accommodation projects implemented in Germany. They demonstrate progress in the right direction but fall short on several aspects of the living conditions, which require in depth study before implementation. The shortcomings of the case studies can be analysed through Maslow's Hierarchy of Needs.




*Scheme 5. Maslow's Hierarchy of Needs*

### 3.2.1 Security and privacy

Security is the second most important necessity a human has according to the Maslow's hierarchy of needs. From the point of leaving their home country until arriving in their destination, refugees face uncertainty. Compelled to abandon material possessions, homes, employment, and to sever social ties, for many, moving into permanent accommodation provides a foundation for rebuilding their lives through education and employment (Netto, 2011). Access to permanent housing is a key milestone in their journeys and, in some cases, may offer comfort and stability, but for many this entails learning to deal with a new type of private space and the systems and institutions associated with this (Netto, 2011). Achieving accommodation could be seen as achieving security and is a vital step towards a stable life for refugees.

Security could be expressed through physical safety as well. The relationship between the host community and the newcomer community is not guaranteed to be positive between all individuals. Refugees perceive themselves as newcomers in the host community and are aware of the discrimination and harassment that may be directed at them. The effects of harassment include fear among refugees that they or their children would be the victims of racially motivated violence, which inhibited their movements in the neighbourhood as well as emotional abuse through racist name-calling and taunting (Netto, 2011). This means that the accommodation must create a space with sufficient privacy for refugees to feel safe. The building itself would have to blend in with the buildings around it so that refugees are treated on the same level as members of the host community.

It is probable that during the resettlement process refugees have little access to privacy being housed in short-term accommodation with other people as the case studies of Tempelhof and Tempohomes exhibit. Long-term accommodation has to offer enough privacy that refugees would not feel as a mass. Access to private rooms is a must when designing long-term accommodation.

### 3.2.2 Integration and socialization

The step after security and safety is love and belonging, which could be especially hard for refugees as they are the newcomers in society and need integration to be a part of it. Integration is a two-way process between a newcomer and a host society. The process requires adaptation from both sides to be successful. Integration presupposes acquisition of legal and political rights by the new members of society, which will make them become equals partners (Castles, Korac, Vasta, & Vertovec, 2002). Successful integration is achieved if the host society provides access to jobs and services, and acceptance of the newcomers in social interaction (Castles, Korac, Vasta, & Vertovec, 2002). There exists no single theory that can guarantee the process of integration and it is known to be a complex process that happens of all levels of society (Castles, Korac, Vasta, & Vertovec, 2002).

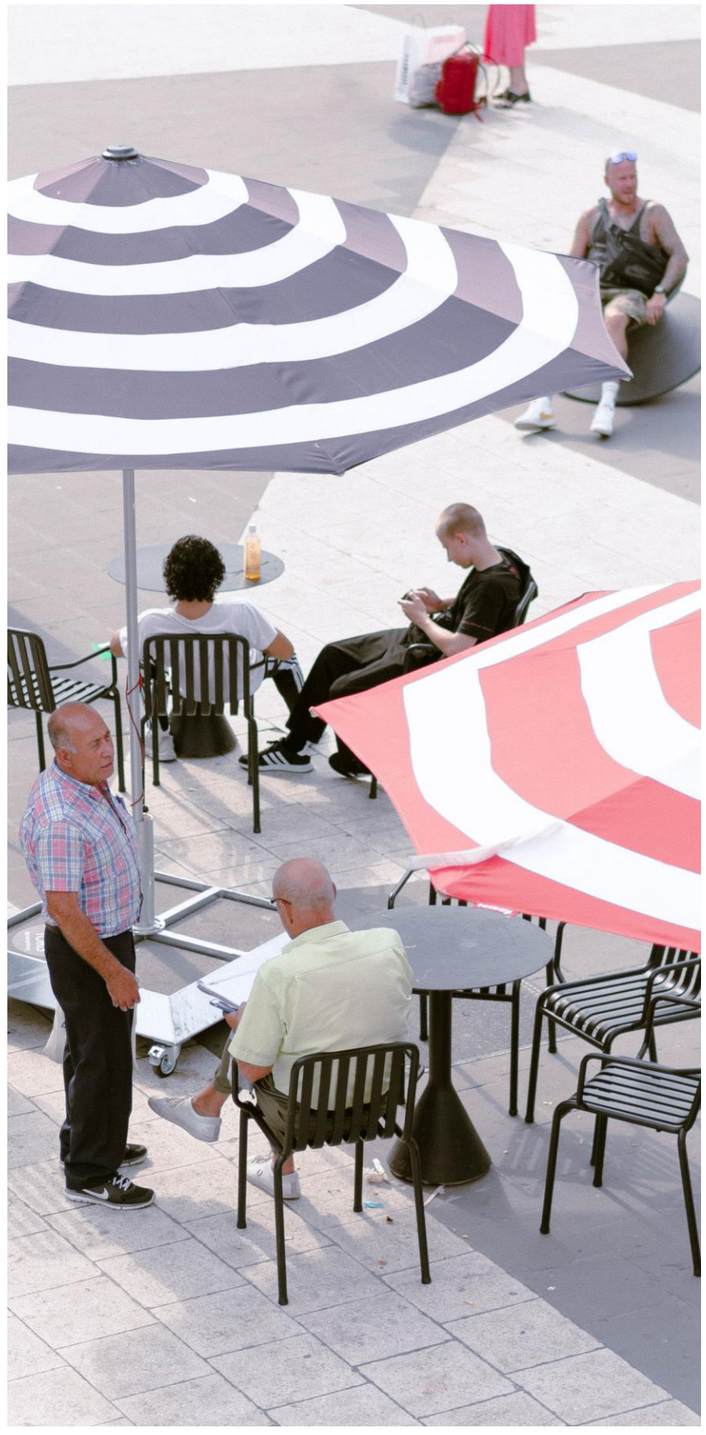
Integration is vital for refugees as they are at a disadvantage when entering a host society. Language barrier, discrimination, cultural differences, limited knowledge of their rights, limited access to education, employment and other opportunities can cast them out. It is vital for the host society to acknowledge these disadvantages and focus on supporting refugees from disadvantaged standpoints. Including refugees in everyday discussions, providing employment opportunities, making education and language courses available, providing access to healthcare and social support, and helping refugees understand cultural orientation of host community are aspects that usually lead to successful integration. It is crucial for the host society to have a positive attitude towards refugee integration. Only then can refugees become functional members that benefit the society.

Additionally, comprehending integration on different levels of society is vital. Proper legislation could contribute towards achieving factors discussed before, but integration on a more individual level between members from both sides needs to take place. On this level integration can be seen through social interaction. Social interaction is a basic aspect of everyday life that is overlooked when discussing integration, but it has an

important role in bridging the gap between the host community and newcomer community. Social interaction is defined by how individuals act towards one another, the attitudes that are set within the society and the amount of social interaction happening between the two groups. It has been reported that social interaction between members of the newcomer and host society have displayed how contact diminished prejudice on average (Pettigrew, Tropp, Wagner, & Christ, 2011) (Gregurović, Kaufmann, Župarić-Iljić, & Dujmović, 2019). However, it has been reported how meaningful contact usually decreases prejudice, while occasional contact might increase prejudice because it is stripped of meaningful and effective interaction which does not allow for full understanding of each other (Gregurović, Kaufmann, Župarić-Iljić, & Dujmović, 2019). Additional research has displayed how negative social constructions of the group of people in the media have been resisted at the level of individual social interactions and within key social constructs (Netto, 2011). This emphasizes how contact on an individual level could diminish prejudice on average though this could be dependent on the nature of contact. Furthermore, attitudes could be changed by individual contact. Having hateful and discriminating attitudes toward a marginalized group could lead to no integration, which in turn would only have negative effects on the host society. This emphasises the necessity for connection on an individual level between the newcomer and the host society.

As important as the nature of contact, is the spatial dimension where contact takes place. Research exhibits that contact in more public spaces has the weakest effect on attitudes while the contact occurring in private spaces facilitated through close social ties or involuntary relations affects the attitudes the strongest (Piekut & Valentine, 2017). Making contact in private spaces would have to happen outside of accommodation, which could prove to be a difficulty at the beginning of offering accommodation. Contact in public space would have to be facilitated through intimate public spaces, which could bridge the gap between fully public and fully private spaces.

Even if the conditions for social interaction are met, there needs to be initiative and motivation to start social interaction. This is crucial for refugees as they are forced migrants and have gone through various traumatic events and may be more sensitive to social integration (Hannafi & Marouani, 2023). This highlights how the hierarchy of needs can create a level-by-level achievement process that could help with integration. As discussed earlier the safety and security level has to be fulfilled in order for social interaction to take place. The Maslow Hierarchy of Needs and the link it has to integration proves that an architectural project cannot address all the complex requirements for proper integration. This is why this research mainly focuses on integration through spatial means – (social spaces and accommodation) as these are aspects an architect can influence.



*Picture 11. Socialization (Rasmus Ink, 2022)*

### 3.2.3 Spaces for socialization

The last paragraph discusses how socialization is a key part of integration on an individual level. Socialization cannot be forced, but through public spaces socialization can be encouraged. Gehl (2011) concludes in „Life between buildings" that people and human activity are the greatest object of attention and interest. Even the modest form of contact of merely seeing and hearing or being near to others is apparently more rewarding and more in demand than the majority of other attractions offered in the public spaces of cities and residential areas (Gehl, 2011). Life in buildings and between buildings seems in nearly all situations to rank as more essential and more relevant than the spaces and buildings themselves (Gehl, 2011). By creating the most basic form of contact, the bare minimum requirements for further contact are made. Private space with a window opening to a public space can fulfil the requirements meant for the most basic contact. He further expands on the idea of low-intensity contact by pointing out that other form of contact can grow out of it as it acts as a medium for the unpredictable, the spontaneous and the unplanned (Gehl, 2011). If the most basic contact is established the rest of the connection can grow from that making it vital to insure the occurrence of basic connections.

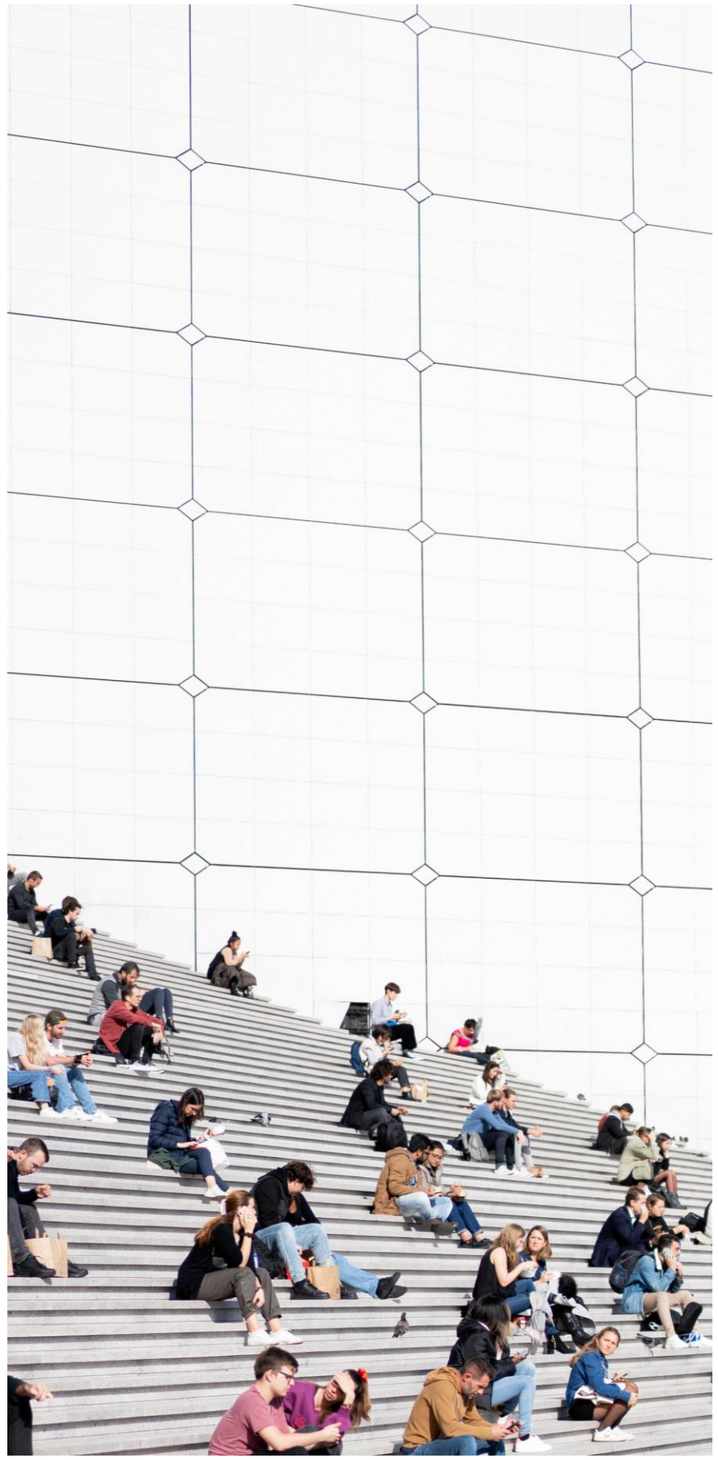
Gehl (2011) goes on to establish the requirements that should be fulfilled in order to create opportunities for socialization within a public space:

- desirable conditions for the necessary outdoor activities
- desirable conditions for the optional, recreational activities
- desirable conditions for the social activities

The concept is left intentionally vague to emphasise that the most basic forms of everyday life should form the centre of attention. Attention to social life could inspire the observer to take part in it, but transitioning from the security of the private space into the openness of the public space is not as simple. Gehl (2011) explains how flexible boundaries in the form of transitional zones that are neither completely private nor completely public, will often be able to function as connecting links, making it easier, both physically and psychologically, for residents and activities to move back and forth between private and public spaces. This would create a spatial hierarchy moving from the private space to a semi-private space to a semi-public space and then finally to the fully public space. The semi-private space could offer connection within the community of the building allowing for socialization between the refugees. The semi-public space would be the connecting link that could establish connection between members of the host community and the newcomer community.

The final important factor that Gehl explains is time. He points out that the longer the outdoor stays in an area last, the greater are the chances that friends and neighbours meet and talk (Gehl, 2011). Whether meeting to talk or not, conditions create the possibility to linger outside the dwelling for any length of time appears to be more of a determining factor in conversation development than the place (Gehl, 2011). Gehl (2011) explains how the design of details plays an important role in developing staying possibilities in public spaces. If spaces are desolate and empty - without benches, columns, plants, trees, and so forth - and if the facades lack interesting details - niches, holes, gateways, stairs, and so on - it can be very difficult to find places to stop and spend time (Gehl, 2011). To maximise the time spent outdoors, it is necessary for a pleasant outdoor area with flexible activities for different user groups. Spaces should be interesting and offer people options to stop and spend time in them.

Emphasis on the necessity of proper public spaces to create socialization through space is evident. Socialization and integration are complex topics that cannot be forced and created artificially. By focusing on the aspects brought forward by Gehl, an environment where socialization could happen could be created.



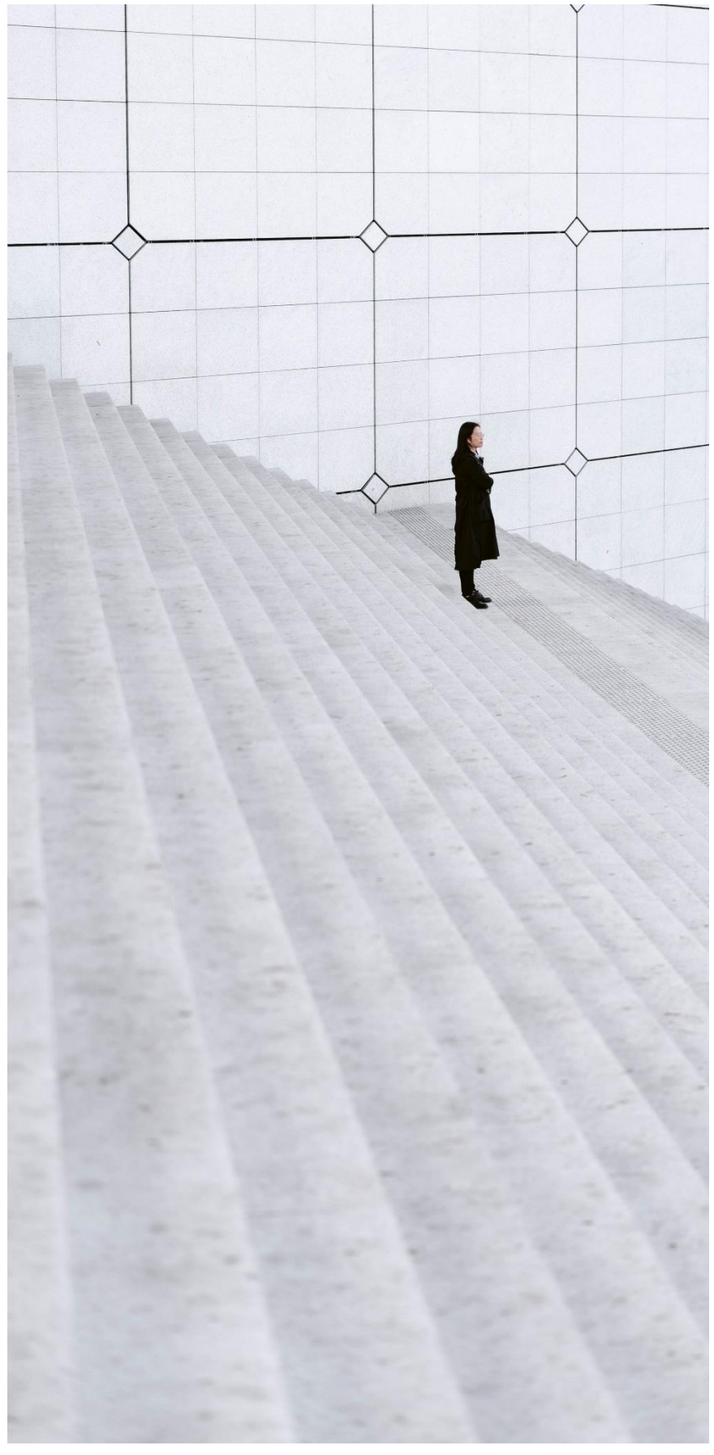
*Picture 12. People using a public space (Rasmus Ink, 2022)*

### 3.2.4 Individuality

Designing with an "architecture for all" mindset as opposed to "architecture for refugees" can play a key role in integration and the political acceptance of newcomers by their neighbours (Kühl & Behrens, 2018). Terms "mass influx", "refugees", "displaced persons" paint the picture of a group with the emphasis on the way they are displaced. When discussing integration, the discussion forms around two groups that should be integrated giving little regard to individuals. From the host community perspective, it would make sense to group people together to come up with a generalised solution when offering assistance. In contrast the perspective of the displaced has a much higher emphasis on individuality.

Individuality is a fundamental aspect of human identity. On the Maslow's Hierarchy of Needs it stands a level above social interaction. Individuality defines a person's personality, values, experiences, beliefs, and other personal attributes that distinguishes a person from a group. Case studies on short-term refugee accommodation display how individuality can be stripped away by control. Controlling a person's daily life with a certain schedule will inevitably form a mass. Controlling the spaces will diminish the control a person has over the space they live in. This might lead to space feeling like it is owned by someone else and not individual to the resident. In contrast to the 2015 European migration crisis, where people were initially housed in short-term accommodation in order to validate their application for asylum the TPD already offers a solution by providing instant temporary protection status. In the case of TPD, the grant for temporary protection is guaranteed immediately from the time a person enters the country. This eliminates the necessity for close control and supervision at the short-term housing sites.

Though social housing is a shared space used by a substantial number of individuals and calls for universal solutions there are still ways to implement aspects of individuality through design principles. Floor plans can be made adaptable by using movable walls to create more private or more public areas according to the user's needs. Furniture that is not built-in can be moved around to achieve solutions individual for the resident. Storage solutions allow to remove furniture that is not required, for example distinct cultures might not use a table and chairs for dining. Stationary furniture, for example the kitchen, can be hidden behind a wall to change the function of the space. Interior design should be implemented only on a basic level, which would allow the resident to decorate their spaces themselves. Controllable sun shading can allow the resident to choose how much light they require in the accommodation. Designers should create solutions that can be dismantled by the resident and re-designed. In addition, not fully developing spaces could leave the job of finding function in the space up to the resident. It is important to take note of these design principles as they will allow for individuality to exist.



*Picture 13. Individual (Rasmus Ink, 2022)*

### 3.2.5 Adaptability

Positive outcome for displaced persons would be to return to their home countries. Some refugees could depart for home after the initial crises has been subsided to rebuild their communities. Infrastructure built to support refugees needs to foresee future functions as raising structures and then demolishing them would have negative effects on the host community by creating waste and using up resources. This could produce a negative attitude from the host community towards aiding refugees in the future. Design solutions, which are adaptable and flexible should be implemented. This would give the infrastructure new functions after the user group changes. Adaptable design solutions can be achieved in multiple ways, for example:

- Open-plan spaces that could be divided into smaller rooms with moveable partitions.
- Modular construction can allow for modules to be added or removed according to necessity.
- Using technology to automatically control the ventilation, heat and water consumption in the building would allow to change them according to function.

Adaptable infrastructure could be met with a positive attitude from the host community as building accommodation for refugees could be seen as building infrastructure for the host community. From the perspective of the residents an adaptable building can offer more individual solutions per apartment. People are different and require different amount of private and open spaces within their residence.

Creating adaptable infrastructure would have a positive effect on both the newcomer and the host society.

### 3.2.6 Density

Calculated usage of space is crucial when dealing with accommodation for a large amount of people. Space should be managed efficiently by allowing for dense accommodation that considers the necessity for privacy and individuality. The case studies display how space can be at a premium in short-term accommodation, in contrast long-term accommodation should strive for more spacious designs. In contrast to the Tempohomes a vertical building can achieve higher density and consume less land which in turn would lower the cost of the overall project. Higher density housing could foster a community and increased social support between the residents. This could be especially important for refugees, who may be far from home communities and require social support and connection. With the feeling of community, the feeling of safety and security would be achieved by having more people around in case of an emergency. High-density housing could be more cost effective than low-density housing by reducing the cost of land and infrastructure per resident.

Accommodation should have enough density to lower the costs of land and infrastructure per resident, but there should be enough privacy and individuality.

### 3.2.7 Time of construction

Human crises can be unforeseeable and happen quickly. In turn a successful response plan would have to happen quickly. After arriving in the host country and having their basic physiological needs met, refugees require quality living spaces. The construction time of quality accommodation should be fast to create accommodation and start the integration process.

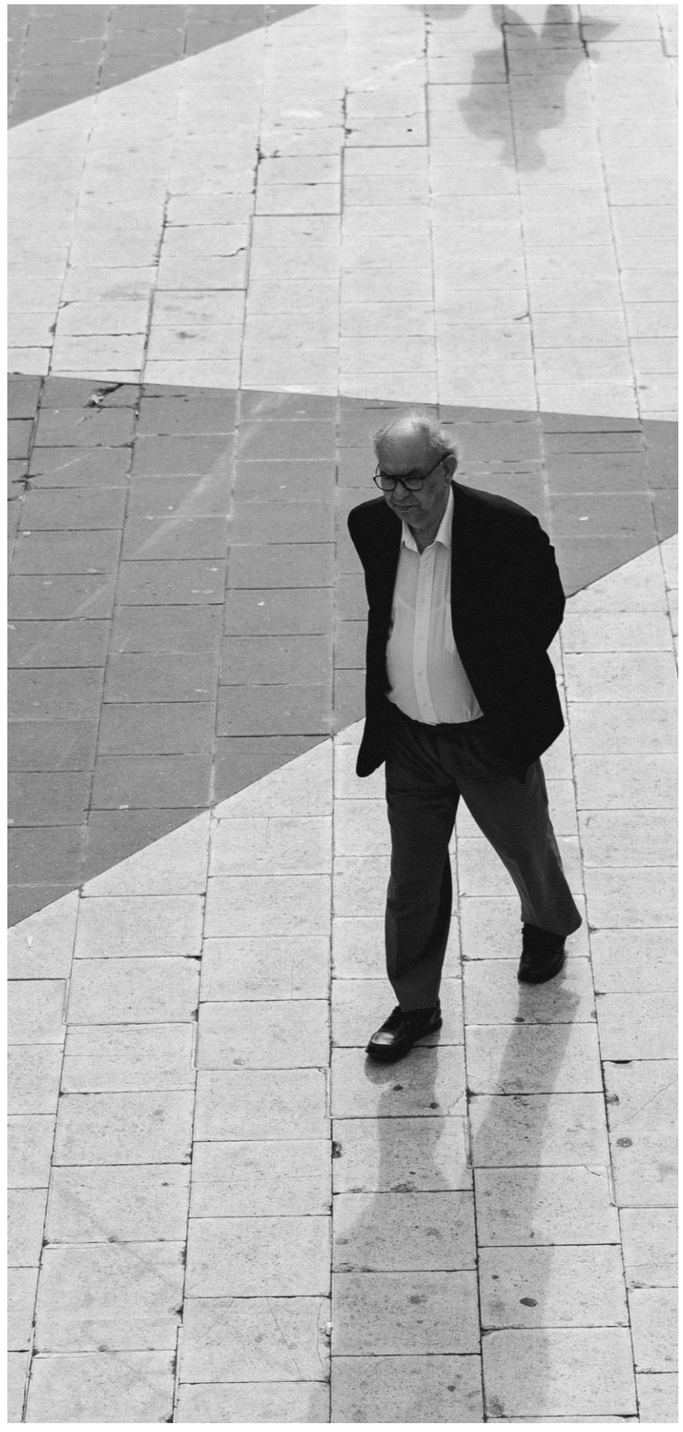
Estonia has a significant industry in producing modules and modular housing with companies for example Harmet, Timbeco and Nord Homes to name a few. Constructing a modular building has quite a few positives over regular construction. The speed of construction is one of the major positives. Installing one module takes about 30-60 minutes making it possible to install 12-13 modules a day (Timbeco Woodhouse, 2019). This construction method is more sustainable as less material is consumed and material repurposing is easier at the end of life. As construction time on site is shorter and less waste is produced the cost of a modular building is lower. Modules produced in a factory have higher precision in fabrication giving the product a higher quality. Refugees would benefit from the fast construction methods and high production quality of modular construction. Meanwhile the host society would benefit from the lower cost and the sustainable solutions that modular construction offers making it a efficient solution to produce high quality housing in a short period of time.

### 3.2.8 Location

Location of the accommodation could have significant impact on the success of integration, for example placing inhabitants in the outskirts of the city could be seen as rejecting them from the society. In contrast, locations with active public spaces and people could help the integration process through socialization. The establishments around the location could become socialization places or offer employment opportunities. Host countries have a list of social services that refugees can benefit from. Refugee centres, healthcare, social benefits, applying for protection or legal aid should be reachable by public transport or be in walking distance. It should not be assumed that refugees have access to private means of transportation. When choosing a location, access to public transport, walking distances or cycling opportunities should be accounted for. Having services in walking distance allows refugees to explore their surroundings and be a part of the social space creating integration. Sustainable ways of transportation could benefit the environment of the host community as well.

Sense of security could be influenced by the location. Locations that are opened up and in big public spaces could take away from the feeling of privacy and security. The community around the location should be accepting of having a social housing or refugee accommodation in their neighbourhood. The perspective of the neighbours around the chosen location should be analysed to understand their views on the subject matter. Understanding the NIMBY factor in the neighbourhood is crucial. The term "NIMBY" stands for Not In My Back Yard and is used for spatial gatekeeping. Gent (2022) defines it as a process where people determine who does or does not belong in a particular space, often resulting in the material exclusion of already marginalized people. While building a social house or accommodation for displaced persons is seen as a common good for the wider community, people from the community might not like if the establishment is in their neighbourhood. Gent (2022) goes on to explain that NIMBY-ism is harmful because it dehumanizes, limits the inclusion of marginalized people in communities, and allows relatively privileged groups to block services that are beneficial to the wider community. When designing for a neighbourhood with a high NIMBY factor it is important to include members of the neighbourhood early in the planning process and explain the necessity and the positives of the buildings planned. Their concerns and feedback should be considered, and changes implemented where possible. Another option would be finding a location in an area with little sense of a neighbourhood, for example areas that see a lot of daily traffic might have an understanding that space is meant and used by everyone. Whichever neighbourhood is chosen, it is important to take the feedback from the local residents into account and design for the neighbourhood.

Aspects previously discussed, for example safety, security and integration are directly related to the location of the accommodation. This emphasises the choice of location when building housing not only for refugees but for a diverse field of user groups.



*Picture 14. Exploring (Rasmus Ink, 2022)*

# 4 URBAN VOIDS

## 4.1 Urban refugee camps

Research implies that the current housing market including the social housing accommodation in Tallinn could not handle a mass influx of displaced persons who would require housing from the government or municipality. The initial solution would be to find alternative living spaces in already existing infrastructure. Though this could not be guaranteed when the mass of people overburdens the accommodation provided by the existing infrastructure. This would lead to Tallinn constructing temporary short-term refugee camps. These camps would consist of canvas tents, which would be erected within the city to provide accessibility to infrastructure and aid. The spaces used for urban refugee camps would have to be vacant, unused or derelict and could be defined as urban voids. This raises a question whether a more adaptable accommodation system could be designed to utilize urban voids and house a mass influx in Tallinn.

## 4.2 Definition

The Metabolist architecture movement in the 1960s Japan interpreted cities as ever-changing organic beings (Craven, 2019). They explained that cities have a limited lifespan and should be designed and built to be replaced (Craven, 2019). The spaces within cities could be explained the same way. Different buildings are torn down and replaced with new ones. A constant process of change and renewal similar to the cells within our bodies. Some spaces are new, some spaces are old, some spaces are deteriorating, and some spaces are unused.

These unused spaces are known as urban voids. The phrase urban void is an inclusive term encompassing unused, underused, abandoned, or misused spaces. The term ‘void’ indicates a lack of presence, a vagueness, or an emptiness, and it implies embedded or potential urban spaces that can be reutilized (Hwang & Lee, 2020). Urban voids are part of the built environment as the built-up environment around them defines them as empty. Both the built and non-built areas are part of the same process of production of urban space (Ebner, 1999) (Nefs, 2006).

*Picture 15. Urban void (Rasmus Ink, 2022)*

## 4.3 Types and classifications

Hwang and Lee (2020) point out that the term "urban void" is an umbrella term applied for different unused spaces in different research articles. The unofficial documentation of these spaces has created confusion in defining them. Urban voids are difficult to distinguish from one another and this is why they could be classified the same. Different urban voids are vastly different and require different solutions, for example a vacant plot and a misused space cannot be compared. They point out the necessity for proper terminology to be more specific when talking about urban voids and propose a table (Table 1) to categorize and reclassify them (Hwang & Lee, 2020).

Through research they have recorded different specific terms applied for different urban voids (Hwang & Lee, 2020). To be more coherent, they describe the spaces to create a common understanding. After a common understanding is reached, new categories are formed which group specific terms under more generalized ones. In the end they end up with five different classifications for the spaces:

- Vacant- Building or land that is unused.
- Abandoned- spaces that have been abandoned regardless of the reason for it.
- Brownfields- Spaces that have been contaminated and are unused because of it.
- Urban void- Temporarily obsolete abandoned derelict sites.
- Leftover space- Spectrum of unused, underused, or misused spaces or accidentally resulting spaces.

This assists future research in implementing more generalised classifications but gathers and clarifies the more specific terminology mentioned in previous articles. The table could be used to group together similar spaces or use very specific terms to separate them.

The first column of the table displays the terms that are mentioned in different articles for urban voids.

The second column provides the description for these spaces.

The third column will reclassify the space under a more generalized classification.

| | | |
|---|---|---|
| Vacant building/ land | Currently unused building or land | **Vacant** |
| Terrain vague; Abandoned structure/ site; Dead zone | Abandoned building, property or unused or unproductive spaces | **Abandoned** |
| Derelict space; Wasteland | Abandoned desolate spaces | **Abandoned** |
| Terra incognita | Abandoned unknown land | **Abandoned** |
| Brownfields; Drosscape | Contaminated sites or generally developed sites | **Brownfields** |
| TOADS | Temporarily obsolete abandoned derelict sites | **Urban void** (narrower meaning) |
| Urban void; Fortuitous voids | Spectrum of spontaneous unused, underused, or misused space or accidentally resulting space | **Leftover spaces** (residual and neglected spaces) |
| Lost space | Disconnected spaces that provide no positive contribution | **Leftover spaces** |
| Leftover space; In-between space; Gap-space | Interstitial space and in-between space among infrastructure | **Leftover spaces** |
| Indeterminate space; Ambivalent landscape | Unused, neglected non-mainstream space | **Leftover spaces** |
| SLOAP | Space left over after planning | **Leftover spaces** |
| Over-planned public space | Underused mainstream space | **Leftover spaces** |

*Table 1. Reclassification of urban voids* (Hwang & Lee, 2020)

## 4.4 Emergence of voids

Empty spaces within the urban fabric are as common as buildings. They form an integral symbiosis where one defines the other. While the emergence of new buildings is well understood as growing populations demand for a growth of cities, the emergence of empty spaces and voids is less known.

Akkerman and Cornfeld (2009/ 2010) offer a generalized explanation which states that these spaces emerge by accident, sometimes as the result of negligence or omission, sometimes as simply a feature of time flow in the city. Hwang and Lee (2020) go into more detail in trying to understand why urban voids emerge. They conclude that studies frequently mention political inefficiencies, including inefficient decision-making processes and a lack of coordination among the policymakers responsible for the emergence of urban voids, as a major reason for the creation of underused or misused spaces (Hwang & Lee, 2020). They suggest urban voids emerge as a result of planning processes, emerge without any specific reasons, by accident or omission, or naturally as a result of the temporal transfiguration of urban settlements (Hwang & Lee, 2020) (Akkerman & Cornfeld, 2009/ 2010). The research indicates that a major reason for emerging urban voids is the legislation and bureaucracy related to city planning. It could mean that policymakers can not foresee the spatial consequences of their policies. For example, policies that are put in place to provide security in case of a fire by creating room in between building could inadvertently cause urban voids. Miscommunication or the lack of communication could play a major part in emerging urban voids as development is handled plot by plot, which could create issues in communication between different developers. Developers focusing on their plot and not the complete neighbourhood could create urban voids without realisation. Additional research explains that most of the small-scale urban voids occur and withstand because these spaces are not incorporated into the initial development process or because they are unbuildable due to their abnormal shape (Northam, 1971) (Pagano & Bowman, 2000). This would put the blame onto developers for not incorporating smaller spaces in their projects. Akkerman and Cornfeld (2009/ 2010) state that, sometimes the flow of time in the city creates abandoned and derelict buildings which deteriorate and turn into urban voids. Neglected urban voids tend to maintain their derelict status since they have ownership issues, possess undevelopable physical conditions, or are uncategorized in the common planning system (Hwang & Lee, 2020).

The emergence of urban voids is deeply related to the complex processes that are in place for cities to evolve and grow. Legislation and bureaucracy with not enough forethought, miscommunication between developers, planners and city officials, small spaces that are left behind and the flow of time, which erodes the built environment are all possible reasons why urban voids emerge. As the emergence of urban voids is related to natural processes happening inside the city it is impossible to stop them from emerging. The focus should rather be on understanding how to utilise urban voids in cities.

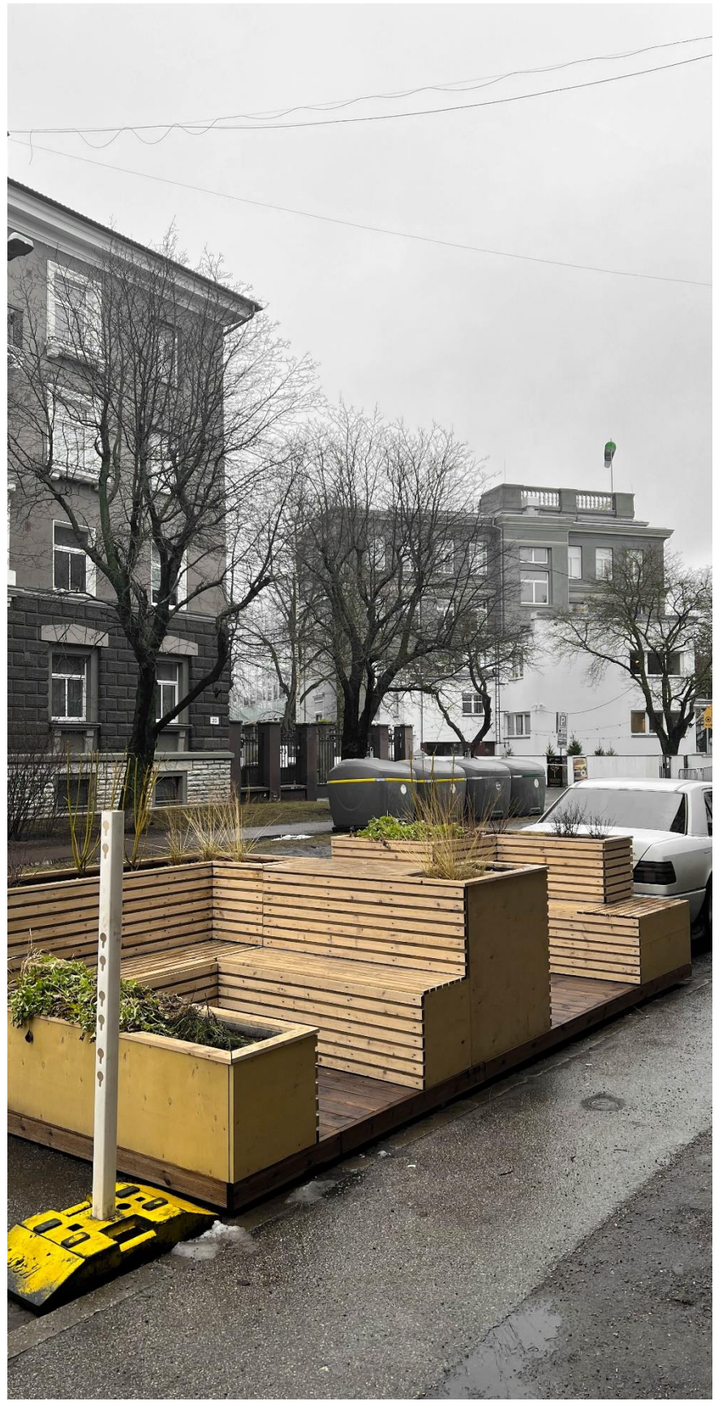
*Picture 16. Remnants of a building (Rasmus Ink, 2023)*

### 4.4.1 Finding function

Efficient use of space the is key to a growing city. Growing populations around the world are creating more necessity for space within cities. Urban voids could offer the relief of new space within dense city areas. The vagueness of urban voids availability and function limits their attractiveness for formal planning, design and development processes (Rahmann & Jonas, 2011). But with growing demand, developers and city planners could be motivated to compromise in order to find new solutions within the tightly built-up areas.

Studies recognize the inherently abundant potential of urban voids as an alternative redevelopment element and an opportunity to experiment with green strategies and promote communal integration (Hwang & Lee, 2020). Reconnecting previously unused spaces, neighbourhoods could have new public spaces, which would promote communal integration. Urban voids can be strategically utilized for economic development that contributes to increases in tax revenue and attracts migrating residents back to the city (Pagano & Bowman, 2000). The re-densification of urban voids by infill development would further release and control the land pressure of the urban sprawl (Northam, 1971). Using urban voids would act as a counter measure to the urban sprawl that is happening in cities worldwide. In addition to residential functions, urban voids have the potential to function as an alternative to conventional public spaces and enable spontaneous and unobstructed activities that are likely to involve diverse social groups (Kim, 2016) (Hou, 2010). Infill development could be the key to densifying cities. Infill development sees buildings built on plots of land with older building and available space by offering to renovate the building in turn for developing a new building on the property (Puustinen, Pennanen, Falkenbach, & Viitanen, 2018). As urban voids are tied to different plots, deals could be made to develop them. When developing urban voids into buildings it could have the positive effect of slowing down urban sprawl. Yet, when developing urban voids to social spaces they would still benefit the neighbourhood.

Nefs (2006) points out that unused urban space should be described as a process or a cycle, rather than a static phenomenon. The dynamic role it plays in the metropolis is related to its continuous creation, conservation, and transformation (Nefs, 2006). Buildings will become abandoned, buildings will dilapidate, and they will be demolished to empty up space for new buildings. The process of demolishing old buildings could create urban voids, but as discussed before, the main reason why urban voids emerge is because of city planning and development. There cannot be one without the other and creating one would in turn create the other and even if one does not create the other, it will dilapidate to a stage where it becomes the other. There cannot be a way of eliminating the concept of an urban void at is too tightly linked into the urban fabric. This calls for a new perspective when handling urban voids. Rather than valuing space from potential development perspective it should be valued based on the effect that is has on the area and community around it.



*Picture 17. Small scale intervention in Tallinn (Rasmus Ink, 2023)*

### 4.4.2 A second perspective

Urban voids are depicted as negative in the realm of city planning and urban theory. Building into the voids is futile as this would only lead to more voids. An alternative understanding of urban voids is crucial to accept them as a valuable part of the urban fabric.

Hermann (2018) compares humans to animals by discussing the essence what differentiates humans from animals. He states that the essence of being a human is precisely the ability to remain in development, to be immature and playful, to be less than an animal (Hermann, 2018). Humans can revert back to a playful child state which animals do not. People can implement playfulness in their everyday lives, for example designers can be playful when designing spaces. But in order to be playful when designing spaces, different spaces are required to be available. To be more specific, unused, vacant spaces and urban voids are required in order to invoke people to play around with them. Urban voids invoke people to develop them, this activates imagination and creativity, urging humans to play around with the space. This perspective defines the necessity for urban voids as urban voids. They function as informal adventure playgrounds that do not prescribe uses and programs but leave space for creative imagination and invention (Rahmann & Jonas, 2011). These relationships cannot be recreated in built-up environments. When an object is finished it exists the way it exists, there is nothing left to do. In contrast, unfinished space has value in being unfinished, it creates the necessity to finish it, which provides humans the opportunity to be creative and playful.

Hermann (2018) does not finish his line of thought there. He goes on to define the necessity for urban voids in the urban fabric. He describes how the urban fabric consists of chaos (unused space) and order (built-up space). Spaces in chaos are a part of a self-creation process where they reside in a position between the loss of former identity and the obtaining of a new one (Hermann, 2018). The same way a process occurs in the urban fabric by having spaces being built-up and spaces being torn down. The process of emerging and fading spaces cannot be stopped as most spaces reach a point of exhaustion and end up as chaos. Sustaining this state of permanent self-creation is difficult in places that are totally complete and function-filled, with any incompleteness removed in a quest for total efficiency or perfection (Hermann, 2018). Humans should protect and preserve chaos as this allows them to definite ongoing relational patterns between order and disorder that are able to sustain continuous self-organization, with its cycles of formation and deformation (Hermann, 2018). Urban voids help to maintain the balance of spaces within the urban fabric. The balance of spaces is vital as both the extremes, fully built-up space and fully empty space, would lead to different outcomes other than a city. Urban voids help maintain the balance of spaces and define a city.

Different articles found alternative uses for urban voids by allowing plant life and animals to take over. Akkerman and Cornfeld (2009/ 2010) describe how the unexpectedness that leftover spaces express is integrated within the mainstream space of the city. In a regulated, surprise-free city-form appropriate landscaping could turn the leftover space into a small haven of foliage or sudden tranquillity (Akkerman & Cornfeld, 2009/ 2010). In addition, Rahmann and Jonas (2011) find function by using urban voids for vegetation. Urban void spaces offer the capacity to substantially contribute to sustainable urban regeneration through their potential for ecosystem functions. The spaces potentially can function as microhabitats, buffers for urban heat islands and mitigation of other extreme climate events. There are well known facts about using urban vegetation for CO2 absorption, improving air quality and filtering water (Rahmann & Jonas, 2011). Using urban voids for flora and fauna will have positive effects on the city without destroying the void. This would make urban voids beneficial to the city and preserve their function as a space that creates playfulness and innovation.

Alternative research defines the value of urban voids in the fact that they offer something different from the norm within the city. They offer the possibility of accidental discoveries and non-productive activities, experiences, which are unplanned and momentary (Rahmann & Jonas, 2011). Leftover space can offer something of a sporadic, abrupt, and unexpected opportunity to craft a moment of urban revelation. As a crevice of literal, as well as figurative, green nature, the leftover space can come alive in a sudden flash of playful moment of asserted individuality (Akkerman & Cornfeld, 2009/ 2010). They form distinct spaces outside a controlled urban norm. People should consider urban voids as an alternative to the predictable spaces of consumption and to hold true potential for urban wilderness and biodiversity, especially in fluctuating, dynamic, ever-changing networks (Rahmann & Jonas, 2011). By going against the norm of built-up spaces, urban voids can offer alternative experiences. Their value could be as simple as being different.

In conclusion, urban voids have more value as urban voids than as spaces that should be developed. They invoke people to consume them by being empty and help push humans to innovate and be creative. They maintain the balance of built-up and empty spaces allowing for a process of self-creation which defines a city as a city. Without losing their value as urban voids they could be occupied by animals and plants, which improve air quality and filter water making the city environment cleaner. Furthermore, urban voids have value in just offering a different experience within the normalized built-up spaces. However, a balance within the urban fabric should be prioritized, there should not be too many urban voids or too many built-up spaces.

### 4.3.3 Provoked by an urban void

The previous chapter concludes that urban voids are valuable when left empty. It could be seen as hypocritical by designing a project within an urban void as this master thesis does. It needs to be recognised that as a master thesis project it will never be realised. The project exists as a design exercise invoked by existing urban voids within the city of Tallinn and relevant matters on the communal and global scale. This master thesis project proves how urban voids invoke humans to use them.

## 4.5 Design exercises in urban voids

### 4.5.1 3BOX by Malka Architecture

The project is located on the river Seine in Paris, France. The combination of old two story and a renovated seven story building on the site have created a shift between the heights of buildings. A five-story vertical wall space on top of the two-story building serves as an urban void. It could be argued that the vertical space already functions as a canvas for graffiti artists, but the new building would not block the surfaces used by graffiti artists and so it preserves its function.

The 3BOX housing units are possible thanks to "Ia Loi Alur", a new building legislation which allows for urban heightening (Malka Architecture, 2016). The legislation does not require ownership of the building plot and the right to build is obtained in exchange for paying a part of the existing buildings renovation costs (Malka Architecture, 2016). It works on the same basis as infill development, but rather than building on land it benefits from the access to vertical space above the building.

The building is a modular structure. The units are suspended on top of the two-story building leaving plenty of empty space in between. Each level has a terrace on top of it leaving an empty floor between two levels. The modules are suspended with steel columns and a steel structure. Floor to ceiling windows open up to views of the Seine. Malka Architecture webpage offers no plans for the building leaving no explanation on how access to the apartments is designed.

The architect claims that this sort of development can produce housing 40% below the real estate market price (Malka Architecture, 2016). In addition, the project can be completed in a short time period by using a unique technique of prefabrication and modules. The building offers an ecological and economical solution to building within the city and helps to slow down urban sprawl (Malka Architecture, 2016).

On the Malka Architecture homepage the status of the building is states as „In progress" as of 2016 (Malka Architecture, 2016), although the site has seen no development as of 2021 Google Maps images. This raises concerns whether the legislation does not actually apply for the building or if there was additional legislation that could possibly have hampered the project. Regardless of this, the concept of the building offers new space utilisation solutions within cities creating an affordable solution to housing, a sustainable way to densify the city and to combat urban sprawl.

*Picture 18. 3BOX (Malka Architecture, 2016)*

### 4.5.2 Shelter with Dignity by Framlab

Since the 1930s Great Depression, homelessness in New York has reached its highest levels - over 60000 people as of 2021 (Coalition for the homeless, 2023). The current shelter system is at capacity requiring new shelters. The city used SRO-s (single room occupancy) units that were affordable and acted as a social housing system for the city. But in 1955 changes to the housing code prohibited new construction of SRO type apartment buildings (Framlab, 2018). In the 1970s the final SRO buildings were demolished. Since then, the amount of homeless has been on a steady rise. Additional factors that contribute to rising numbers of homeless:

- Widening housing affordability gap
- Cutback on housing benefits
- Weakening rent regulation laws

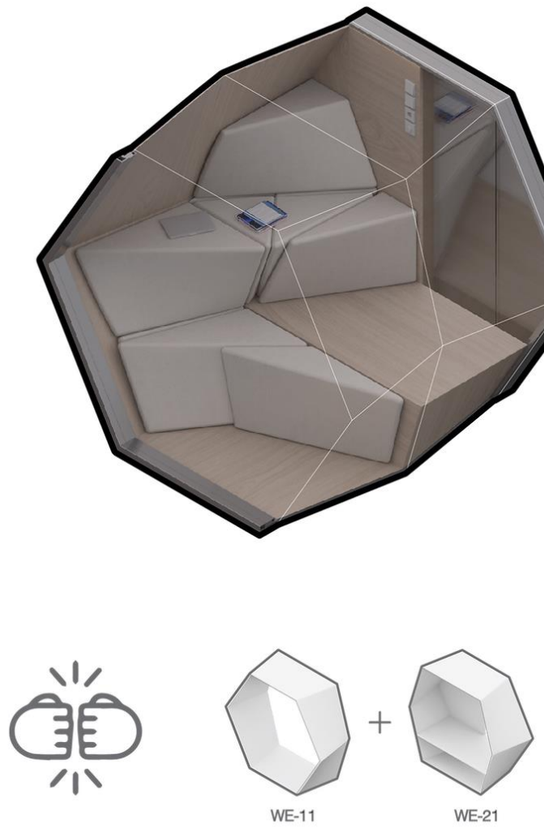
(Framlab, 2018)

This leaves two possible solutions to fix the homeless question. New York could improve the benefits of the housing assistance programs or they could build more low-income housing. But in the case of New York, it is difficult to find land to build on. Real estate moguls have bought up a lot of land in the city and the prices for vacant land are high (Framlab, 2018). Yet, vertical land exists in excess.

Shelter with Dignity exploits the vertical space on building facades that have no windows. Blank walls can be defined as vertical real estate. Walls are initially covered in scaffolding as this is a construction element that exist in large quantities, is easy to construct and takes up little space. Scaffolding acts as the access to the shelters. The modular shelter system is then attached to the scaffolding. The shelters are hexagonal in shape allowing them to fit tightly and consume space efficiently. Modules are constructed from steel and aluminium with the interior of the module made of 3D printed plastic, which allows for multiple designs to meet the functional and spatial needs of the residents (Framlab, 2018). Furniture, lighting, and storage solutions could be integrated in the 3D printing process.

The front glass facade of the pod would be made of smart glass with a thin layer of film diodes (Framlab, 2018). This allows the glass to be see-through on one side and mirroring on the other side, which offers privacy. In addition, the film diodes can display artwork, advertisement, public information, or other digital content enabling revenue opportunities (Framlab, 2018).

Framlab (2018) acknowledges that Shelter with Dignity is not a singular solution to the issue but rather an instrument that is a part of the solution. Framlab have designed an efficient and practical solution to consume emerging urban voids in the city of New York.




*Scheme 6. Shelter with Dignity, module (Framlab, 2018)*

*Picture 19. Shelter with Dignity (Framlab, 2018)*

# 5 IDENTIFING URBAN VOIDS IN TALLINN

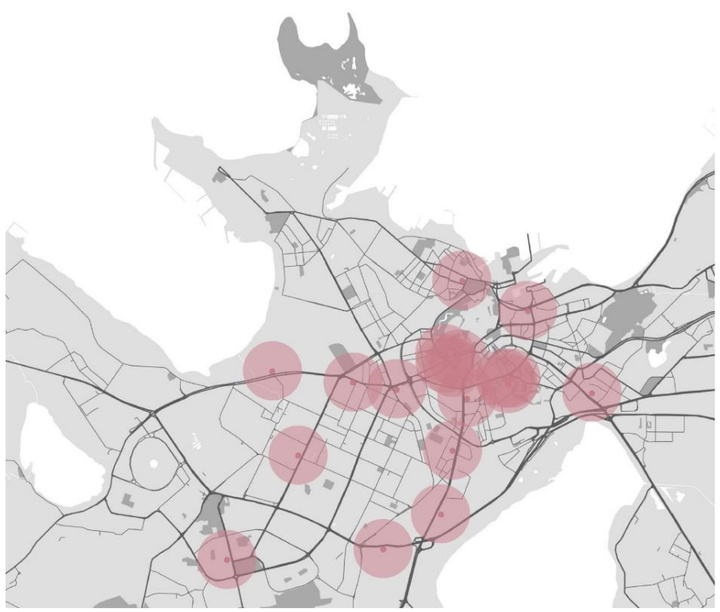
## 5.1 Defining the area of analysis

Earlier chapters emphasise that refugees require help from the host community in order have their needs met and to start the process of integration. Crisis response plans are set in place by the host communities, which direct refugees to services where they receive guidance and support. The city of Tallinn (2022) has listed crucial services refugees must visit in order to obtain benefits or find employment – Scheme 7. Understanding the necessity to visit these locations and the lack of individual transport among refugees, a map of social services combined with a fifteen-minute walking radius around them was created Scheme 8. The overlapping of the fifteen-minute walking radiuses highlights the areas where different services are most accessible and closest to each other. It should be noted that the refugee centre located in Kalamaja offers a diverse range of services in one facility and has a higher value in contrast to other monofunctional facilities. The final areas chosen for further analysis can be seen on Scheme 9.

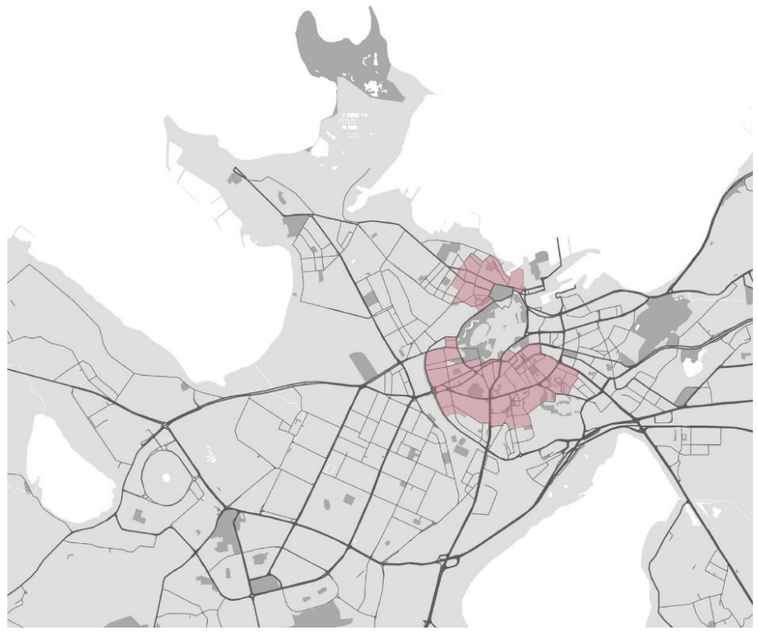
Most of the area spans over the centre of Tallinn in the Kesklinn administrative district. More specifically the area covers Kalamaja, parts of Kelmiküla, Kassisaba, Uus-Maailm, Tõnismäe, parts of Kesklinn, Tatari, Sibulaküla, Maakri, Veerenni and Keldrimäe subdistricts. The area spans over about 300 hectares.

*Picture 20. Functional or empty space (Rasmus Ink, 2022)*

*Scheme 7. Crucial services*



*Scheme 8. 15 mintue walking radius*



*Scheme 9. Areas of analysis*

## 5.2 Necessity for multiple sites

Mass influx could cause thousand, ten thousand or even a hundred thousand people to enter the country. This creates a necessity for long-term housing. The constraints of building efficient long-term housing lie in the fact that the necessity for social housing or housing in general is much more insignificant than the amount a future mass influx requires. If abundant housing would be built to accommodate a mass influx, the same housing could be left empty and derelict after refugees return to their home countries. This constrains the necessity for housing to the necessity of the local community. In addition, this raises the question of how the building is going to be used after the primary user group changes. As only 3 counties out of 15 have accommodation provided by the state, there would be a possibility of later dismantling the buildings and moving them to other counties to build a more effective accommodation system across Estonia. But in the context of this master thesis only the accommodation system in Tallinn is explored.

The factors defining the necessity for additional accommodation pointed out in this research are:

- Issues of density, growth of social housing users and the necessity for alternative social housing options discussed in paragraph 2 Social Housing in Tallinn.
- The amount refugee influx in Tallinn discussed in paragraph 1.3 Situation in Tallinn
- The number of refugees losing their short-term accommodation in Tallinn discussed in paragraph 1.4 Accommodating Displaced Persons in Tallinn
- The issues with the obtaining long-term accommodation in Tallinn discussed in paragraph 1.4 Accommodating Displaced Persons in Tallinn

Taking all of this into consideration, this research proposes the necessity to house 800-1000 people by creating new social accommodations during a future mass influx of displaced persons in Tallinn. This could lessen the impact of a mass influx on the social housing system and the housing sector in the city. In addition, other functions could be analysed which could offer more alternative functions to the buildings, for example offices. Having a wider analysis on the need of rentable spaces within Tallinn could allow for more building to be built accommodating more displaced persons.

With multiple sites requiring development a universal and flexible construction method is required. This would offer an efficient planning pro helps to keep the costs down, scess for different locations, keep the costs down and use the response time effectively. Sites should preferably have a similar urban void to have a similar understanding on how to implement the space across all locations.

This project should not be approached as a single solution to housing a mass influx. The solution proposed is rather an instrument that plays a part in the solution. The amount of accommodation required during a mass influx can be dependent on multiple complex factors and cannot be predicted with certainty. Furthermore, the amount of accommodation provided would not be directly related to the number of refugees in need of accommodation but rather the amount of accommodation that would be viable in the social housing sector of Tallinn.


*Picture 21. Urban fabric (Rasmus Ink, 2022)*

## 5.3 Guidelines

Maintaining the selection criteria for urban voids related to the typology of the building is done through specific guidelines. Guidelines define different aspects of the urban voids in order to sort out the viable urban voids from the rest. Each guideline is explained further to link it back to the research in question.

### 5.3.1 Spatial point of view

Urban void is space. When analysing the urban fabric for urban voids it is crucial to concentrate on spaces. Urban voids cross the borders drawn between plots and they cannot be defined by a plot. Urban voids flow between objects in the urban fabric.

### 5.3.2 Scale

Urban voids come in different shapes and sizes. When analysing an area for urban voids the selection criteria put in place could come up with a hundred or a thousand voids. It is important to estimate the scale of the future structure in order for it to fit in the void without having a negative effect on anything around it.

### 5.3.3 Privacy

The fear of harassment, racially motivated violence and discrimination have a significant impact on the integration of refugees. Because of this, the privacy at the location of accommodation is important. Urban voids in open and large-scale public spaces should be avoided. Urban voids in smaller streets or in between buildings should be preferred.

### 5.3.4 Land ownership

The context of the project defines the necessity for government or municipality owned land, which makes it important to pick sites according to the land ownership. As social housing is owned by the municipality or government, it is logical to build it on land that they already own. In addition, requiring a fast construction period means that buying additional land would consume precious time and waste resources that could be handled more efficiently.

### 5.3.5 Connection to already existing infrastructure

Urban voids are tied to already existing infrastructure, otherwise they would be defined as a vacant site that stands as undeveloped. Comprehending the functions of infrastructure they connect to could define their own function and explain how they emerge.

### 5.3.6 Connection to social space

The importance of integration through socialization cannot be overlooked in the context of this project. It is important for social spaces to exist around the urban void chosen for the project. Additionally, the urban void itself could have the option of being turned into a social space.

### 5.3.7 Function

Urban voids are tied to existing infrastructure and could have an alternative function that differs from common city spaces, which makes them difficult to distinguish. The function could still leave the space empty from the human perspective. Having non-humans use an urban void could be seen as a function, but developers might overlook it to make profits. In addition, Rahmann and Jonas (2011) point out that rather than representing conditions of emptiness or neglect, urban voids are often turned into 24 hours car parks and thus follow the practice of vacant space occupation worldwide. When dealing with an empty humans tend to create order by providing the space with a fabricated function. For cities worldwide this function is a car park. This should be seen as a fabricated or fake function just to occupy the space. If an urban void has a function that serves a different purpose other than the city, effort should be put into preserving the space.

### 5.3.8 Ecological value

The value of a space is usually defined from the human perspective. Yet, certain urban voids with animals and plant life could be seen as a minor ecosystem. These spaces should be left undisturbed as an argument for already having a function could be made.

### 5.3.9 Historical value

In depth analysis of an urban void is a must in order to understand if it could potentially have historical value. Historical value might not always reveal through architectural factors. Spaces that are associated with past events, people or cultural movements are more difficult to distinguish. When dealing with a site that has historical value preservation of the site should be preferred.

### 5.3.10 Value to developers

Urban voids could be linked to vacant plots. When this happens, it should be evaluated whether the construction in the void could hinder future development of the vacant plot bordering with it. It should be noted that a construction within an urban void would be restricted to the void. This could mean that the design could suffer and compromise to work with the void and because of that do not achieve its full potential. Meanwhile, a vacant plot could offer a more diverse range of design solutions that could work better within the neighbourhood.

### 5.3.11 Insolation

Urban voids are usually left over spaces or unwanted spaces in between buildings or infrastructure and the sunlight reaching them could be obstructed. It is important to understand which directions allow for sunlight into the urban void and work around it.

## 5.4 Site selection process

Further analysis into identifying urban voids is done with Google Maps Streetview function. Streetview offers an efficient way to analyse a considerable part of the city from a spatial point of view. Care should be taken when the Streetview images have been taken long time ago, as the cityscape is in constant change. Areas within the analysis area that were not accessible in Streetview were analysed in person. After identifying the sites, they were confirmed and overlooked in person.

During the analysis a total of 73 urban voids were identified through the guidelines. The most important factors when choosing a site were the scale, the amount of light received and the land ownership. Most of the sites are related to blank vertical walls, car parking lots and old garages. More sites were identified than mentioned but most of them were too minor to be considered. In addition, urban voids could be interpreted differently by individuals which means that different individuals might come up with different amount and selection of urban voids. Space is perceived only by the observer and even when defining the urban voids, the final decision to define something as an urban void is still fully dependent on the person defining the space.

*Scheme 10. Chosen urban voids (Rasmus Ink, 2023)*

### 5.4.1 Bridging the gap – 9 chosen sites

To have enough accommodation that could fill the gaps in the social housing system in Tallinn and provide accommodation to refugees, 9 sites were chosen. It is expected that most sites can accommodate about 80-120 people in long-term housing conditions, with the exception of one site that was picked to demonstrate a small-scale intervention. In total this would house about 640 to 960 people.

The sites were mainly chosen because of their connection to public spaces, private locations, government or municipality land ownership, sufficient access to sunlight, moderate noise levels and the scale which could possibly house about a 100 people. In addition, the urban voids in each site are similar and allow for similar solutions.

*Picture 22. Tatari 37 (Rasmus Ink, 2023)*

*Picture 23. Toompuiestee 27 (Rasmus Ink, 2023)*

*Picture 24. A. Adamsoni 10 (Rasmus Ink, 2023)*

*Picture 25. Vana- Veerenni 8 (Rasmus Ink, 2023)*

*Picture 26. Tartu Maantee 40 (Rasmus Ink, 2023)*

*Picture 27. Liivalaia 40 (Rasmus Ink, 2023)*

*Picture 28. Võlvi 6 (Rasmus Ink, 2023)*

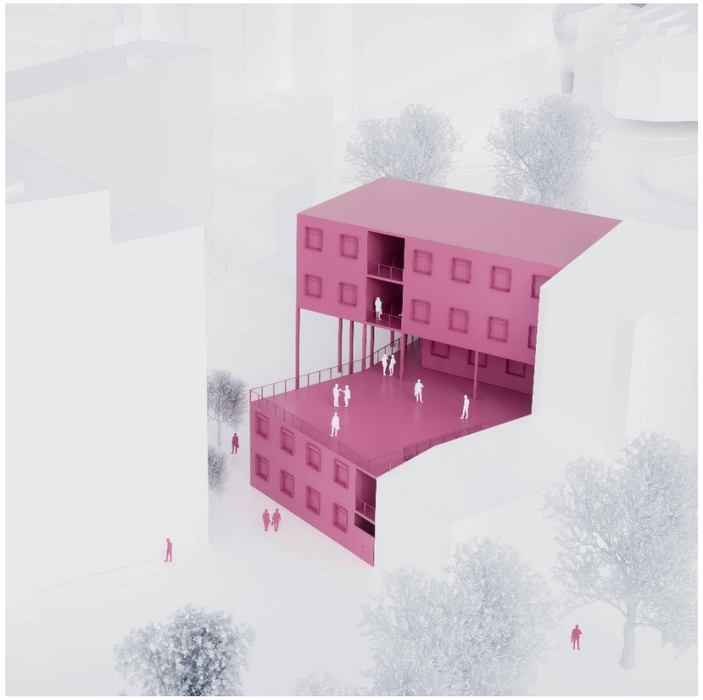
*Picture 29. Tatari 12 (Rasmus Ink, 2023)*

*Picture 30. Endla 9/ Toom- Kuninga 10 (8) (Rasmus Ink, 2023)*

### 5.4.2 Adaptability to different scale – 3 basic sites

Three sites were chosen to be developed on a basic level in the context of this master thesis. This is done in order to prove the adaptability of the construction to different scale sites. By using simple elements for construction, they allow for a shorter planning process while still offering a variety of individual designs for different sites.  The sites chosen for basic designs are picked for their scale.

*Render 1. Tatari 37 - small scale design*



*Render 2. Toom- Kuninga 8 (10) - medium scale design*

*Render 3. Vana- Veerenni 8 - large scale design*

### 5.4.3 Project site – 1 detailed site

The project site chosen is the Endla 9/ Toom- Kuninga 10 (8) urban void. The urban void is part of a vertical wall, which has been left as is since the building occupying the site, Toom-Kuninga 8 was demolished. This was done to free up room for the new National Library of Estonia. Under one part of the wall is a flower bed on a slope and connected to it is a car parking lot that is owned by the National Library of Estonia. The site was chosen because of the insufficient connection between the National Library of Estonia and the neighbourhood which was demolished when the library was built. Analysing the site, it presents a neighbourhood that was sliced in half with no attempt in connecting the environments. The building that would have been occupying the urban void would not have been in the way of the new library building.

During the research a certain reason for why the building of Toom- Kuninga 8 was demolished could not be found. Yet, the current site can still be clearly defined as an urban void because of the blank wall space and the car park. When analysing the car park, it became apparent that it was very inefficiently planned. The parking spaces had an irrational layout, with spaces existing that would be blocked if the parking lot was at a full capacity. Other parking spaces were not up to standards because of the insufficient amount of room required for manoeuvring, seen on Picture 27. Looking back in time to understand if the parking lot was planned inefficiently from the beginning it was determined that an original alternative layout existed, which was more efficient and did not create any blockages as can be see on Picture 28. The redesign can be attributed to Estonia developing their own standards for parking lots. The standard which states the rules for parking, EVS 843:2003, was initially approved in 2003. Picture 29 demonstrates how the layout has been changed in 2003.  This defines the space under the leftover spaces category by defining it as a misused space or accidentally resulting space making it an urban void.

The full site analysis follows in the project part of the master thesis.

*Picture 31. Endla 9/ Toom- Kuninga 10 (8) (Rasmus Ink, 2023)*

*Picture 32. Current layout (Maa-Amet, 2017)*

*Picture 33. Original layout (Maa-Amet, 1994)*

*Picture 34. Changed layout (Maa-Amet, 2003)*

# CONCLUSION

High possibility of future humanitarian crisis caused by climate change highlight the necessity for a response plan in case of a mass influx of displaced people in Tallinn. Research highlights the need for about 800-1000 additional social housing spaces and government owned housing options in Tallinn. Alternatively, social housing could be used by displaced persons as long-term accommodation. However, an adaptable design should be implemented to be prepared for a changing user group if refugees leave to their home country. Even without a mass influx it is necessary for Tallinn to improve the current social housing system. The large number of urban voids identified in the centre of Tallinn offer an effective solution, which could be used to house displaced persons. The central location fulfils the needs of refugees and allows for contact between the host society and the newcomer society, which could create successful integration. The guidelines created could be used in the future to identify urban voids in Tallinn. This would allow city planners or policymakers to include them in future development plans. The use of these spaces could densify the city and slow down urban sprawl, which is a relevant issue in Tallinn. However, not all urban voids should be developed and rather turned into spaces for non-humans or just left as is as this could have a more positive effect on the city and the community.

It should be noted that this study has been primarily concerned with the need for social housing in Tallinn and how this could be implemented in the project. Further analysis of the need for functional space, for example offices, could be conducted in Tallinn. This would allow for more adaptable functions for the building, which would allow for more sites developed and more people housed. In addition, the analysis of urban voids is only concentrated on an area in the city centre. Further analysis of urban voids in Tallinn should be conducted as identifying these spaces would help find use for them and possibly slow down urban sprawl.

This project should not be approached as a single solution to housing a mass influx. The solution proposed is rather an instrument that plays a part in the solution. The extent of a humanitarian crisis is unpredictable and the amount of displaced people deciding to stay in Tallinn is difficult to comprehend, which requires work on a broad regulatory and policy-making level. Nonetheless, design should be a part of that process.

To conclude, there is a necessity for a response plan in case of a future mass influx of displaced persons in Tallinn. Furthermore, the need for additional social housing within the city is prevalent. This creates an opportunity to create adaptable buildings which could fulfil the needs of different user groups. By implementing a simple and adaptable design, the construction process would use less time, cost less and be adaptable to different sites. Analysis of Tallinn displays an abundance of urban voids which could be used for the project. The central locations in dense areas could help increase the chance of successful integration and slow down urban sprawl. Guidelines created by this paper could possibly be used in future work to identify the urban voids in Tallinn.

## KOKKUVÕTE

Kliimamuutustest tingitud humanitaarkriiside suur tõenäosus vajab tegevuskava, mis keskenduks ümberasustatud inimeste majutamisele Tallinnas. Teadustöö jõuab järeldusele, et Tallinnasse on luua ligikaudu 800-1000 täiendavat sotsiaaleluruumi ja riigile kuuluvat elamispinda. Alternatiivsel saab neid elamispindasi kasutada ümberasustatud isikute pikajaliseks majutamiseks. Majutus peab olema kohandatav, et vastata erinevate kasutajate vajadustele juhuks kui põgenikus naasevad oma kodumaale. Hoolimata massiliselt põgenike sissevoolust on Tallinnas vaja parandada sotsiaalkorterite süsteemi. Tõhusa lahenduse hoonete ruumi jaoks pakuvad Tallinna kesklinnas asuvad tühimikud. Kesklinnas asuvad tühimikud pakuvad põgenikele paremat ligipääsu linnale ning suurendab võimalust luua kontakte kohaliku ühiskonnaga, mis suurendab võimalusi edukaks integratsiooniks. Tühimike tuvastamiseks loodud juhiseid saab kasutada Tallinna tühimike tuvastamiseks, et linnaplaneerijad saaksid neid kasutada tulevaste projektide tarbeks. Tühimike kasutamine tihendab linna ja pidurdab tänu sellele valglinnastumist. Siiski ei tohiks kõiki tühimikke täis ehitada, vaid pigem jätte ruum mitteinimestele või tühjaks, sest see võib pikemas perspektiivis olla kasulikum linnale ja kogukonnale.

Kuna teadustöö käsitleb põhiliselt Tallinna sotsiaaleluruumide vajadust ja kuidas seda antud projektis rakendada siis tuleks täiendavalt uurida vajadust teistsuguse funktsiooniga üüripindade järele Tallinnas, näiteks kontoripinnad. See lubaks hinnata hoonete vajadust laiemas perspektiivis, mis lubaks ehitada rohkem ja majutada suurema hulga inimesi. Lisaks on linna tühimike analüüs koostatud vaid kesklinna piirkonna põhjal. Linna tühimike analüüsi peaks koostama tervel linna kohta, et leida nendele kasutust, mis aitaks pidurdada valglinnastumist.

Teadustööd ei tohiks käsitleda lõpliku lahendusena massilise põgenike sissevoolu majutamiseks. Pakutud lahedus on vaid üks osa lõplikust lahendusest. Humanitaarkriisid on ettearvamatud ning pole võimalik ette näha Tallinna elama asuvate põgenike hulka. Sellise probleemi lahendamine oleneb laialdasematest poliitilistest ja reguleerivatest protsessidest. Sellegipoolest peaks disain olema selle protsessi osa.

Tallinnal on vaja tegevuskava, mis keskenduks tulevasele massilisele põgenike sissevoolule. Lisaks on Tallinnas vajadus täiendavate sotsiaalmajutuse järele. See loob võimaluse luua kohandatavaid hooneid, mis vastaksid erinevate kasutajarühmade vajadustele. Tänu efektiivsele ja kohandatavale disainile on võimalik kulutada vähem aega ehitusprotsessile, hoida kulud madalal ja püstitada hoone erinevates asukohtades. Linna analüüs tõestab, et Tallinnas on rohkelt tühimikke, kuhu hooneid püstitada saab. Linna keskuses asuvad tühimiku võivad aidata kaasa edukale integratsioonile ja aeglustada valglinnastumist. Käesolevas töös koostatud suuniseid saab edaspidi kasutada Tallinna tühimike tuvastamiseks.

## REFERENCES


Akkerman, A., & Cornfeld, A. F. (2009/ 2010). Greening as an Urban Design Metaphor: Looking for the Citys Soul in Leftover Spaces. *The Structurist*, pp. 30-35. Retrieved from https://www.academia.edu/1486184/Greening_as_an_Urban_Design_Metaphor

Arenas, N. (2005, 01). The Concept of "Mass Influx of Displaced Persons" in the European Directive Establishing the Temporary Protection System. *European Journal of Migration and Law 7*, pp. 435-450. doi:https://doi.org/10.1163/157181605776293246

Berg, J. A. (2009). Core Networks and Whites' Attitudes Toward Immigrants and Immigration Policy. *Public Opinion Quarterly, Volume 73, Issue 1*, 7-31. doi:https://doi.org/10.1093/poq/nfp011

Castles, S., Korac, M., Vasta, E., & Vertovec, S. (2002). *Integration: Mapping the Field.* London: London: Home office. Retrieved from https://forcedmigrationguide.pbworks.com/w/page/7447907/Integration%3A%20Mapping%20the%20Field

City of Tallinn. (2022, 08 29). *Korduma Kippivad Küsimused*. Retrieved 04 23, 2023, from Tallinn.ee: https://www.tallinn.ee/et/ukraina/korduma-kippuvad-kusimused

City of Tallinn. (2022, 08 29). *Korduma Kippuvad Küsimused*. Retrieved 04 23, 2023, from Tallinn.ee: https://www.tallinn.ee/et/ukraina/korduma-kippuvad-kusimused#majutus

City of Tallinn. (2022). *Sotsiaaleluase*. Retrieved 04 23, 2023, from Tallinn.ee: https://www.tallinn.ee/et/teenused/sotsiaaleluase

City of Tallinn. (2023, 01 24). *Tallinna Sotsiaalmajad*. Retrieved 04 23, 2023, from Tallinn.ee: https://www.tallinn.ee/et/tallinna-sotsiaalmajad

Coalition for the homeless. (2023, 02). *Basic Facts About Homelessness: New York City*. Retrieved from Coalitionforthehomeless.org: https://www.coalitionforthehomeless.org/basic-facts-about-homelessness-new-york-city/

Craven, J. (2019, 07 03). *What Is Metabolism in Architecture?* Retrieved from Thoughtco.com: https://www.thoughtco.com/what-is-metabolism-in-architecture-177292

D'utruy, L. (2017, 02). *Tempohome*. Retrieved from Artpil.com: https://artpil.com/news/tempohome-laure-dutruy/

Dalal, A., Darweesh, A., Misselwitz, P., & Steigemann, A. (2018). Planning the Ideal Refugee Camp? A Critical Interrogation of Recent. *Urban Planning, Volume 3, Issue 4*, 64-78. doi:https://doi.org/10.17645/up.v3i4.1726

Ebner, I. d. (1999). *A Cidade e Seus Vazios.* Campo Grande: Universidade Federal de Mato Grosso do Sul. Retrieved from https://www.scribd.com/document/257526039/A-Cidade-e-Seus-Vazios-Iris-de-Ameida-Rezende-Ebner-1#

Eesti Pagulasabi. (2022, 03 22). *Kuidas Koraaldame: Majutus Ukraina Sõjapõgenikele*. Retrieved 04 23, 2023, from Pagulasabi.ee: https://www.pagulasabi.ee/uudised/kuidas-korraldame-majutus-ukraina-sojapogenikele

European Commission, Migration and Home Affairs. (n.d.). *Temporary protection*. Retrieved 04 22, 2023, from Home-affairs.ec.europa.eu: https://home-affairs.ec.europa.eu/policies/migration-and-asylum/common-european-asylum-system/temporary-protection_en

FACETTEN-Magazin. (2017, 02 17). „Viel, viel besser als die Unterbringung in Turnhallen": Tag der offenen Tür im neuen Neuköllner Tempohome. *FACETTEN-Magazin Neukölln*. Berlin. Retrieved from

https://facettenneukoelln.wordpress.com/2017/02/12/tempohome-fluechtlingsunterkunft-buckower_felder-neukoelln/

Framlab. (2018). *Shelter with Dignity*. Retrieved from framlab.com: https://www.framlab.com/swd

Fujibayashi, H., & Nakayama, M. (2017, 06). An Option to Avoid the Sudden Mass Influx of Migrants Resulting From Worldwide Environmental Threats. *International Journal of Social Science Studies Vol. 5, No. 6*, pp. 1-8. doi:https://doi.org/10.11114/ijsss.v5i6.2397

Gehl, J. (2011). *Life between buildings.* Island Press.

Gent, W. (2022). "Not in My Back Yard": Democratic rhetorics in spatial gatekeeping. *Communication and Critical/Cultural Studies, Volume 19, Issue 2*, 140-157. doi:https://doi.org/10.1080/14791420.2022.2061026

Global Detention Project. (2022). *The Ukrainian Crisis Double Standards: Has Europes Response to Refugees Changed?* Geneva: Global Detention Project. Retrieved from https://www.globaldetentionproject.org/the-ukraine-crisis-double-standards-has-europes-response-to-refugees-changed

Gregurović, M., Kaufmann, P. R., Župarić-Iljić, D., & Dujmović, M. (2019). Are attitudes determined by location? Differences in perceptions of asylum seekers between residents of two Zagreb neighbourhoods. *Geoforum Volume 104*, 244-258. doi:https://doi.org/10.1016/j.geoforum.2019.05.004

Hannafi, C., & Marouani, M. A. (2023). Social integration of Syrian refugees and their intention to stay in Germany. *Journal of Population Economics 36*, 581-607. doi:https://doi.org/10.1007/s00148-022-00913-1

Hannafi, C., & Marouani, M. A. (2023). Social integration of Syrian refugees and their intention to stay in Germany. *Journal of Population Economics 36*, 581-607. doi:https://doi.org/10.1007/s00148-022-00913-1

Hermann, E. (2018). A Plea for Underdeveloped Spaces. *SISULINE #4*, pp. 47-64. Retrieved from https://www.academia.edu/37620636/A_Plea_for_Underdeveloped_Spaces

Hou, J. (2010). *Insurgent Public Space: Guerrilla Urbanism and the Remaking of Contemporary Cities.* Routledge.

Hutton, G. (2016, 05 24). Inside the Decommissioned Berlin Airport Housing 1300 refugees. *VICE*. Retrieved 04 2023, from https://www.vice.com/en/article/vdqdya/tempelhof-germany-refugee-camp-photos-876

Hwang, S. W., & Lee, S. J. (2020). Unused, underused, and misused: an examination of theories on urban void spaces. *Urban Research & Practice*, 540-556. doi:https://doi.org/10.1080/17535069.2019.1634140

Kim, G. (2016). The Public Value of Urban Vacant Land: Social Responses and Ecological Value. *Sustainability*, 486-491. doi:https://doi.org/10.3390/su8050486

Kinnisvaraportaal. (2022). *Hinnastatistika*. Retrieved 04 24, 2023, from KV.ee: https://www.kv.ee/hinnastatistika?graph_version=2&show_compare_line=1&deal_type=1&start_year=2021&start_month=1&end_year=2022&end_month=12&county1=1&parish1=1061&city1=0&county2=12&parish2=1063&city2=0&graph_version=2&show_compare_line=1&deal_type=2&start

Kolmannskog, V., & Myrstad, F. (2009, 10). Environmental Displacement in European Asylum Law. *European Journal of Migration and Law*, pp. 313-326. doi:http://dx.doi.org/10.1163/157181609789804321

Kriis.ee. (2022, 11 23). *Elukoht*. Retrieved 04 2023, from Kriis.ee: https://kriis.ee/julgeolekuolukord-euroopas/info-ukraina-sojapogenikele/elukoht

Kühl, K., & Behrens, J. (2018, 07). Spaces of Migration: Architecture for Refugees. doi:https://doi.org/10.1002/ad.2325

Kuulpak, P. (2022). *Statistical Yearbook of Tallinn 2022.* Tallinn: Tallinn Strategic Management Office.

Länts, U. (2022, 04 11). *Pakosta: põhjendamatu keeldumine korteri üürimisest võib minna maksma tuhandeid eurosid*. Retrieved 04 2023, from Postimees TV: https://tv.postimees.ee/7497442/otse-postimehest-pakosta-pohjendamatu-keeldumine-korteri-uurimisest-voib-minna-maksma-tuhandeid-eurosid

Maa-Amet. (1994). KÜ (78401:107:0570) Ortofoto (1994). Tallinn, Harjumaa.

Maa-Amet. (2003). KÜ (78401:107:0570) Ortofoto (2003). Tallinn, Harjumaa.

Maa-Amet. (2017, 05 05). KÜ (78401:107:0570) Ortofoto (05.05.2017). Tallinn, Harjumaa.

Mäekivi, M. (2023, 04 10). *Tallink prahib põgenikke majutava laeva Kanada firmale*. Retrieved 04 2023, from Eesti Rahvusringhääling: https://www.err.ee/1608942866/tallink-prahib-pogenikke-majutava-laeva-kanada-firmale

Malka Architecture. (2016). *3BOX*. Retrieved from Stephanemalka.com: https://stephanemalka.com/portfolio/3box-i-on-the-roof-tops-i-paris-2016/

Mets, A.-L. (2022, 04 06). *Kodu üürile andmisest ei või keelduda põhjendusega, et inimene on põgenik või et tal on laps*. Retrieved 04 2023, from Kodugeenius: https://kodu.geenius.ee/rubriik/kinnisvara/kodu-uurileandmisest-ei-voi-keelduda-pohjendusega-et-inimene-on-pogenik-voi-et-tal-on-lapsed/

Nefs, M. (2006). Unused Urban Space: Conservation or Transformation? Polemics about the Future of Urban

Wastelands and Abandoned Buildings. *City & Time*, 47-58. Retrieved from http://www.ceci-br.org/novo/revista/docs2005/CT-2005-42.pdf

Netto, G. (2011). Strangers in the City: Addressing Challenges to the Protection, Housing and Settlement of Refugees. *International Journal of Housing Policy*, 285-303. doi:https://doi.org/10.1080/14616718.2011.599132

Northam, R. M. (1971). Vacant Urban Land in the American City. *Land Economics Volume 47, Number 4*, 345-355.

Pagano, M. A., & Bowman, A. O. (2000). *Vacant Land in Cities: An Urban Resource.* The Brookings Institution.

Peeker, H. (2021). *KODUTUD TALLINNAS 2020 Uuringu aruanne.* Tallinn: Tallinna Sotsiaaltöö Keskus.

Pettigrew, T. F., Tropp, L. R., Wagner, U., & Christ, O. (2011, 05). Recent advances in intergroup contact theory. *International Journal of Intercultural Relation Volume 35, Issue 3*, 271-280. doi:https://doi.org/10.1016/j.ijintrel.2011.03.001

Piekut, A., & Valentine, G. (2017). Spaces of encounter and attitudes towards difference: A comparative study of two European cities. *Social Science Research Volume 62*, 175-188. doi:https://doi.org/10.1016/j.ssresearch.2016.08.005

Puustinen, T., Pennanen, K., Falkenbach, H., & Viitanen, K. (2018). The distribution of perceived advantages and disadvantages of infill development among owners of a commonhold and its' implications. *Land Use Policy Volume 75*, 303-313. doi:https://doi.org/10.1016/j.landusepol.2018.03.051

Rahmann, H., & Jonas, M. (2011). Urban Voids: The Hidden Dimensions of Temporary Vacant Spaces in Rapidly Growing Cities. *State of Australian Cities National Conference.* Melbourne: 5th State of Australian Cities National Conference.

Riigikantselei, Justiitsministeerium. (2009, 12 09). *Välismaalaste seadus.* Retrieved 04 2023, from Riigiteataja.ee: https://www.riigiteataja.ee/akt/111032023039

Schwarz, T. (n.d.). Retrieved from https://www.dw.com/en/berlin-to-build-on-tempelhof-despite-drop-in-refugees/a-19143212

Sotsiaalkindlustusamet. (2023, 04 23). *Statistika*. Retrieved from Sotsiaalkindlustusamet: https://www.sotsiaalkindlustusamet.ee/asutus-uudised-ja-kontakt/praktiline-teave/statistika#ua-stat

Thow, A., Poljansek, K., Marzi, S., Galimberti, L., & Dalla Valle, D. (2022). *INFORM Climate Change Quantifying the impacts of climate and socio-economic trends on the risk of future humanitarian crises and disasters.* Luxembourg: Publications Office of the European Union. doi:https://dx.doi.org/10.2760/383939

Timbeco Woodhouse. (2019). *Moodulmajad Püsitatakse Objektil Kiirelt*. Retrieved 04 2023, from timbeco.ee: https://timbeco.ee/tooted/moodulmajad/moodulmaja-ehitus/

UNHCR. (2023, 04 22). *Operational Data Portal*. Retrieved from Operational Data Portal: https://data.unhcr.org/en/situations

UNHCR. (2023, 04 22). *Ukraine Refugee Situation*. Retrieved from Operational Data Portal: https://data.unhcr.org/en/situations/ukraine

UNHCR. (2023). *Ukraine Situation Regional Refugee Response Plan.* Geneva: UNHCR.

United Nations Human Rights Office of the High Commissioner. (n.d.). *United Nations Human Rights Office of the High Commissioner*. Retrieved 04 22, 2023, from United Nations Human Rights Office of the High Commissioner: https://www.ohchr.org/en/taxonomy/term/878

Vince, G. (2022). *Nomad Century: How Climate Migration Will Reshape Our World.* Penguin.

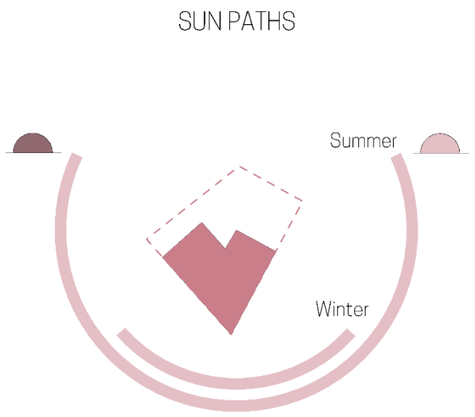
## PROJECT

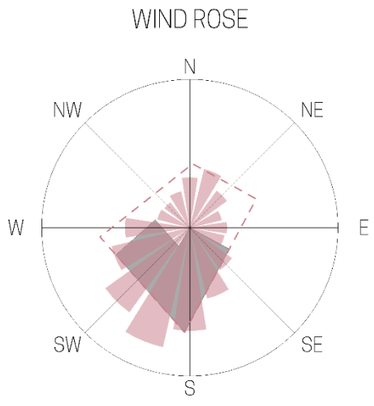
## LOCATION

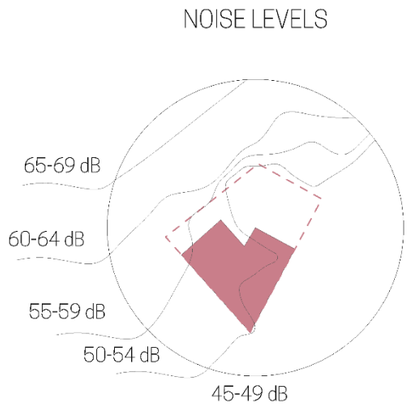
The urban void chosen for the final site is located next to the National Library of Estonia, more precisely it is in a small parking lot south of the building. The urban void sits within the library plot that is owned by the state. Almost half of the site is an overgrown garden built on a slope, and the other half is a dysfunctional parking lot. The urban void connects to a firewall of Toom-Kuninga 10, which used to belong to the Ministery of Justice under Estonian SSR. As the urban void occupies a vertical space on top of the garden it is crucial to preserve the garden as much as possible. On the northern and western side, a 6-story building creates a vertical wall and on the southern side the 4-story Toom-Kuninga 10 has a blank firewall towards the site. This creates a more private area by cutting off the bigger public areas around the site. In addition, the buildings provide a noise barrier from the Endla street and open it up to Tuvi park. However, light can only reach the site from the east or the west. As the neighbourhood is located near public areas in the city centre a higher amount of traffic is normal. This could lower the NIMBY factor as people in the neighbourhood are used to living in a public space. The area for the site is about 930 m².

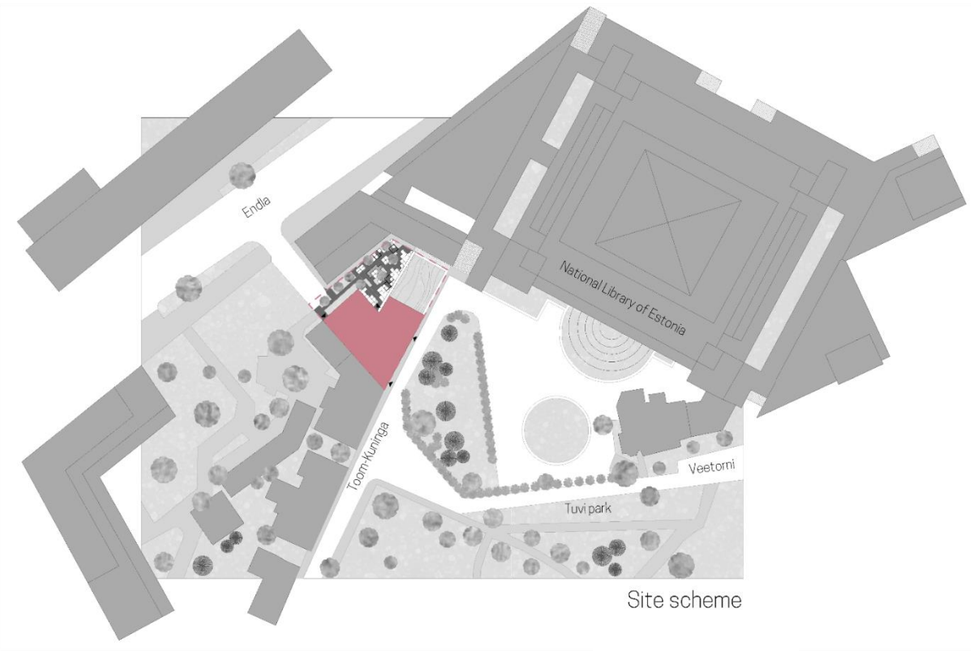
## HISTORY

Toom-Kuninga Street first appears on maps in the 17th century. Around the 18th and 19th centuries a neighbourhood for the working-class forms around the street. The street runs through the neighbourhood and connects to intersection of Endla and Toompuiestee. However, in 1985 most of the neighbourhood was demolished to make room for the National Library of Estonia. Toom-Kuninga Street was also disconnected from the intersection and shortened. The building, Toom-Kuninga 8, that occupied the current location was demolished during this time and a garden on a slope was constructed instead. However, the empty wall and disconnected space was never connected to the new library creating a rift between the new building and the old neighbourhood.

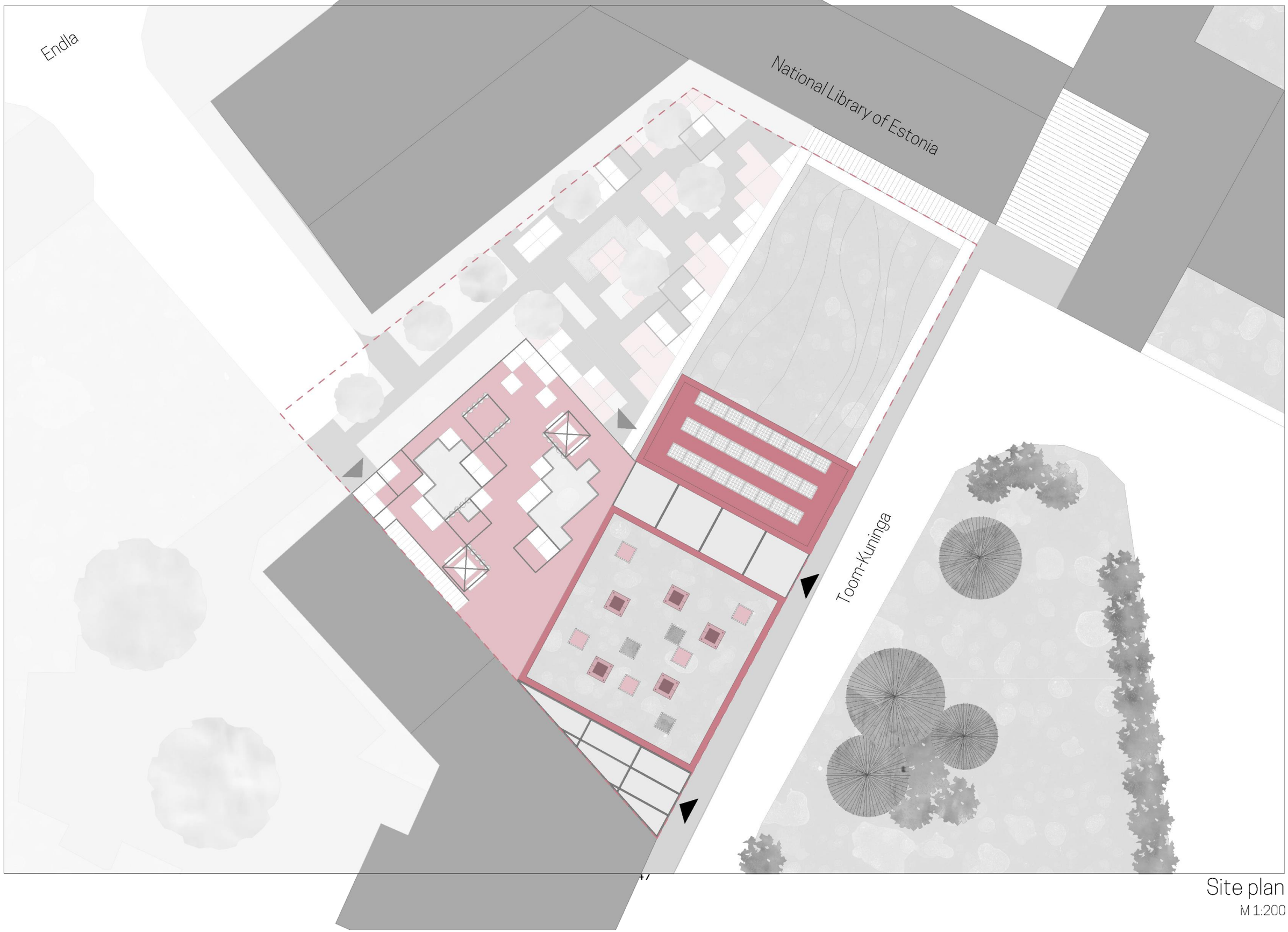


Site scheme

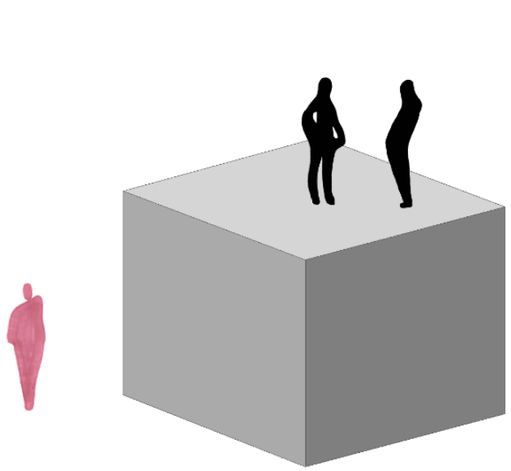


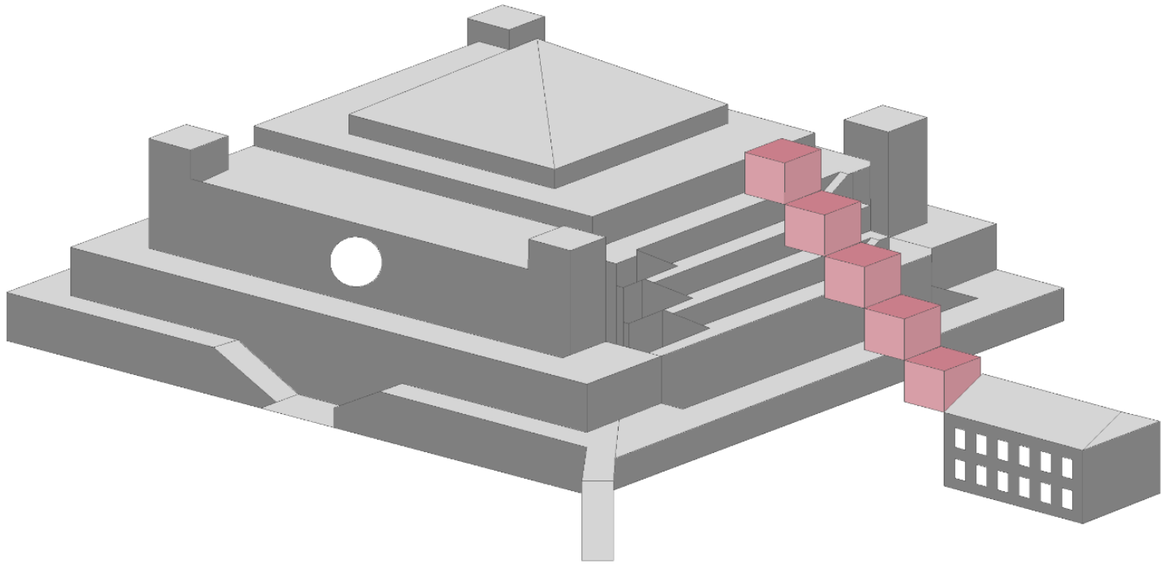

Site plan

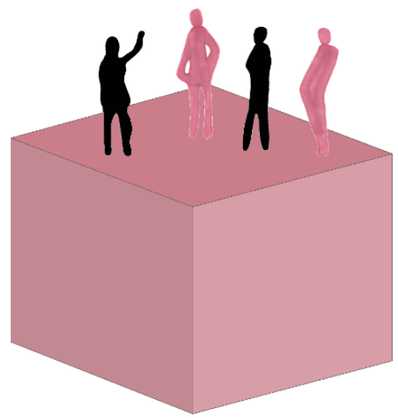
M 1:200

## CONCEPT

The conflict between building and spaces was created with the construction of the National Library of Estonia. As refugees need integration to be a part of the society around them, they cannot be placed into an area with conflict. Concept seeks to resolve conflict between spaces and between communities to create connection. Connection between the spaces would allow for connection between the local and newcomer communities, which could create successful integration.







*Render 4. Tuvi Park perspective*

## CONNECTING LIFE

The building can be accessed on two levels. From the Toom-Kuninga Street side two doors connect to the terrace and stairways. From the Endla street side, which is two floors below the Toom-Kuninga Street, a door connects to a stairway, which leads to the terrace. Cars can access the building from both streets. The garbage truck can access the building from Endla street and access to the garbage room is through the courtyard.

### Outdoor areas

The terrace is designed for different functions to offer control over the space to the residents. Seating is created with small wooden boxes, which can be moved around and stacked on top of each other or stored away completely. A simple steel construction is designed to offer multiple configurations to the users, for example a table, a painting wall, a swing, a shelter from the elements. This can be achieved by hanging different objects from the construction. Additionally, the construction can be moved around or dismantled and stored. Patches of grass divide the terrace into smaller spaces.

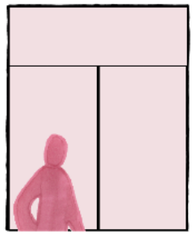
The community garden is built on top of the former car parking lot. The design of the garden creates a square grid layout where squares are filled with garden boxes or seats. In between the boxes are walkways, a small pool and grass patches with trees to offer shade. A few of the seating boxes are under a fabric cover, which offers shelter from the elements.

### Creating connection

Implementing the ideas of "Life Between Buildings", outdoor spaces are designed to create socialization between the newcomer and host society. A social hierarchy of spaces is created in order to create different levels of socialization which could in turn create successful integration. The first point of contact is the window of the private apartment. Through the window a point of contact is established with the outside. Windows open to Tuvi park and the terrace of the building, which motivates the resident to go use these social spaces. The terrace offers a semi-private setting where residents of the building can socialize within their own community. It creates a safe space which allows for the first step in socialization between persons. The terrace is directly connected to the community garden, which creates the point of contact between the host and newcomer community. People from the area can come and take care of the garden while connecting to each other during during the process. The courtyard is surrounded by two buildings and a slope making it more intimate and private compared to fully public spaces. Only from the courtyard can the fully public spaces of Tuvi park and Endla street be accessed.

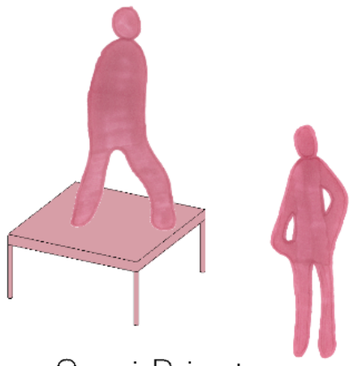
### Non-humans

In addition to creating integration between the host and newcomer community, the building integrates non-humans into the design. On the roof, the space is used for beehouses. Bees are pollinators, crucial to the environment, that are facing declining numbers in the recent decades. They are located on the roof so humans and bees would not disturb each other, but rather form a connection through the garden, which they both take care of. The space under the raised structure that will not have access to sunlight is turned into an insect hotel. Insects can, for example transform biomass and regulate pest populations in the area. The plant life in the communal garden, on the walls of the building and in the sloped garden can benefit the neighbourhood by filtering air and creating a better air quality.



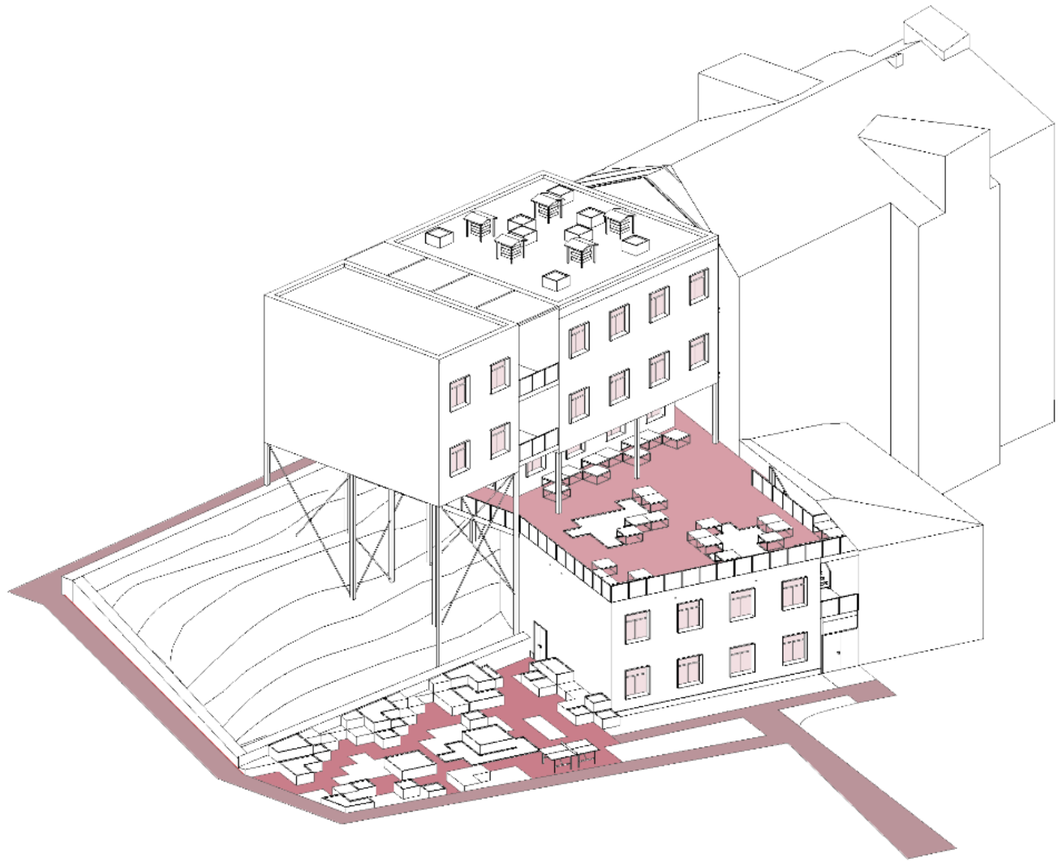
## Private

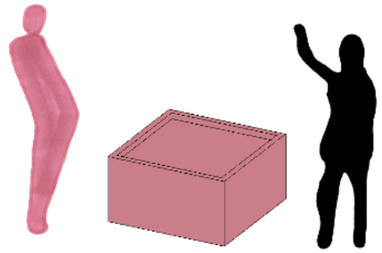
Window is the first point of contact with the outside.



## Semi-Private

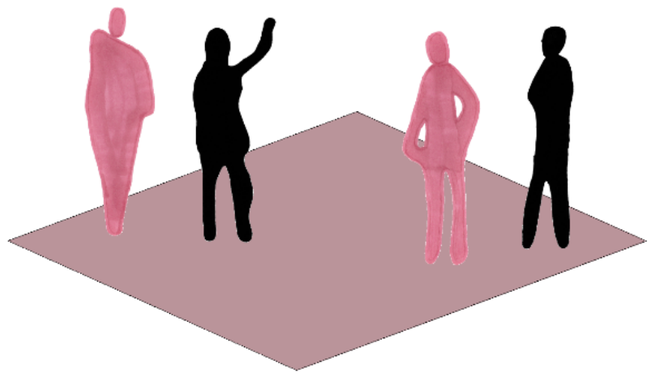
Terrace offers the safe environment to connect with other residents.





## Semi-Public

Community garden create a less public environment that still allows for the connection between the host and newcomer society.



## Public

Community garden connects to the public spaces of Tuvi Park and Endla Street

## CONNECTING SPACE

### National Library of Estonia

Connection to the modern library building is achieved by using bolder lines to define the shape of the building, which equals the dominating lines of the library. Additionally, the volume, closest to the library, is lifted in the air to connect spatially to the rising structure of the library.

### Old neighbourhood

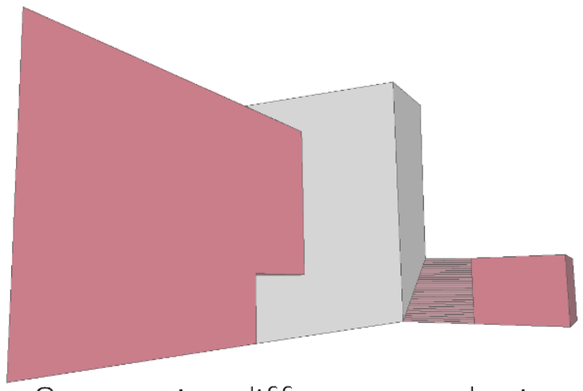
Connection to the old neighbourhood is the most crucial as it defines the Toom-Kuninga Street and because historically a building resembling the old buildings used to occupy the site. For this reason, the building follows the street line and the size of the original building. The new building follows the form of Toom-Kuninga 10 to create a smooth transition between them. In addition, the façade is inspired by the old, demolished building and using elements from the original façade to fit in with the neighbourhood and appreciate the history of the site.

### Endla street

On the Endla Street side a smaller volume is designed, which connects to the extension of the Toom-Kuninga 10. The connection of these volumes creates a more unified whole on the Endla Street side.

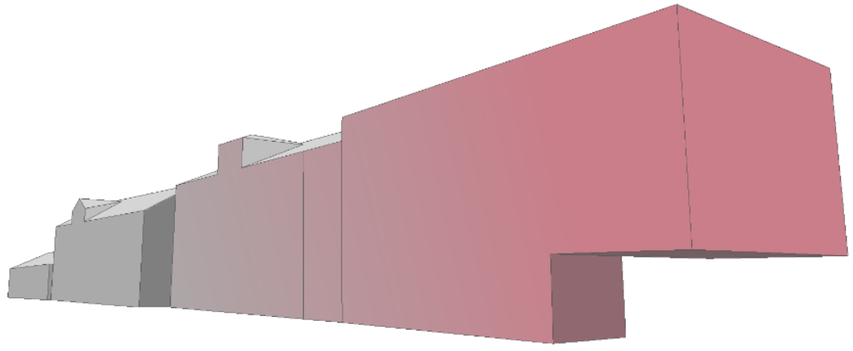
### Tuvi park

The community garden is formed in between the library and the new building. The space creates an extension of the Tuvi park that connects to Endla street. In addition, it provides a more private and quiet space between the two bigger public spaces of Tuvi park and Endla street.



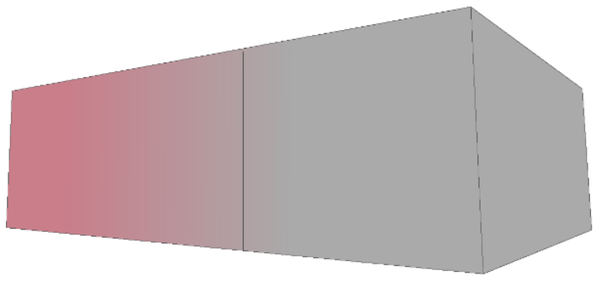
Connecting different typologies

Negative rise towards the National Library of Estonia



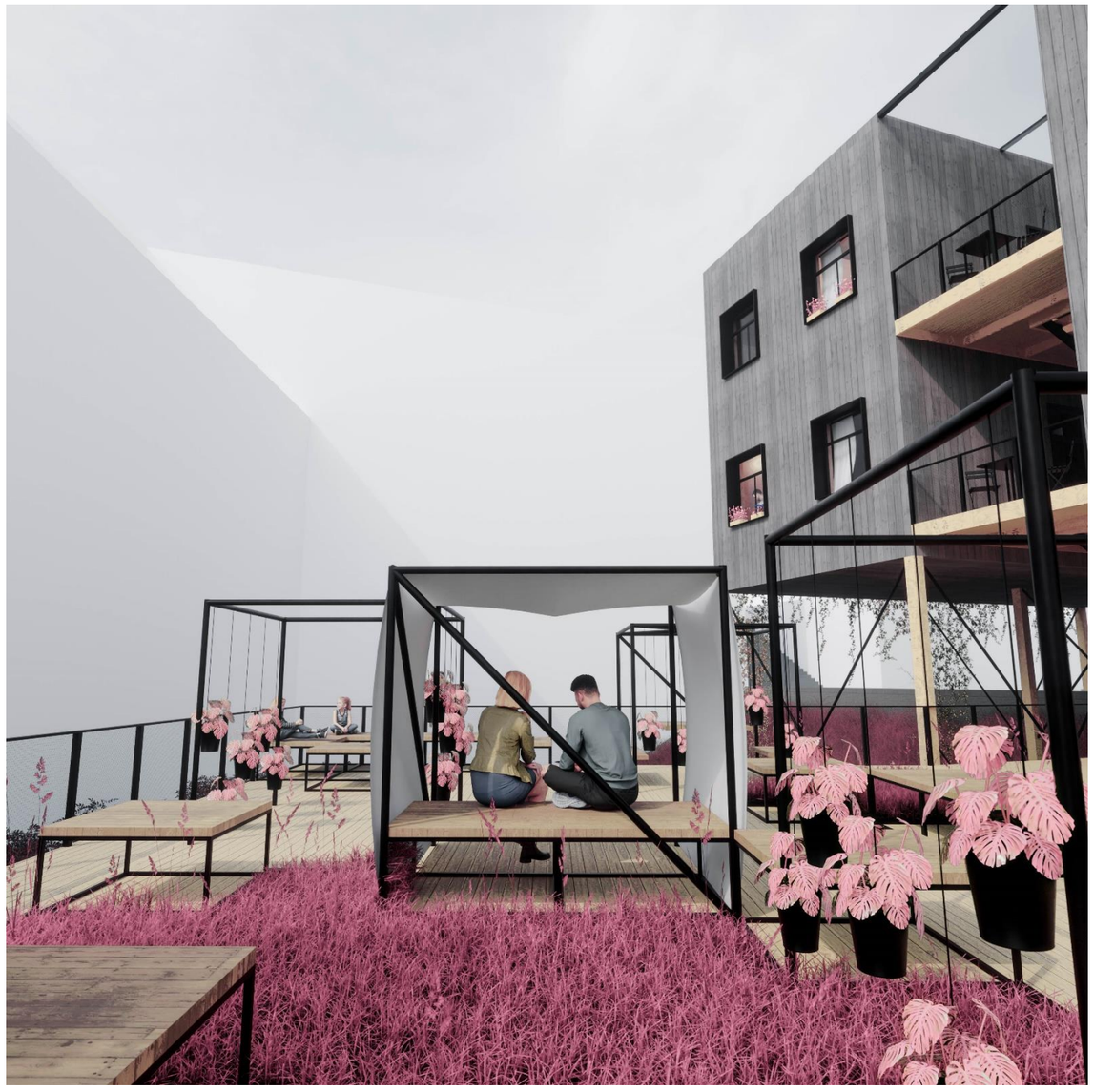
Respecting the existing scale

Following the scale of the existing neighbourhood

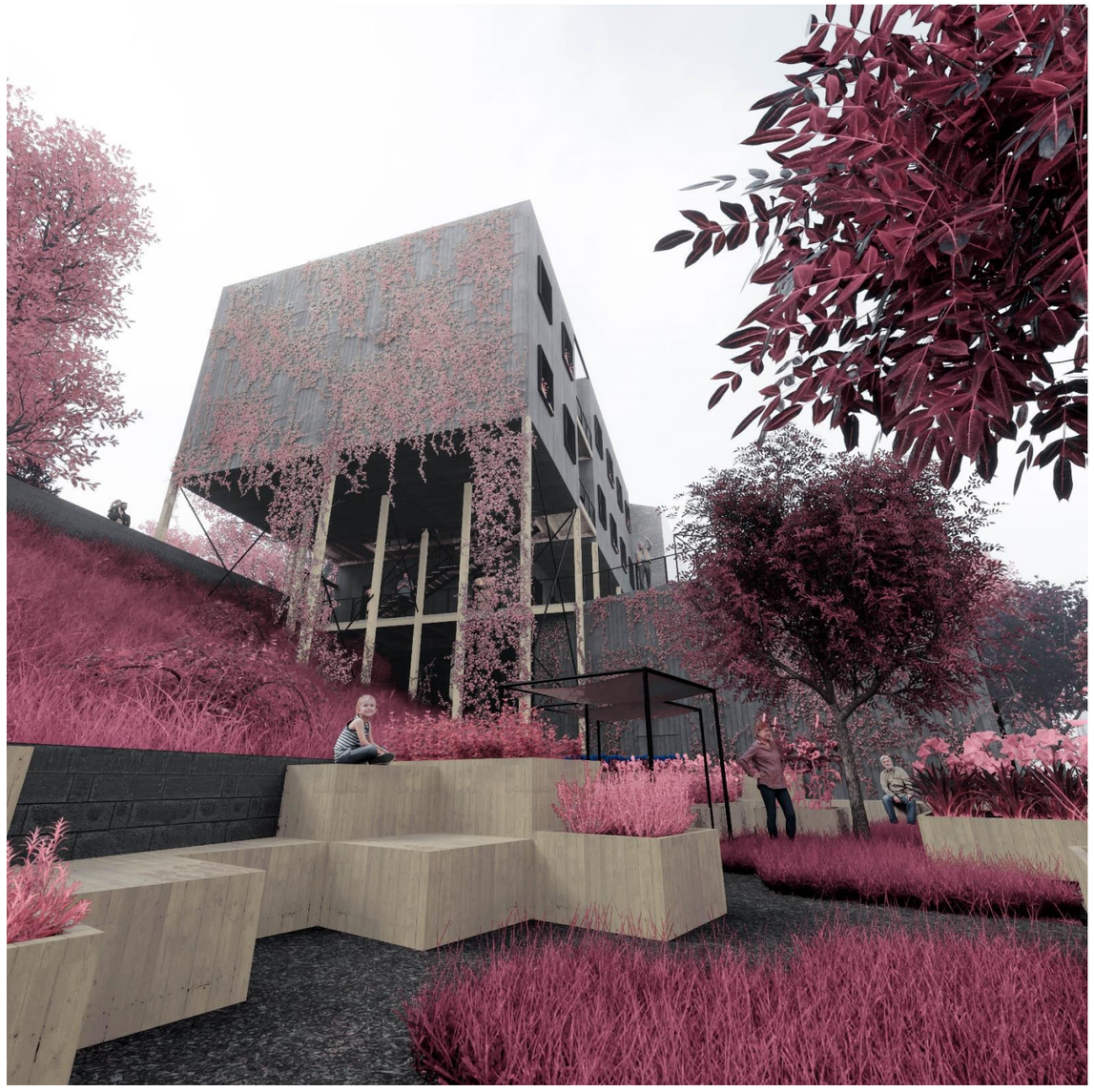


Creating a complete whole

Connecting the broken extension on the Erdla Street side



*Render 5. Terrace*

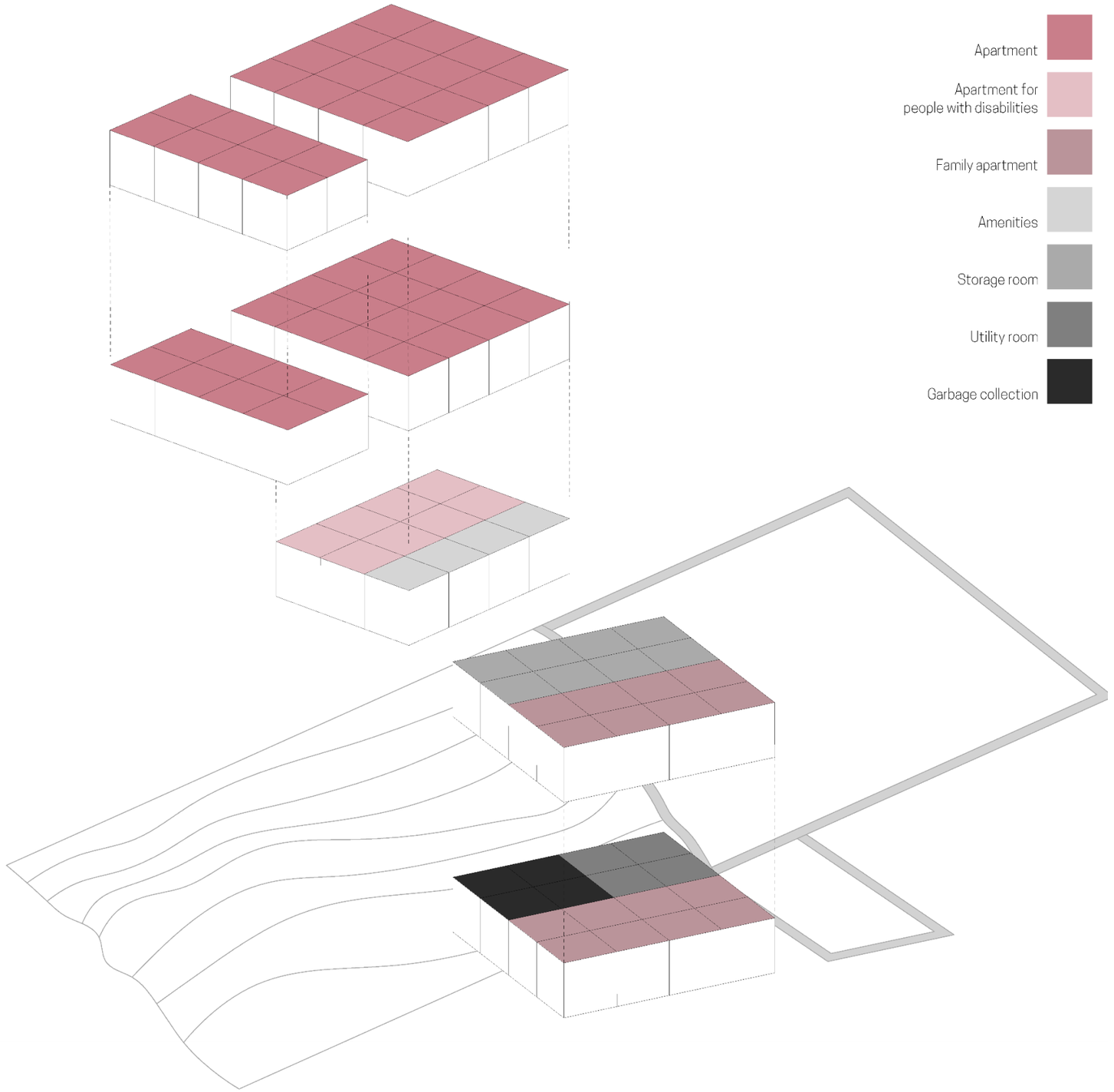


*Render 6. Community garden*

## BUILDING CONCEPT

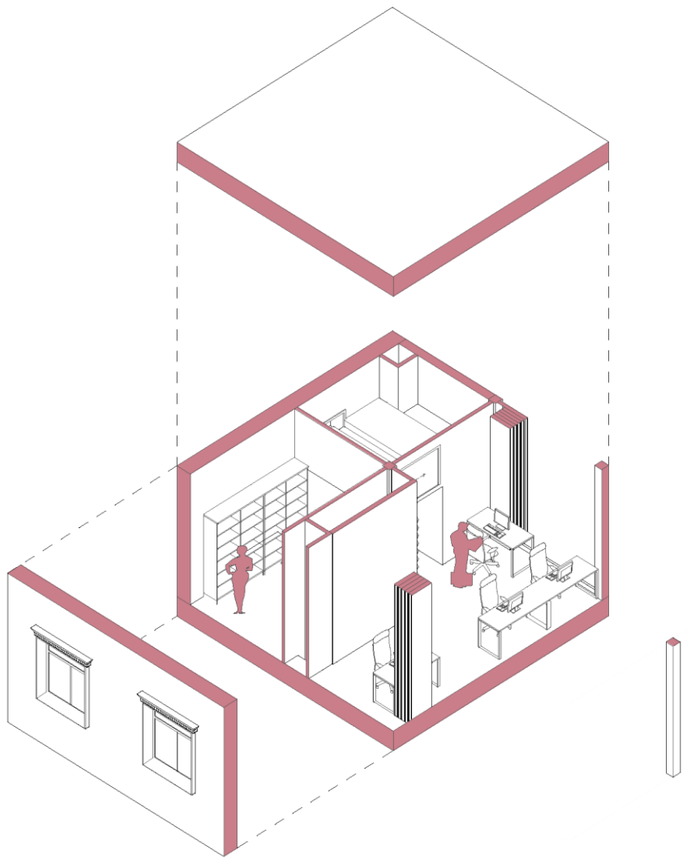
The building consists of two volumes. The upper volume consists of three floors and follows the street line on the Toom-Kuninga Street. The volume has two interventions that cut through the volume and act as stairways. It is raised off from the ground to preserve the garden below it as much as possible. The area that does not have access to sunlight has been recreated on top of the roof to preserve nature. The upper volume consists of three floors with apartments for the disabled, a laundry room and a computer room on the ground floor, which has street level access from the Toom-Kuninga Street. This level is connected to the roof of the lower volume, which is designed as a terrace. Additional apartments are located on the first and second floor.

The lower volume connects to the Toom-Kuninga 10 extension in the former parking lot. It consists of two stories with a big family apartment opening to the Endla street on the -2 floor. The other half of the -2 floor consists of the utility room, bicycle storage and the garbage collection. The -1 floor also has a family apartment opening to the Endla street and storage spaces for the residents.

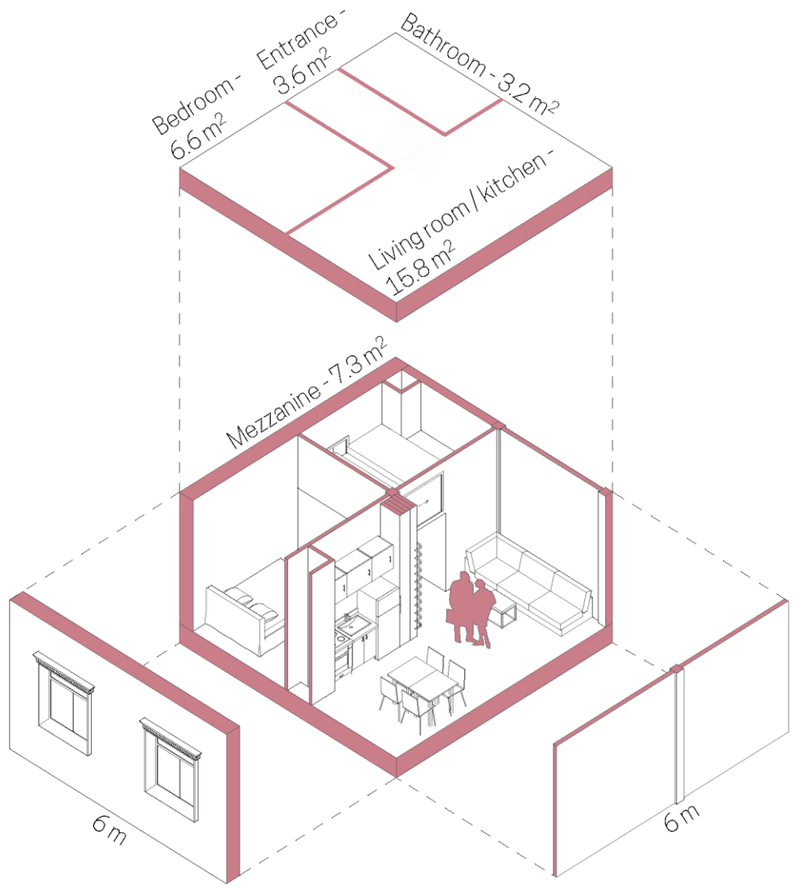


## Apartment

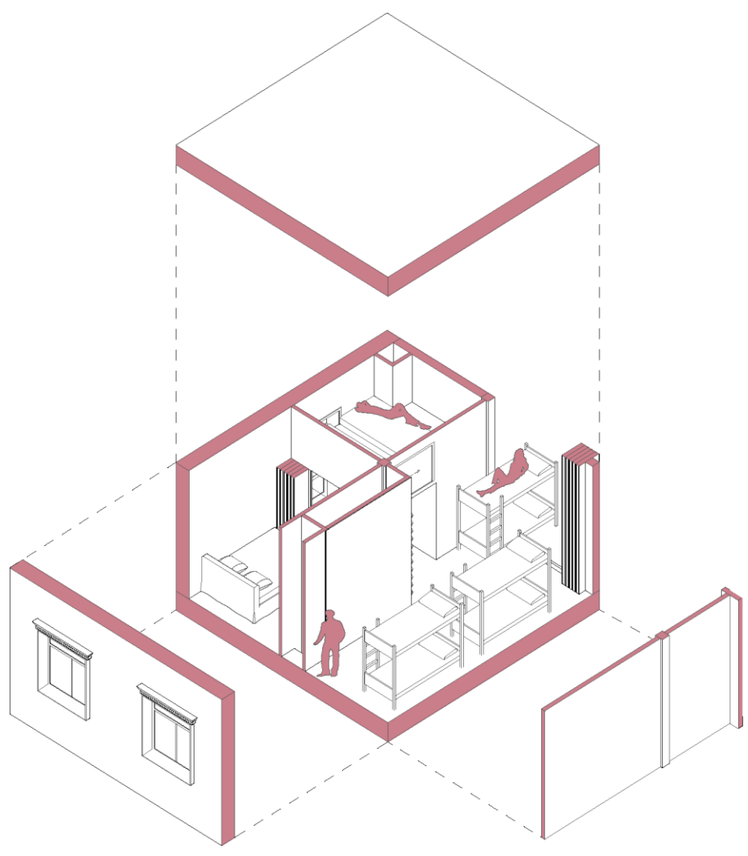
Apartments are divided into 5 distinctive areas. Left of the entrance is the bathroom. Above the bathroom and the entrance is the mezzanine, which can be accessed through a ladder. On the right of the entrance is a bedroom, which has a window to the outside. These spaces take up half of the apartment. The other half is an open living room connected to the kitchen. The kitchen has a window, which provides light all the way up to the living room.



Short-term layout




Long-term layout



Alternative layout

## Changing user groups

The apartments make use of moveable walls, which can be opened and closed to create different spaces. Walls inside a module can be moved to create individual spatial solutions for the resident. In addition, walls between modules can be moved to create a fully open floorplan for one floor. This allows to change the function of a whole floor. The layouts created provide three different functions for the building:

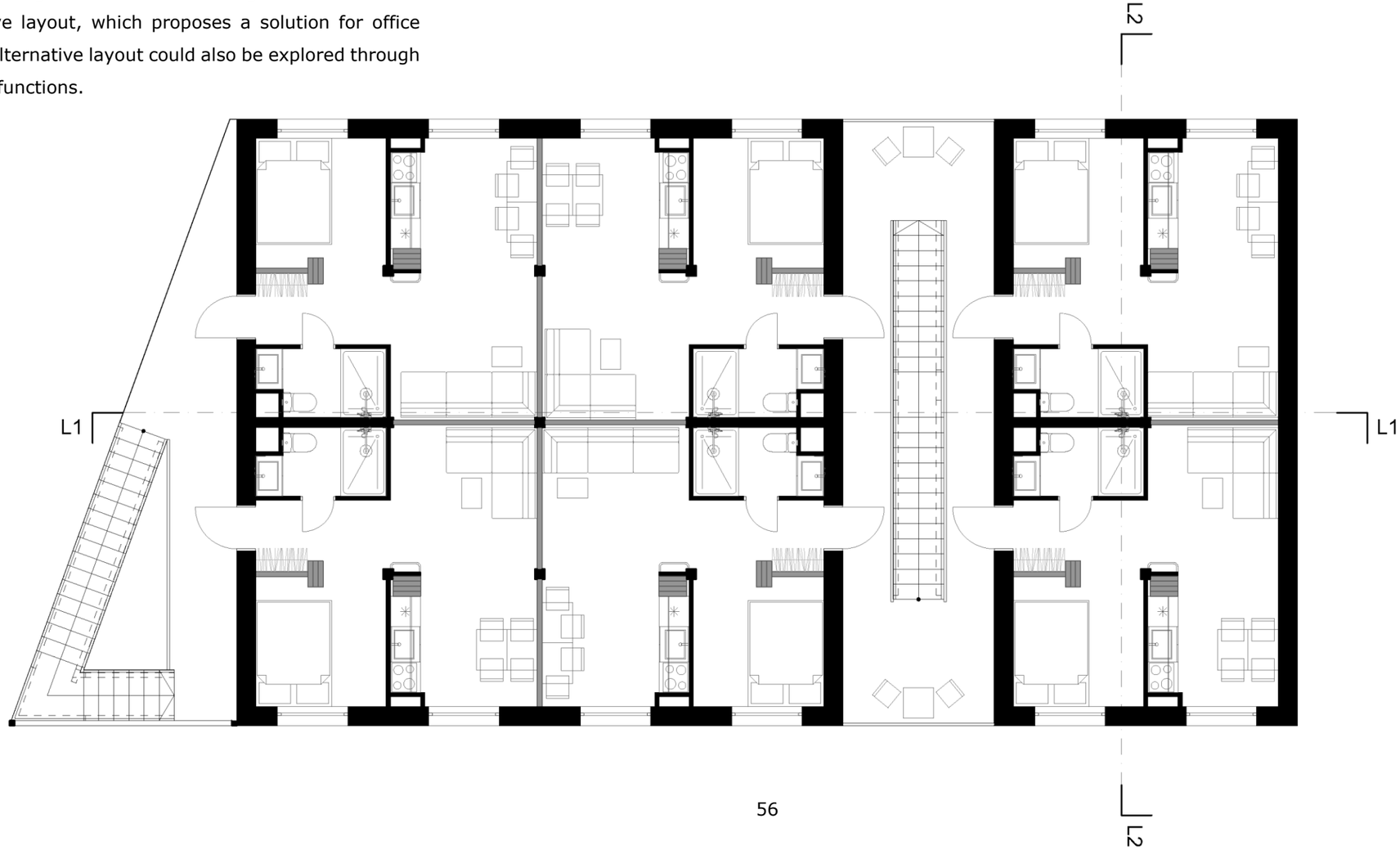
- Short-term layout, which is a high-density solution for a situation where providing accommodation is critical. Space is created by sacrificing the privacy of residents.
- Long-term layout, which is the regular layout for the building creating individual living spaces that can be used to house refugees or as social housing.
- Alternative layout, which proposes a solution for office spaces. Alternative layout could also be explored through different functions.

## Density

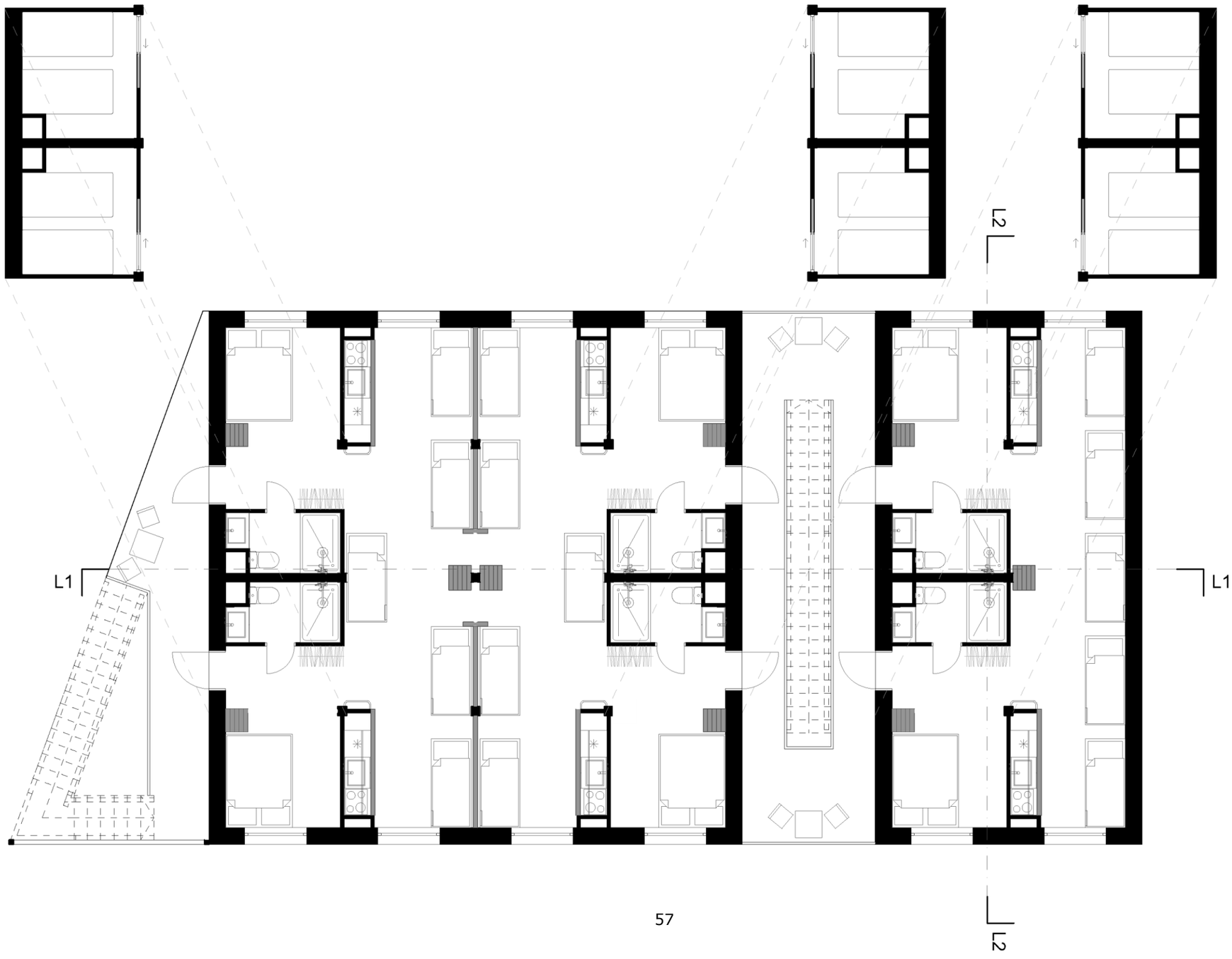
The implementation of moveable walls allows the building to accommodate a higher amount of people during a mass influx of displaced persons. The short-term accommodation allows to accommodate 9 people per apartment, 162 people per building. As the initial mass influx has subsided, the building can be turned into a long-term accommodation, which allows a maximum of 4 people per apartment, 72 people per building.

## Individuality and control

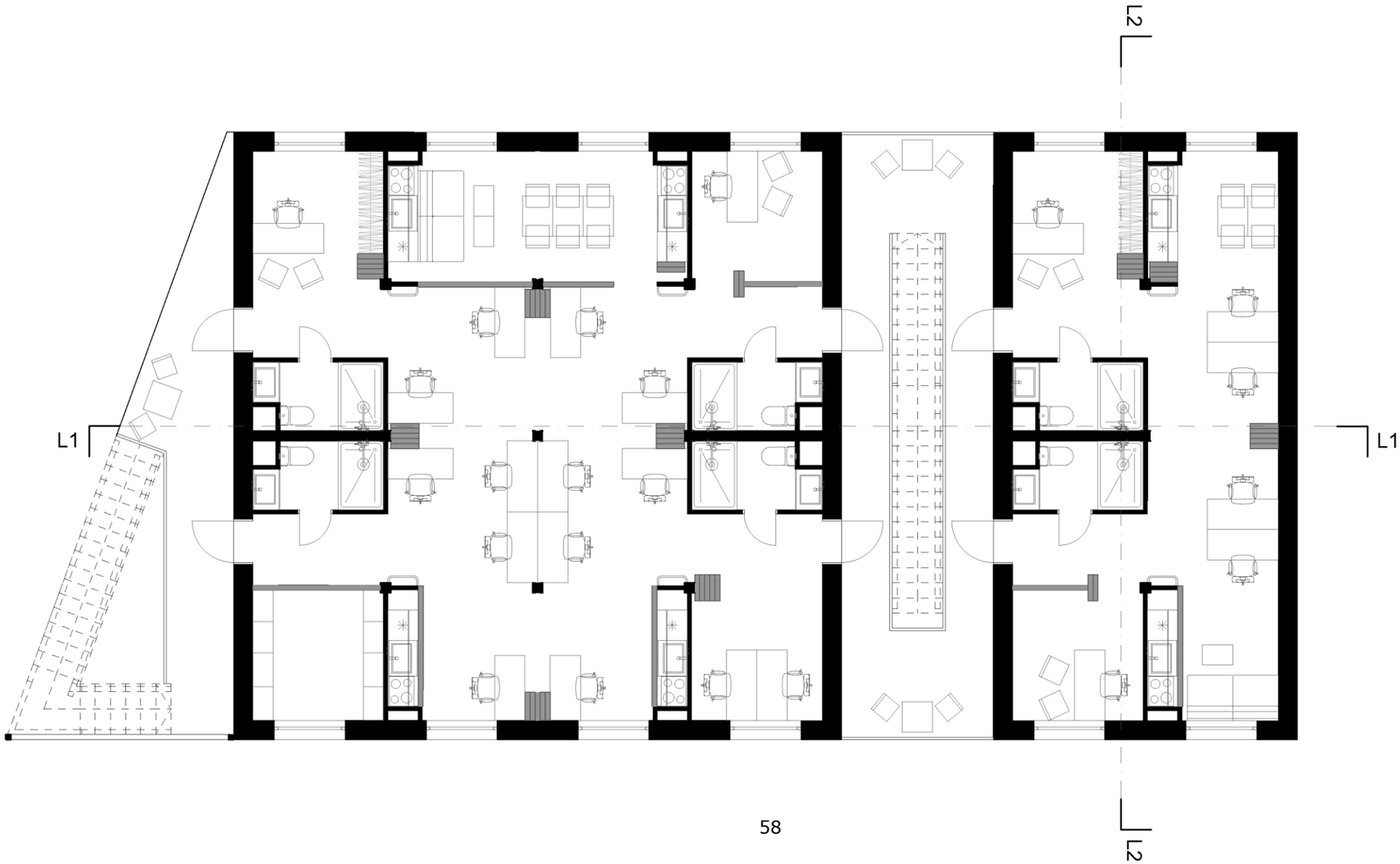
The importance of control and individuality cannot be overstated when designing spaces for marginalized groups. The implementation of moveable walls allows for individual apartment layouts according to the needs of the resident. The furniture in the apartment is designed in smaller pieces, which allow them to be moved around creating different spaces. Storage units provide the opportunity to get rid of some furniture, for example some cultures might not use a table and chairs but rather sit on the floor for dinner. Extended windowsills allow for flowerpots or other decorations to distinguish the residents' apartments from the exterior.



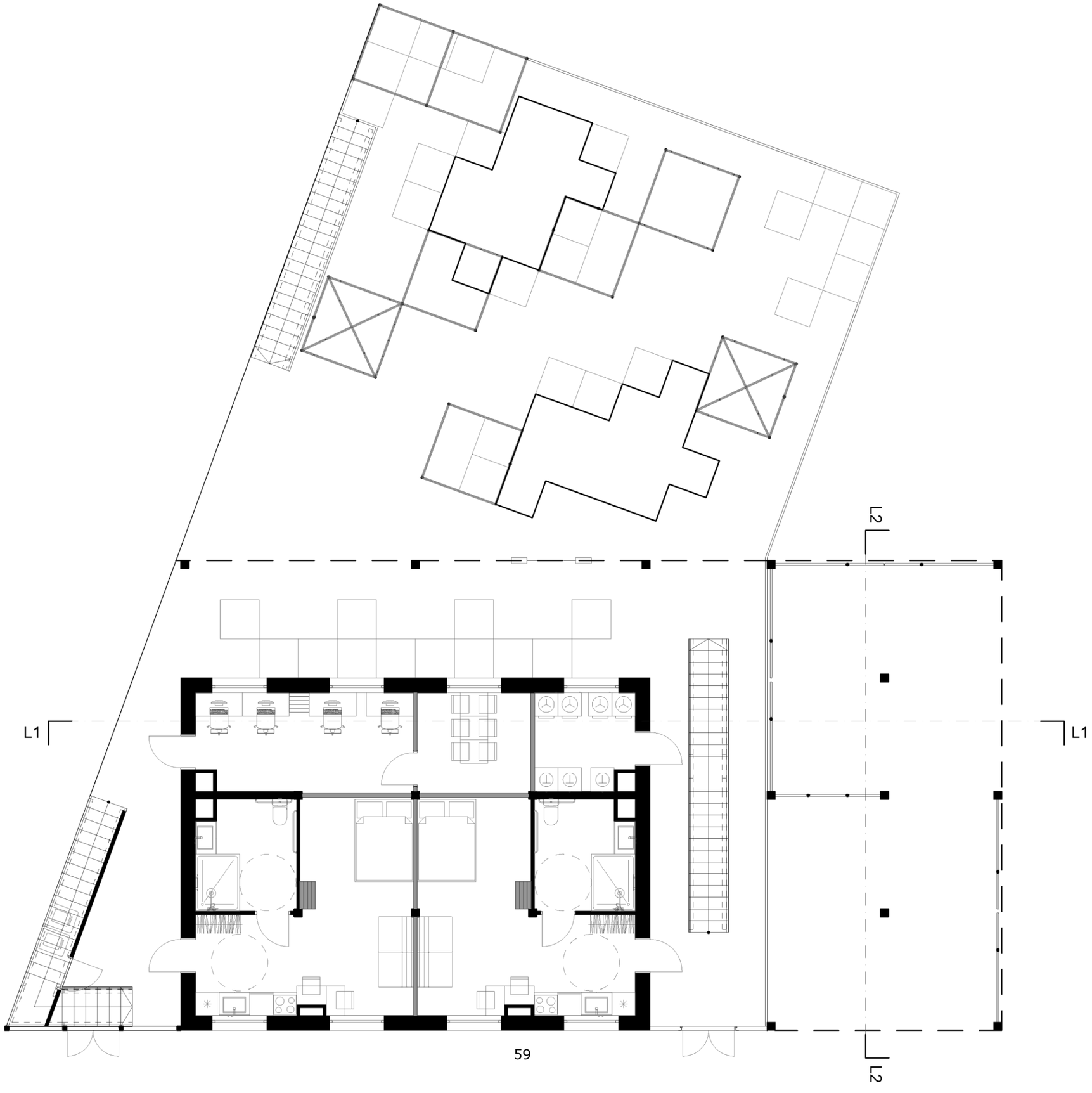

Long-term layout
M 1:100



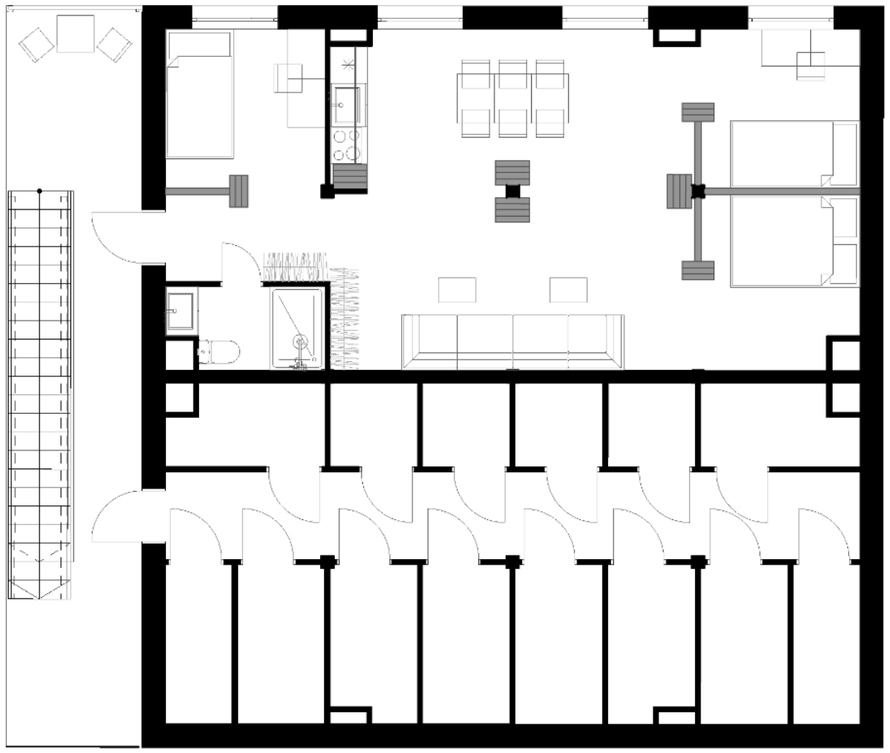

Short-term layout
M 1:100



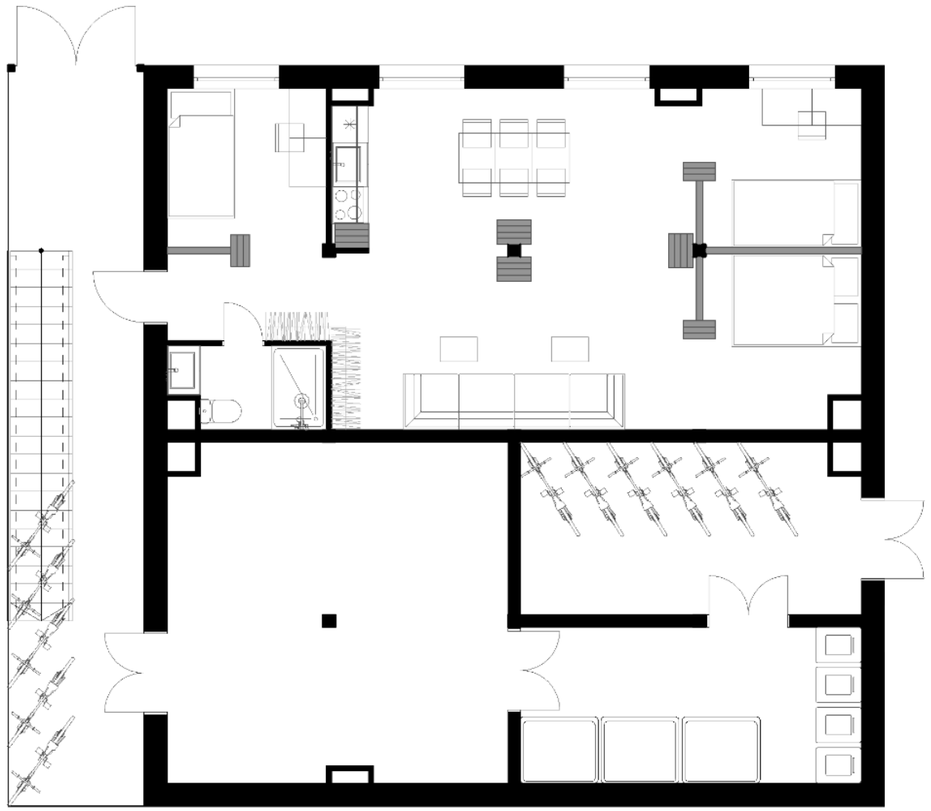

Alternative layout
M 1:100




Floor 0
M 1:100



Floor -1
M 1:100



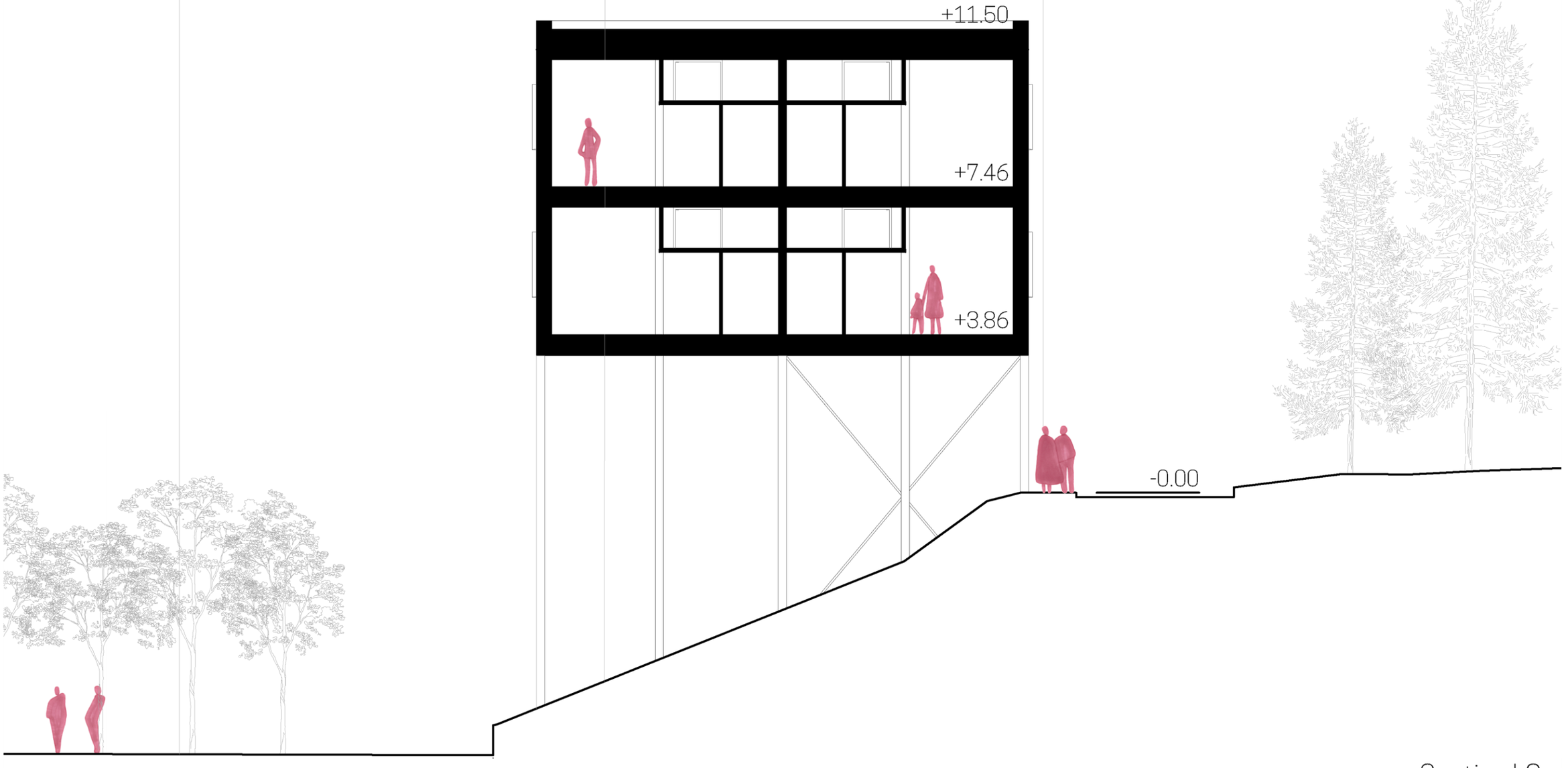
Floor -2
M 1:100

## Construction and materials

The building is constructed using CLT modules. The benefits of using a modular system are discussed in paragraph 3.2.7 Time of Construction. Each apartment is made up of 4 3x3 modules. In total 92 modules are needed, which can be installed in about 8 days. CLT columns are used to raise part of the structure. The terraces and walkways are also constructed of wood. The railings are constructed of stainless steel and painted black. A fine metal meshing is used in between the railings to make them more transparent. Glass roofs are used to shelter the stairways from elements.

## Adaptable design to different sites

The main components of the building are square modules, open air walkways and columns. These simple construction elements allow the construction to adapt to different urban voids. In addition, they allow for simple planning and design. However, the elements could still produce individual designs for different sites.



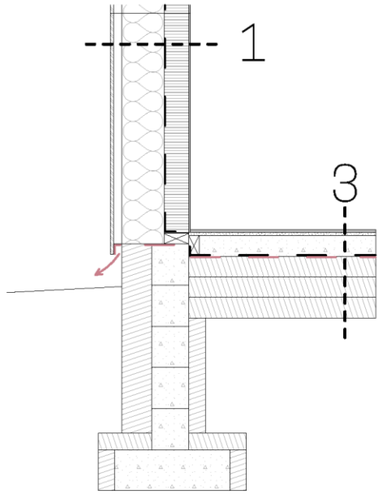

Section L2
M 1:100

## 1 -EXTERNAL WALL
## U=0.14 W/m²k

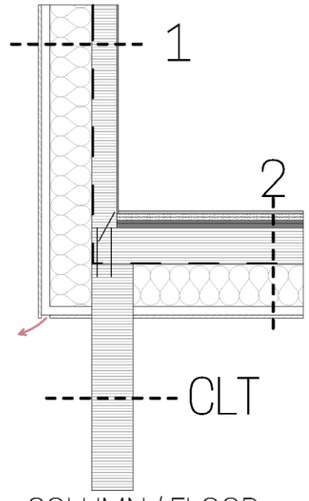
1. Facade cladding 10 mm
2. Ventilation gap / ventilation strip 40 mm
3. Insulation ISOVER OL-FACADE 205 mm
4. Variable vapor resistance membrane
5. CLT 120 mm
6. Birch plywood 10 mm

## 2 -RAISED FLOOR
## U=0.14 W/m²k

1. Parquet + underlayment 15 mm
2. Floor plasterboard 15 mm
3. Floor plasterboard 15 mm
4. Aprobo Decibel 4 15 mm
5. Sound isolation ISOVER FLO 20 mm
6. Variable vapor resistance membrane
7. CLT 180 mm
8. Insulation ISOVER PL-FACADE 205 mm
9. Ventilation gap / ventilation strip 40 mm
10. Facade cladding 10 mm




GROUND FLOOR /
FOUNDATION INTERSECTION
M 1:30




COLUMN / FLOOR
INTERSECTION
M 1:30

## 4 -ROOF
## U=0.10 W/m²k REI90

1. SBS roofing 2x 3 mm
2. Insulation ISOVER OL-TOP 20 mm
3. Insulation ISOVER OL-LAM 300 mm
4. Water vapor barrier
5. CLT 180 mm
6. Plasterboard 13 mm
7. Air gap / suspended ceiling frame 200 mm
8. Ecophon Master A 40 mm

## 5 -FLOOR
## R`w=58 dB, L`w=52 dB REI90

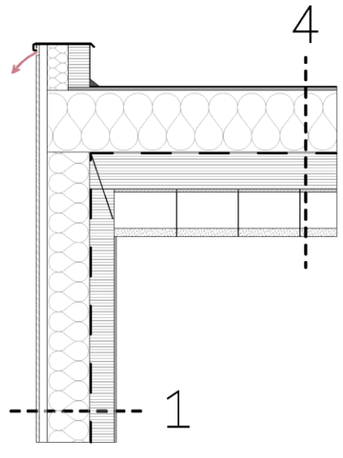
1. Parquet + underlayment 15 mm
2. Floor plasterboard 15 mm
3. Floor plasterboard 15 mm
4. Aprobo Decibel 4 12 mm
5. Sound isolation ISOVER FLO 20 mm
6. CLT 180 mm
7. Air gap / suspended ceiling frame 200 mm
9. Ecophon Master A 40 mm

## 3 -FLOOR ON THE GROUND
## U=0.087 W/m²k

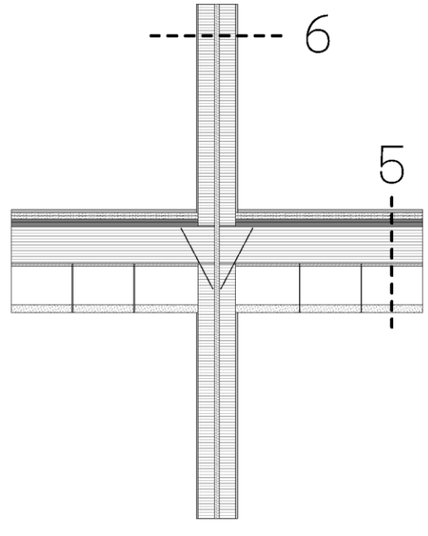
1. Parquet + underlayment 15 mm
2. Concrete 100 mm
3. Radon barrier
4. Hydroisolation barrier
5. Insulation ISOVER XPS 300 foam 100 mm
6. Insulation ISOVER XPS 300 foam 100 mm
7. Insulation ISOVER XPS 300 foam 100 mm

## 6 -LOAD-BEARING
## INTERNAL WALL
## R`w=64 dB REI60

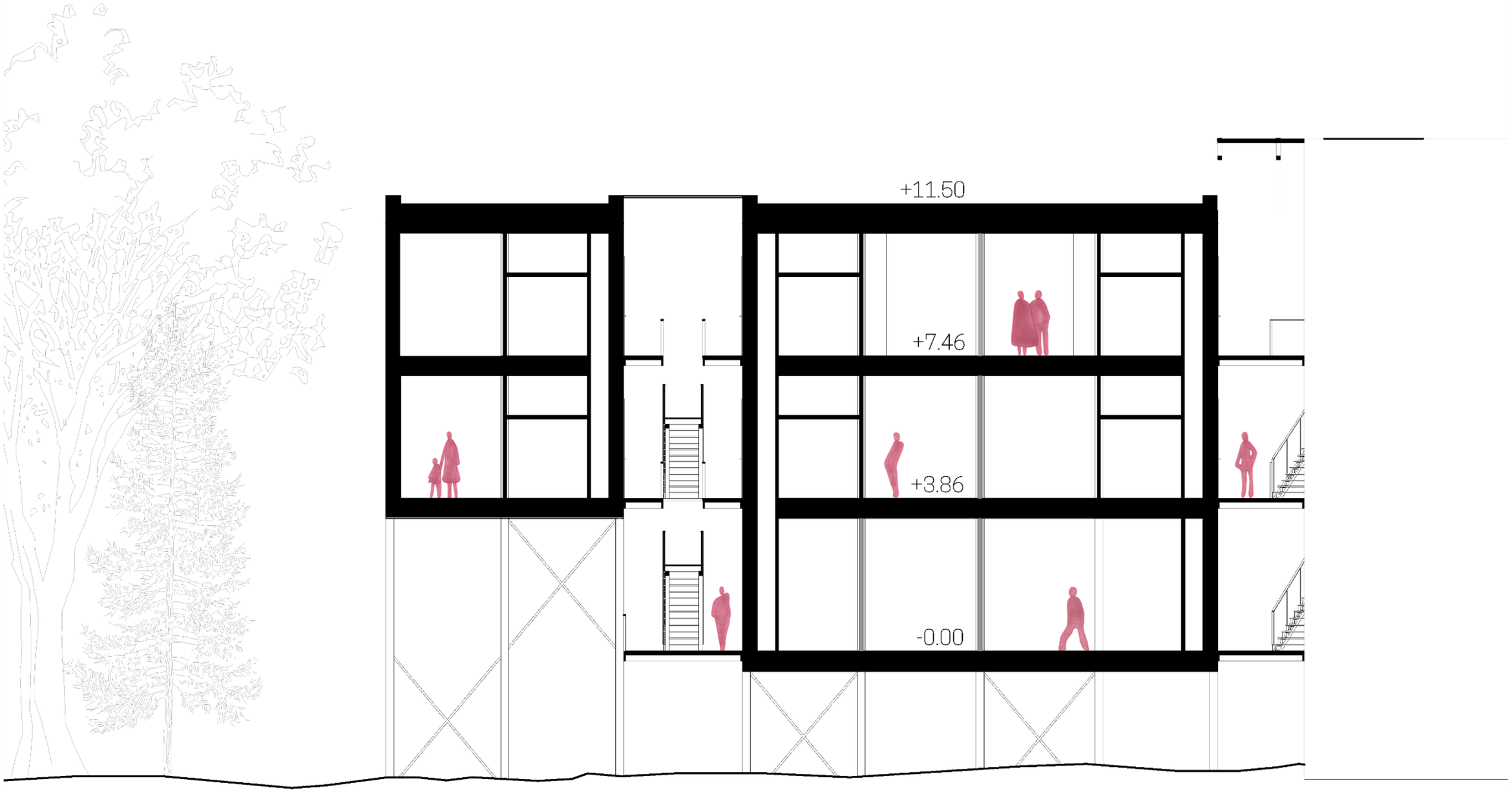
1. Birch plywood 10 mm
2. Plasterboard 13 mm
3. CLT 80 mm
4. Sound isolation 50 mm
5. CLT 80 mm
6. Plasterboard 13 mm
7. Birch plywood 10 mm




ROOF / EXTERIOR WALL
INTERSECTION
M 1:30



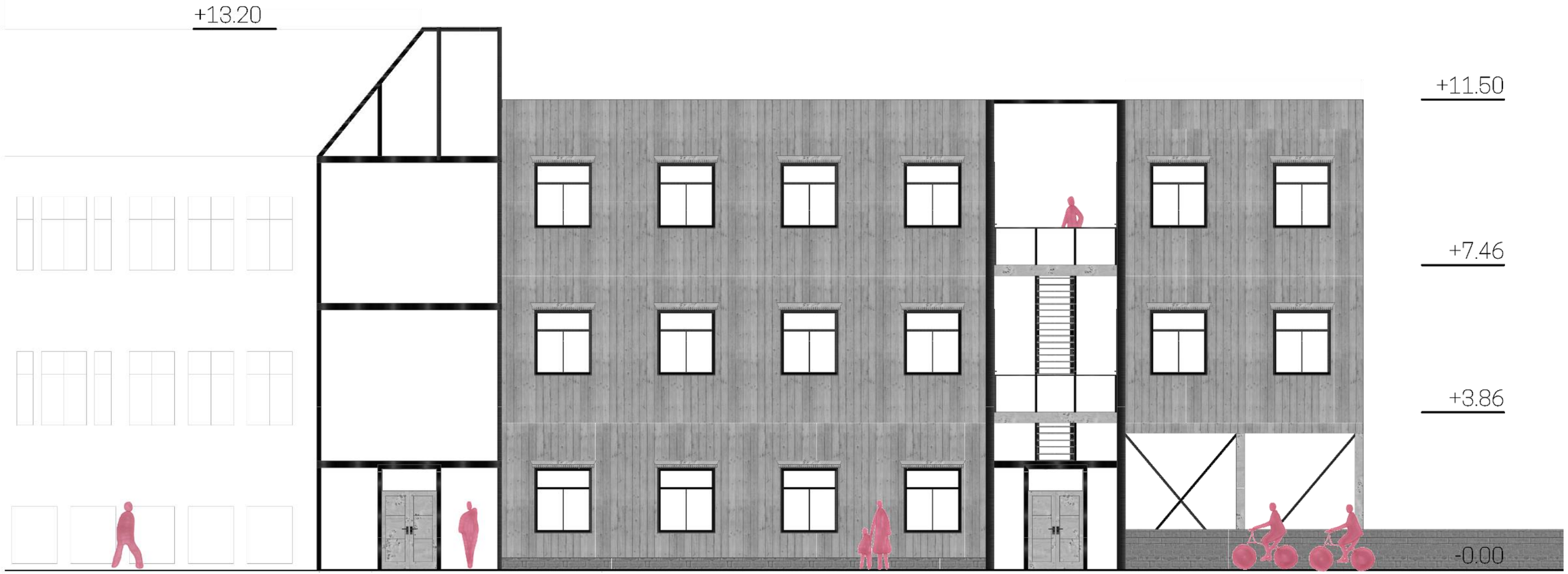

INTERIOR WALL / FLOOR
INTERSECTION
M 1:30




Section L1

M 1:100

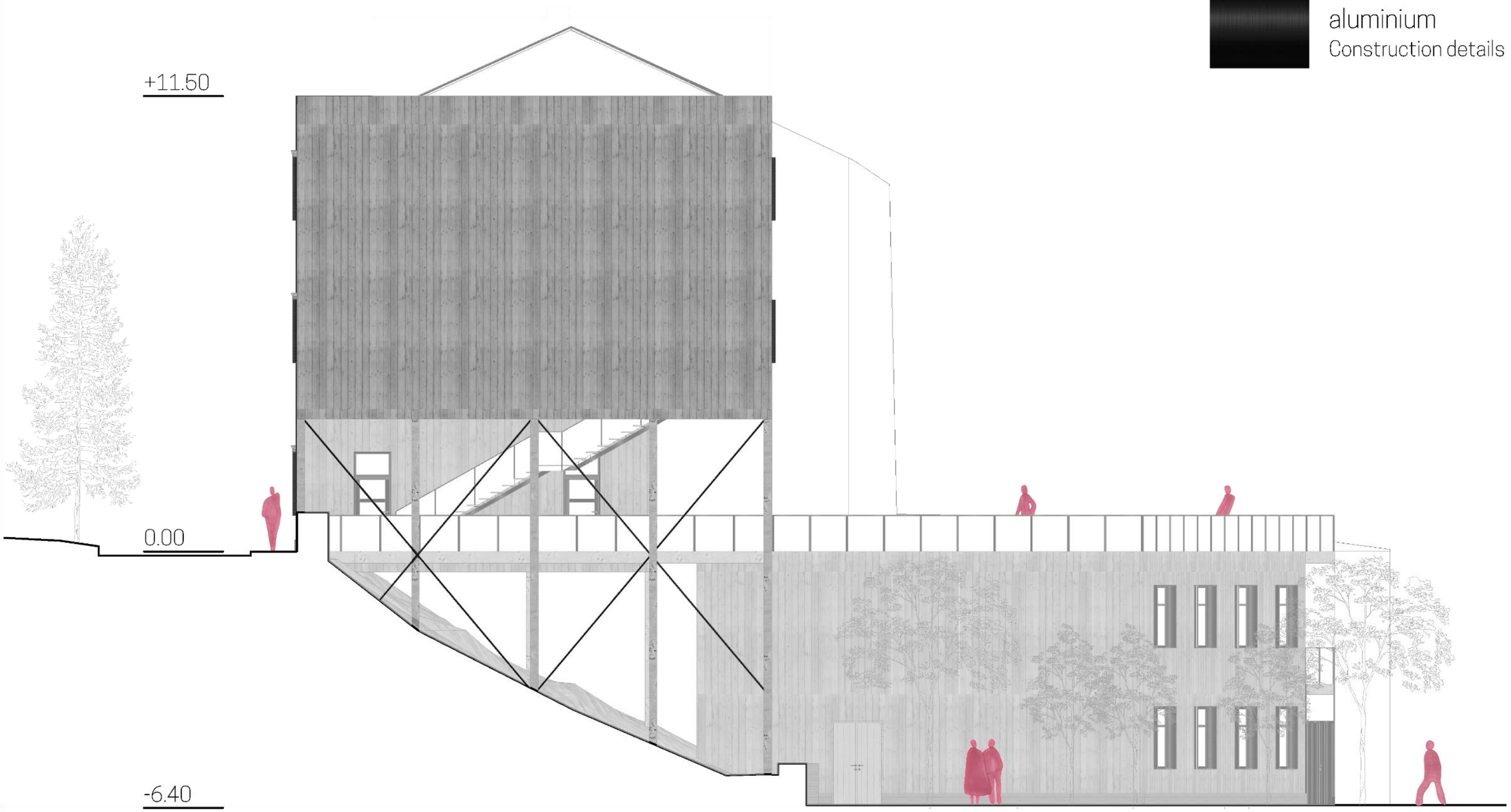
Limestone wall
Preserved material




Toom-Kuninga Street view
M 1:100

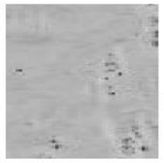
XTend Metal Mesh
Railing mesh

Brushed black aluminium
Construction details

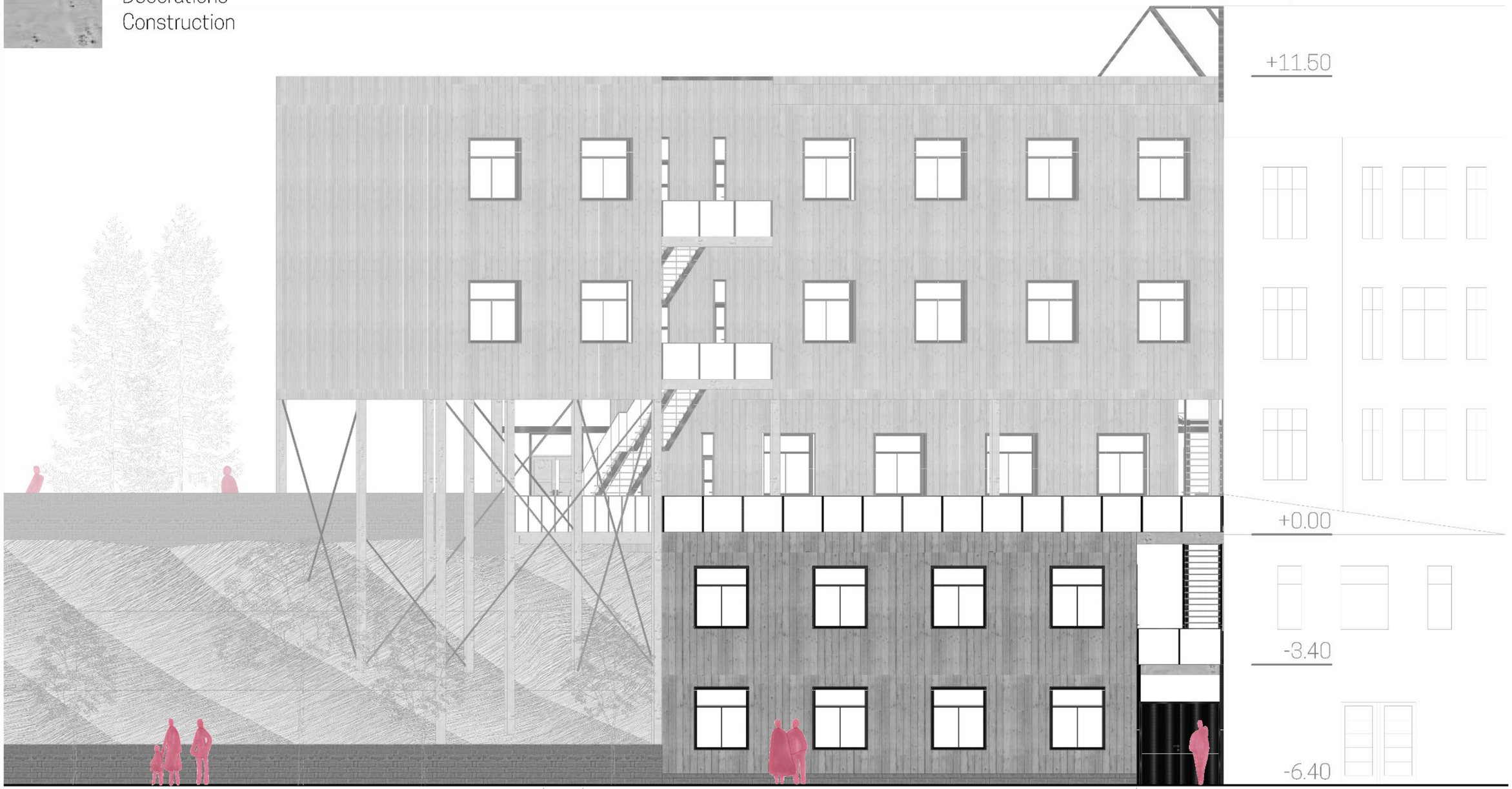



Library view
M 1:100

Treated natural
wood planks
Facade



Mappa burl veneer
Decorations
Construction




Endla Street view
M 1:100

# SUSTAINABILITY

## Construction

The wood construction can be recycled at their end of life. In addition, wood can store carbon from the air. CLT modules allow for a faster building period and produce less waste on site.

## Temperature regulation

The building has two ways to control the temperature within the apartments. Oversized window casings are meant to block most of the higher sun. Additional electric sunshades covering windows from the outside block the lower sun or let it access the apartments during the winter.

## Heating and electricity

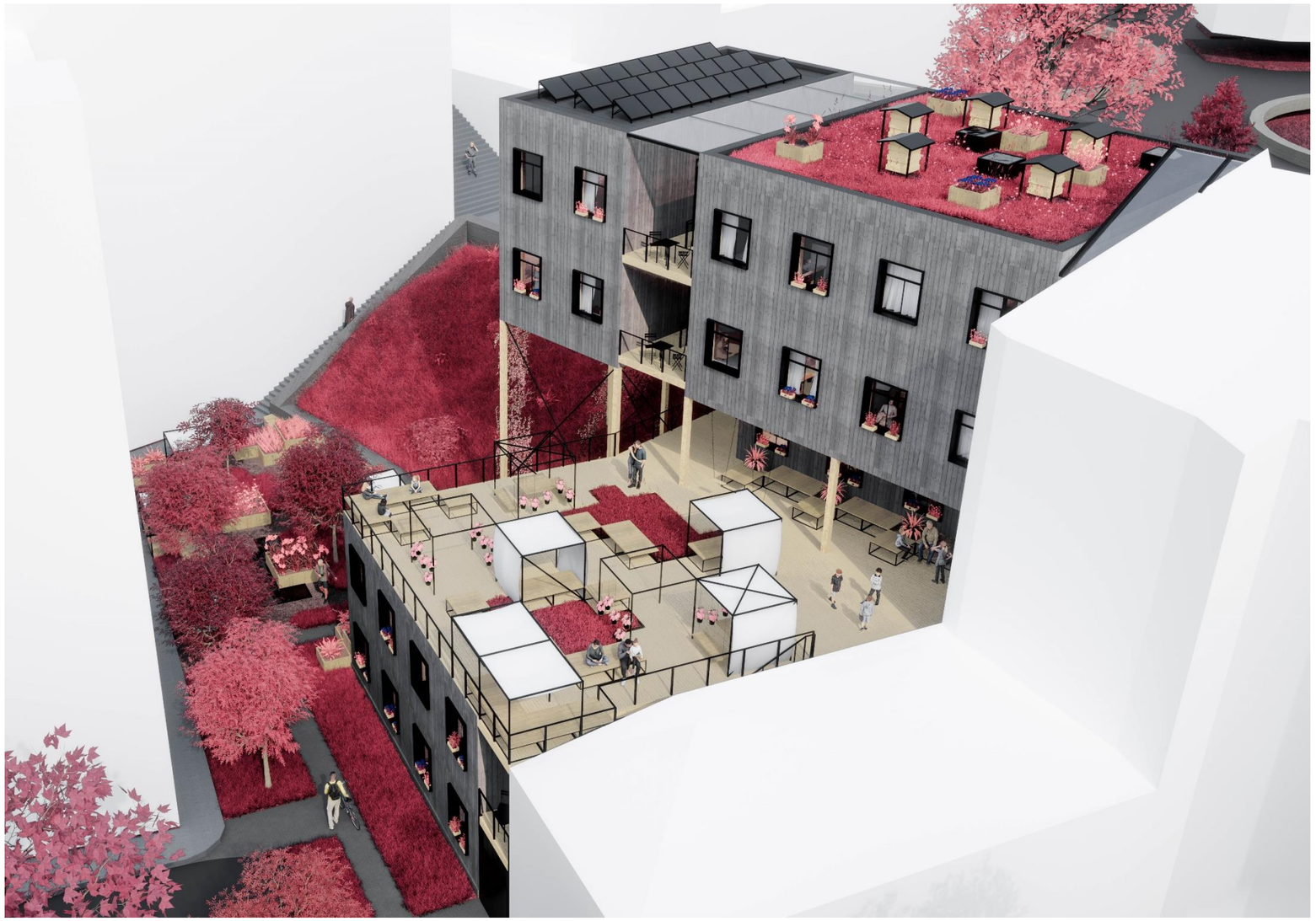
The heating is provided by an air source heat pump installed on site. Electricity is produced on site from the solar panels or bought from the grid.

## Water

The utility rooms is fitted with a water collection system, which can collect runoff rainwater from the roof and the terrace so the residents can reuse rainwater in their apartments or in the garden.

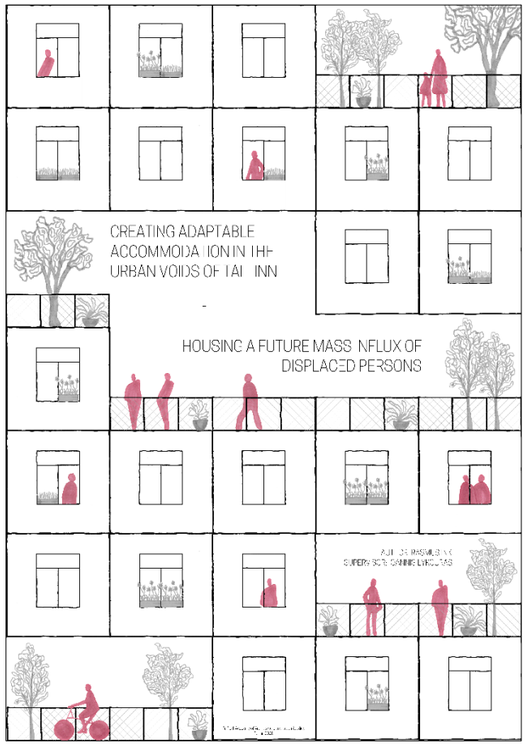
## Integration of non- humans

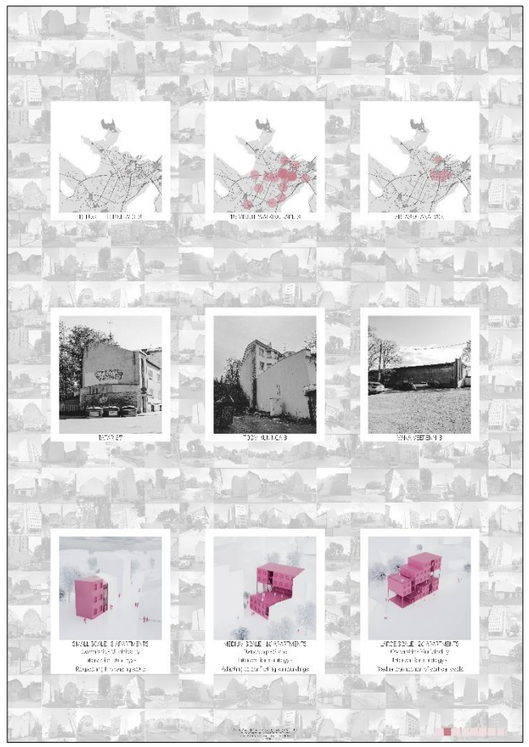
Bees act as pollinators and can benefit the surrounding area and mainly Tuvi Park by pollinating plants. Insects in the insect hotels can transform biomass and regulate pest populations in the area. Plant life on and around the building can filter air and water, which creates a cleaner environment.

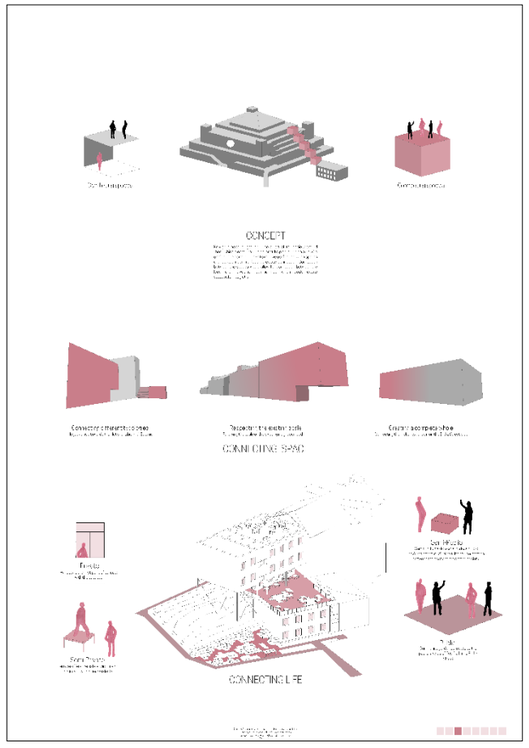


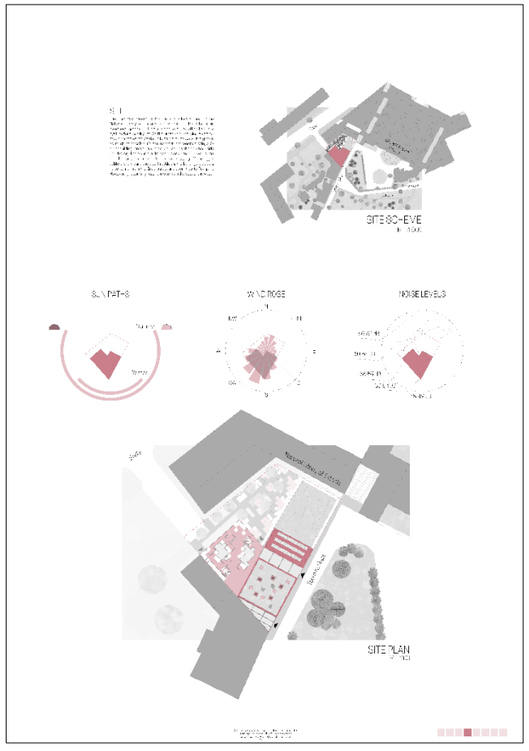
*Render 7. Birdseye view*

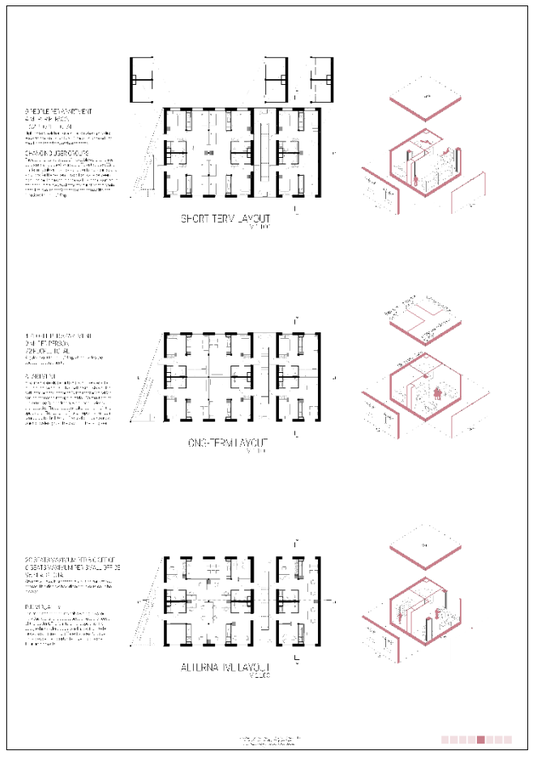
*Render 8. Endla Street perspective*

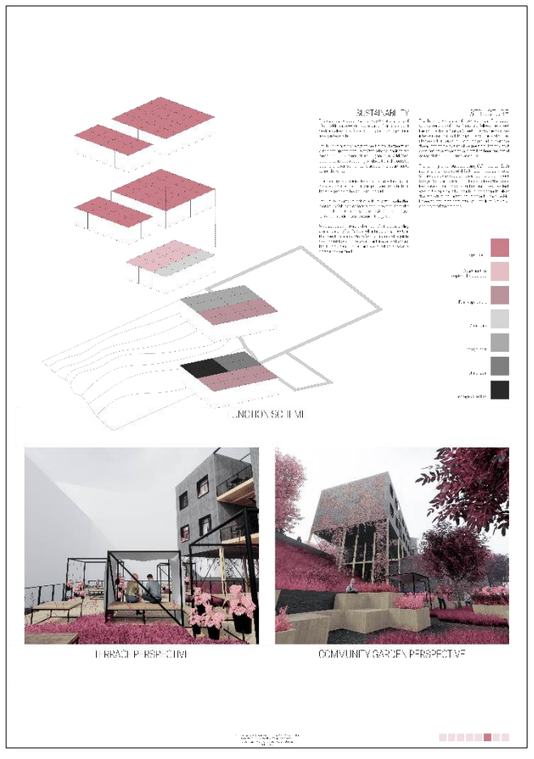


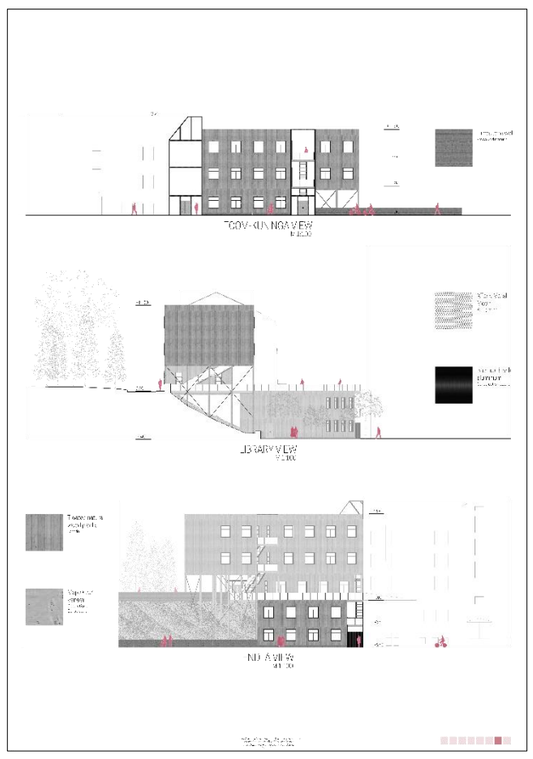



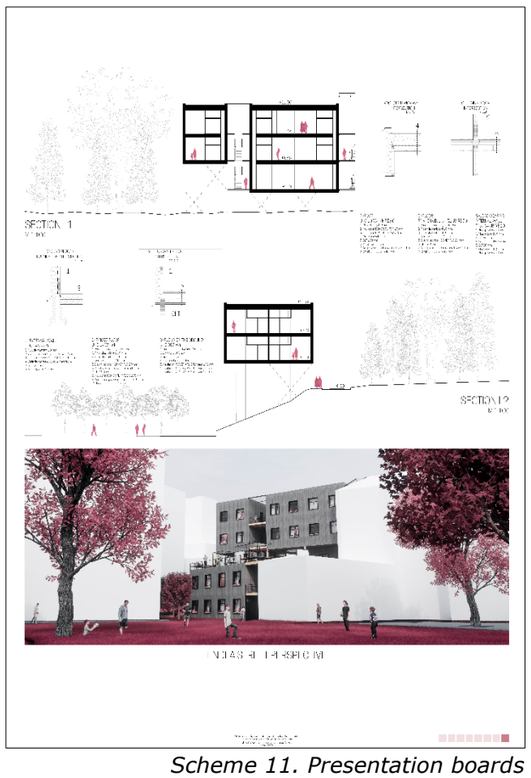





*Scheme 11. Presentation boards*