

FROM OFFICES TO LIVING BUILDINGS

Adaptive reuse of office buildings in Luxembourg as a design strategy to prevent premature obsolescence

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Examiner: Liane Thuvander
Supervisor: Walter Unterrainer

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Master's Thesis Spring 2026

Chalmers School of Architecture
Department of Architecture & Civil Engineering
Architecture and Planning Beyond Sustainability
Building Design and Transformation for Sustainability

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ABSTRACT

Across Europe, many office buildings are becoming partly vacant as new work patterns and hybrid models change the way people use working and living spaces.

At the same time, Luxembourg faces a strong housing demand. A large part of the workforce commutes across the border every day because housing in the city is limited and expensive. This situation shows a mismatch between the existing office building stock and the current housing needs, while young people are increasingly affected by the housing crisis and the difficulty of accessing affordable housing and independent living in the city.

Adaptive reuse is explored as a theory to understand how it can be applied to office buildings. The research aims to identify opportunities for transformation before vacancy becomes permanent. The study combines theoretical research, case studies, and qualitative reflection on social aspects and urban life.

The analysis focuses on an existing office building located in Kirchberg, one of the main office districts in

Luxembourg City. The area hosts several European institutions and public buildings. Most of the activity happens during working hours, but after that, the area becomes quieter because of the lack of public life. The project transforms an existing office building, Monnet 6, into a new urban living hub for students, young adults, and start-up families. It proposes a mixed-use program and communal spaces to support temporary housing for the early stages of life and create opportunities for everyday social interaction, flexibility, and social mix.

Through this transformation, the aim is to propose design strategies that convert the building from a strong office character to a more active and living space. The proposal reflects on how design can transform office buildings into opportunities for housing and contribute to a more resilient and active urban environment.

Keywords: Adaptive reuse; office building; young adult housing.

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01 | Introduction

- Background and problem description
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Background

Construction, Demolition and Environmental Impact

33% of all waste generated in the EU comes from construction and demolition activities, making it the largest waste stream in Europe. (Interreg Europe, 2023)

The world is increasingly experiencing the consequences of the climate crisis, and the construction sector holds a significant share of the responsibility. For decades, it has been one of the largest contributors to carbon emissions and resource depletion. More than a third of all waste in the European Union comes from construction and demolition activities and the sector consumes nearly half of all extracted raw materials (Caro et al., 2024).

However, architects now have the responsibility to promote and implement alternatives to demolition. Studies suggest that refurbishing and adaptively reusing existing buildings can support more sustainable and resource-efficient approaches by extending the useful life of the existing building stock (Langston et al., 2008).

Vacancies

9.5% Europe vacancy rate 2025 (BNP Paribas Real Estate, 2025)

4% Luxembourg vacancy rate 2025 (CBRE, 2025)

“ Owners have four main strategies to deal with vacant office buildings: consolidation, renovation or upgrading, demolition and new construction, and conversion to new functions ”
(Remøy & van der Voordt, 2014)

Across Europe, office buildings are experiencing increasing vacancy levels due to changing work patterns, hybrid models, and shifts in market demand. However, interventions should not occur only once buildings become fully vacant.

Cushman & Wakefield (2023) highlights that almost the 70% of office buildings in are at risk of becoming obsolete by 2030. As part of their life cycle, buildings can follow different trajectories according to functional transformation.

The challenge is to anticipate obsolescence and apply adaptive strategies before buildings become outdated or lose their function. At the same time, the potential for transformation should not be understood only through vacancy rates or market data, but also through the capacity of these interventions to improve urban life.

The housing crisis and urban pressures

Across Europe and in many parts of the world, the housing crisis has become a clear problem. The Rising living costs and speculative urban development have made access to housing more limited than ever (Council of the European Union, 2025).

In Brussels, one in five residents experience housing deprivation and thousands of families remain on waiting lists for social housing. (The Brussels Times, 2024). In Luxembourg, the situation is similar. Despite being one of the wealthiest countries in Europe, with a strong economy and many international companies, access to housing remains difficult. Around 47% of the workforce are cross-border commuters who travel daily from nearby regions in France, Germany, and Belgium (Wiroth, 2025).

Although global agendas continue promoting the right of housing, finding a place to live is becoming increasingly difficult for many people, especially young adults. According to the Council of the European Union (2025), homeownership is becoming unaffordable, particularly for young people and lower-income households, while renting is also becoming more challenging.

Even though new housing construction is necessary, it should not be considered the only solution to face the problem. It is also important to identify opportunities within the existing city that can bring new housing and new uses for this younger population through adaptive reuse and transformation strategies.

New challenges

Luxembourg is one of major office hub in Europe. In recent years have faced increasing office vacancies while struggling with a housing shortage.

This situation creates an opportunity to rethink how existing office buildings can adapt to new uses.

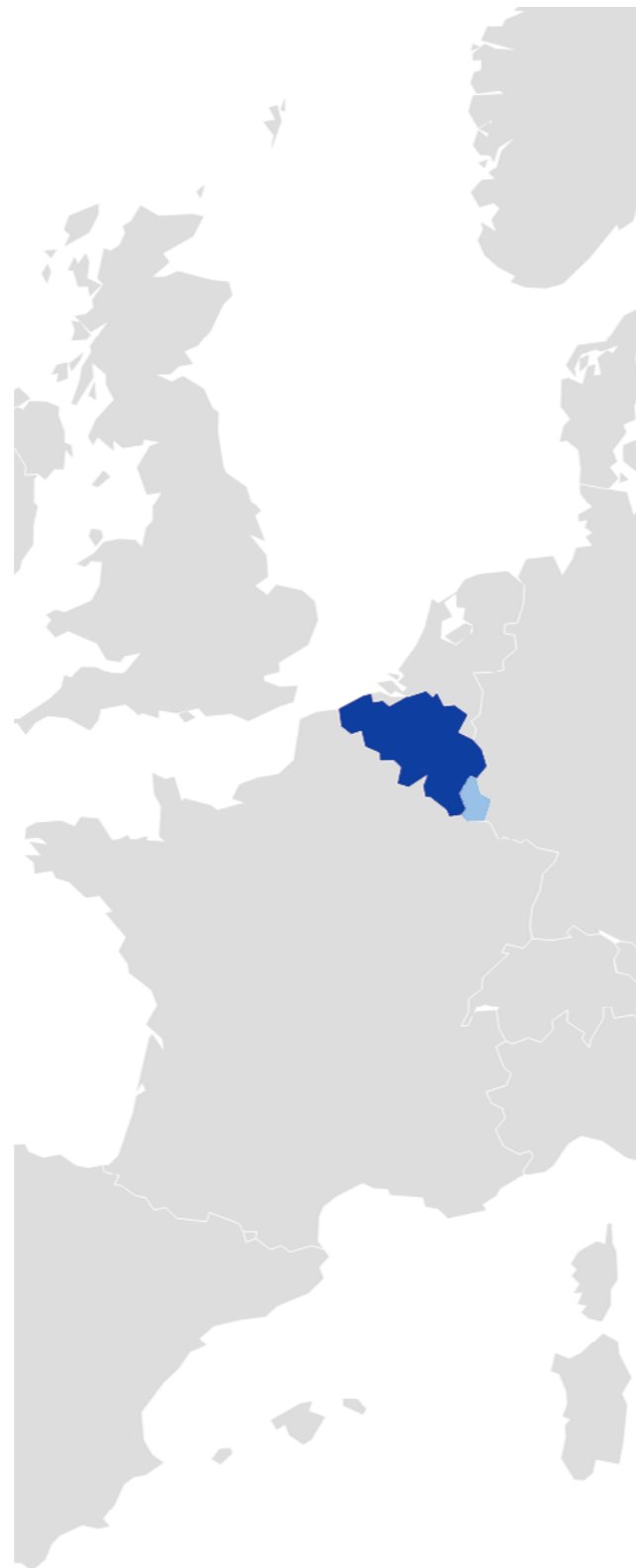


Figure 1: Location map of Luxembourg and Belgium
Source: Base map generated with Map In Seconds and edited by the author.

Aim and research question

Aim

The aim of this research is to explore how **adaptive reuse** can be applied as a preventive strategy against premature building obsolescence. While also understanding how the urban context influences decisions on which office buildings are suitable for transformation, analysing case studies in Luxembourg and Brussels.

The project seeks to identify design and transformation strategies that can integrate housing and mixed uses to extend the life of existing buildings.

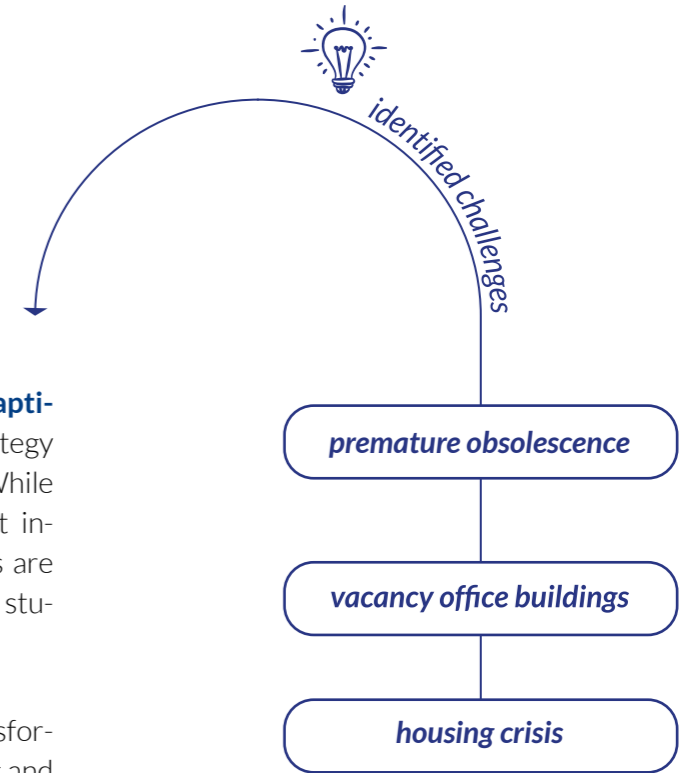


Figure 2: Key Challenges for Adaptive Reuse
Source: Author

Research question:



How can the adaptive reuse of office buildings in Luxembourg be applied as a preventive strategy against premature obsolescence through housing and mixed-use transformation?

Sub questions:

1

What architectural and functional characteristics make office buildings suitable for transformation into housing or mixed use?

2

How can adaptive reuse contribute to create more sustainable, inclusive, and resilient urban environments?

3

How can office-to-housing transformations focused on short- and mid-term living create more accessible housing opportunities for young adults?

Sustainable development

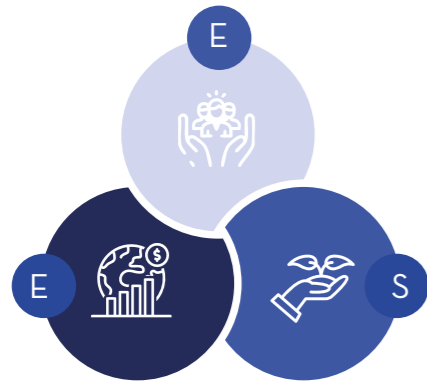


Figure 3: Three dimensions of sustainability
Adapted by author

This project approaches sustainability from an architectural perspective. It applies adaptive reuse as part of the environmental axis extending the life of existing buildings (Langston et al., 2008).

At the same time, the project reflects on the social dimension of housing, focusing on the importance of creating more accessible living opportunities for young adults while integrating shared and social spaces that encourage interaction and community living.

Direct positive impact



- SDG 9:** Reuse of existing infrastructure
- SDG 11:** Creation of accessible mixed-use urban housing
- SDG 12:** Reduction of demolition waste through adaptive reuse

Delimitations

Analysis

This research focus on the preliminary analysis of three existing office buildings in Luxembourg and Brussels as a comparative study to identify the one with the highest potential that will help to understand the adaptive reuse of offices into mixed-use buildings. The project will not include the design development for the other two buildings.

Theoretical framework

The work takes as its main theory adaptive reuse and does not take into consideration any building demolition option, looks to maximize the opportunities for transformation of the existing building.

Context

The thesis is based on the Luxembourg context understanding the site as one of the main factors for design focusing on qualitative aspects from site visits and research.

Program

The project will not assume housing as the only viable reuse result and will explore the balance that should be applied of mixed-use possibilities that combine residential, commercial, and communal functions.

Building

The thesis focuses on architectural solutions based on spatial and programmatic strategies that can help reactivate the building and its surrounding urban context. The proposal introduces new forms of living and activity within the existing structure.

Method

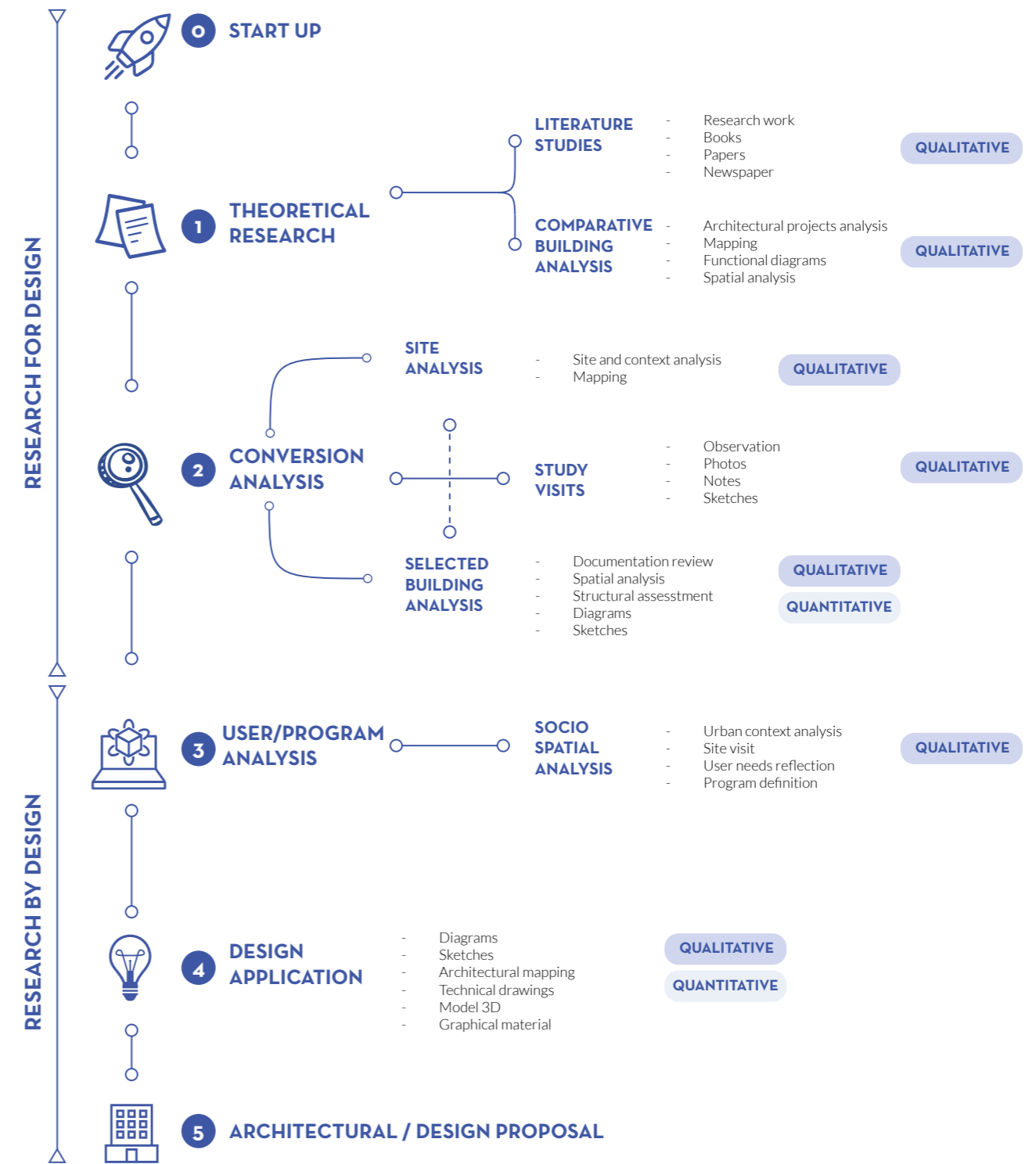


Figure 4: Thesis methodology diagram
Source: Author

Theory

Premature obsolescence:

Premature obsolescence describes when a building becomes outdated or underused before the end of its physical life. This can happen when the original function or spatial layout no longer responds to current needs. In many cities this can be seen in office buildings that start to lose tenants due to changes in working patterns, even though the structure of the building is still in good condition.



Figure 5: Urban transformation towards premature obsolescence of buildings
Source: Stolz et al., 2025

From broad to specific:

Based on the idea of change. The theoretical framework goes from a broad understanding of how buildings can adapt and change to a more specific focus on transforming offices into places where living and working come together.

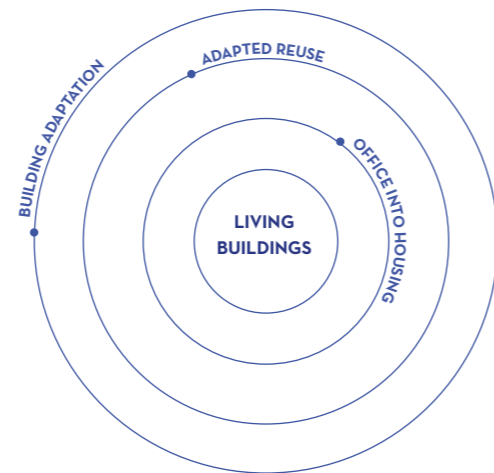


Figure 6: Theoretical scope of the thesis
Source: Author

It connects building adaptation, adaptive reuse, office-to-housing, and the live-work mix as the main design direction.

Building adaptation:

Building adaptation can happen at different levels, from spatial reconfiguration to façade interventions or program changes. Douglas (2002) describes buildings as systems that evolve through different layers, where some elements remain more permanent while others can change more easily. In this sense, adaptive reuse becomes a design strategy that allows buildings to respond to new social and urban conditions while maintaining part of their existing identity.

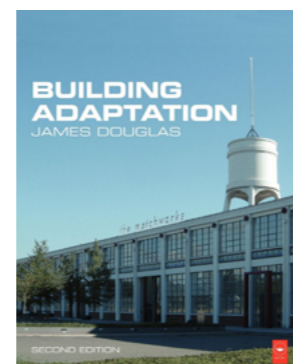


Figure 7: Thesis methodology diagram
Source: Douglas, 2002

Layers of change

The diagram of Shearing layers of change (Brand, 1994, as cited in Douglas, 2002) illustrates how buildings evolve through different layers, each with its own rhythm of transformation. While the site is the most permanent element, the other layers such as structure, skin, services, and space plan continuously adapt to new needs.

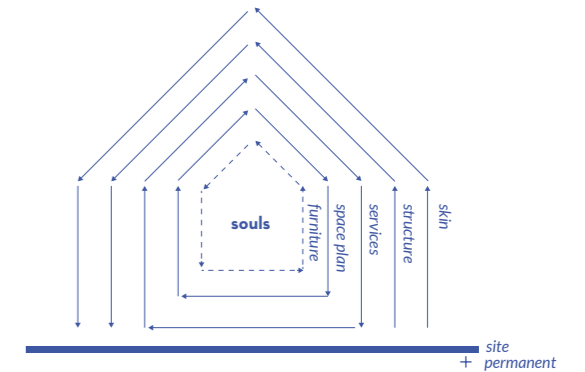


Figure 8: Shearing layers of change
Source: Brand, 1994, as cited in Douglas, 2002

Adaptive reuse:

Adaptive reuse refers to the process of transforming existing buildings to accommodate new uses instead of demolishing them. As Liliane Wong (2025) explains this approach focuses on extending the life of buildings by adapting them to new needs while working with the qualities that already exist. The goal is to not replace structures that are still functional. Adaptive reuse looks at how architecture can reinterpret and transform them over time.



Figure 9: Adaptive reuse, extending the lives of buildings
Source: Wong L, 2025

Adaptive reuse of office buildings:

Adaptive reuse of office buildings looks at how existing office structures can be transformed to support new uses, such as housing. Many of these buildings have open floor plans, regular structural grids and large windows, which can offer opportunities for new layouts. However, they were originally designed for workspaces, so their transformation requires rethinking aspects like circulation, façade, daylight. In this way, converting offices into housing becomes a way to reuse existing structures while responding to new ways of living in the city.



Figure 10: Adaptive reuse of office buildings into housing & Conversion meter, new tool to assess the conversion potential of vacant office buildings into housing
Source: Remøy & Van der Voordt; Geraedts et al. (2014).

Conversion analysis and building selection

The project analyse three buildings from different decades and urban contexts, with the aim to understand the potential for transformation and to identify which scenarios could offer the more flexible and lasting solution based on an architectural perspective.

building, providing an initial understanding of the relevance of each aspect and helping to identify the building with the highest potential for conversion.

The evaluation is based on site visits, architectural plans, and collected building documentation.

For this analysis, the Conversion Meter tool (xx) is used as a first scanning method. The tool divides the assessment into two main components: location and

LOCATION				
Aspect	Gradual criterion	Data source	Assessment	
FUNCTIONAL			Yes	No
1 Urban Location	1 Building in suitable area (Not remote industrial or office area)	Town map/ Google maps		
	2 Good daylight/ Sunlight possibilities	On-site inspection		
	3 Good view from building >75% floor space	On-site inspection		
2 Distance and quality of facilities <i>Remark: The quality of facilities can be described in terms of quality, a wide variety and number of different facilities</i>	4 Shop for daily necessities <500m	Local investigation / Google maps		
	5 Neighbourhood meeting places (square park) <500m	Local investigation / Google maps		
	6 Food service industry (bar, café, restaurant) <500m	Local investigation / Google maps		
	7 Bank / post office <5km	Local investigation / Google maps		
	8 Basic medical facilities (practice, health centre) <2km	Local investigation / Google maps		
	9 Sports facilities (fitness swimming pool, sport park) <2km	Local investigation / Google maps		
	10 Educational facilities (from kindergarten to university) <2km	Local investigation / Google maps		
3 Accessibility by public transport	11 Distance to railway station <2km	Town map/ Google maps		
	12 Distance to bus, tram, underground <1km	Town map/ Transport services		
4 Accessibility by car and parking facilities <i>Obstacles: bottlenecks or thresholds in roads, bridges Flow: 1-way traffic, no parking traffic jam</i>	13 Good flow, normal street quality	Local investigation / Google maps		
	14 Distance to parking sites <250m	Local investigation / Re-design		
	15 <1 parking lot/ 100m2 office space	Local investigation / Re-design		
CULTURAL				
5 Representative impression <i>Remark: Assessment of location dependent of target group E.g. Youngsters not in mono-functional area E.g. 55+ not outside of the city centre related to impression of the building</i>	16 Situated centrally (no near highway locations)	Town map/ Google maps		
	17 Other buildings presented in direct neighbourhood	Town map/ Google maps		
	18 Lively neighbourhood	On-site inspection / local press		
	19 Direct availability of green environment	Local investigation / Google maps		
	20 Area has a good reputation/ image: no vandalism	On-site inspection / local press		
	21 Area has good air quality and air pollution and noise hindrance	On-site inspection / local press		
			Total Location (=number Yes)	0
			Default weighting	5
			Maximum score	105
			FEASIBILITY SCAN LOCATION	0
				A

BUILDING				
Aspect	Gradual criterion	Data source	Assessment	
FUNCTIONAL			Yes	No
1 Year of construction or renovation	1 Building >3 years	Year of construction		
	2 Building renovated >3 years	Year of last renovation		
2 Vacancy	3 Completed building is vacant	Estate agent		
	4 Building vacant >3 years	Estate agent		
3 New housing	5 Capacity building >20 1p units/ 50m2	>1000m2 floor space		
	6 Layouts adaptable for local target groups	Sketch design		
4 Extensibility	7 Horizontal extension building possible (neighbouring buildings)	On-site inspection / Google maps		
	8 Vertical extension building possible (not inclined roof/ light construction)	On-site inspection / Estate agent		
	9 Possibilities for construction basement	On-site inspection / Estate agent		
CULTURAL				
5 Representative impression related to impression of location	10 Identifiable compared to surroundings buildings	On-site inspection		
	11 Own identity realisable	On-site inspection/ re-design		
6 Cultural heritage	12 Being not a cultural heritage: simplifies transformation	Municipality		
7 Access (Entrance, elevators, stairs)	13 Clear, safe, clarifying building entrance	On-site inspection/ re-design		
TECHNICAL				
8 Condition of maintenance	14 Well maintained; maintenance up-to-date	On-site inspection/ Facades		
	15 Depth of the building <10m	On-site inspection / Estate agent		
9 Dimensions of support structure E.g. Facade grid size, determines location inner walls	16 Grid support structure >3,6m	On-site inspection / Estate agent		
	17 Height dimension between floors <6m	On-site inspection / Estate agent		
10 Support structure (walls, columns, floors)	18 Condition support structure is good/ not hazardous	On-site inspection / Estate agent		
	19 Possible connection inner walls on grid <5,4m	On-site inspection / Estate agent		
11 Facade External living space dependent of target group cultural heritage limited/ not adaptability	20 Facade/ opening well adaptable	On-site inspection		
	21 Facade windows can be reused/opened	On-site inspection/ re-design		
12 Installations	22 Sufficient service ducts can be constructed	On-site inspection/ re-design		
	23 Sufficient daylight factor >90% floor surface new units	On-site inspection		
LEGAL				
14 National building decree, scape and access routes	24 Elevators available/ easy realisable in building (>4 stories)	On-site inspection / Estate agent		
	25 (Emergency) stairways available/ realisable	On-site inspection/ re-design		
	26 Distance of new units to stair/elevators <50m	On-site inspection/ re-design		
			Total Building (=number Yes)	0
			Default weighting	3
			Maximum score	78
			FEASIBILITY SCAN BUILDING	0
				B

STEP 3: DETERMINATION CONVERSION POTENTIAL CLASS OF OFFICE BUILDING			
Conversion Score Location + Building = 0-37	Class 1: No transformation potential	Total Score Feasibility Scan A+B	0
Conversion Score Location + Building = 38-74	Class 2: Hardly any transformation potential	Maximum score Location + Building	183
Conversion Score Location + Building = 75-111	Class 3: Limited transformation potential	Conversion class	
Conversion Score Location + Building = 112-147	Class 4: High transformation potential		
Conversion Score Location + Building = 148-183	Class 5: Excellent transformation potential		

Montoyer 40

Brussels, 1987

Total sqm: 3909 sqm

Vacant sqm: 2091sqm

Montoyer 40 is located in the Leopold Quarter at the European district, surrounded by institutions and office buildings. This building represents the typical mono-functional office block in a dense urban area, where life mostly happens during working hours.

This project can be a good example to explore how offices in such contexts could integrate new functions and bring daily life back into the neighbourhood.



Figure 11: Typical floorplan Montoyer 40
Source: Adapted by the author from building documentation



Figure 12: Existing facade of Montoyer 40
Source: Author

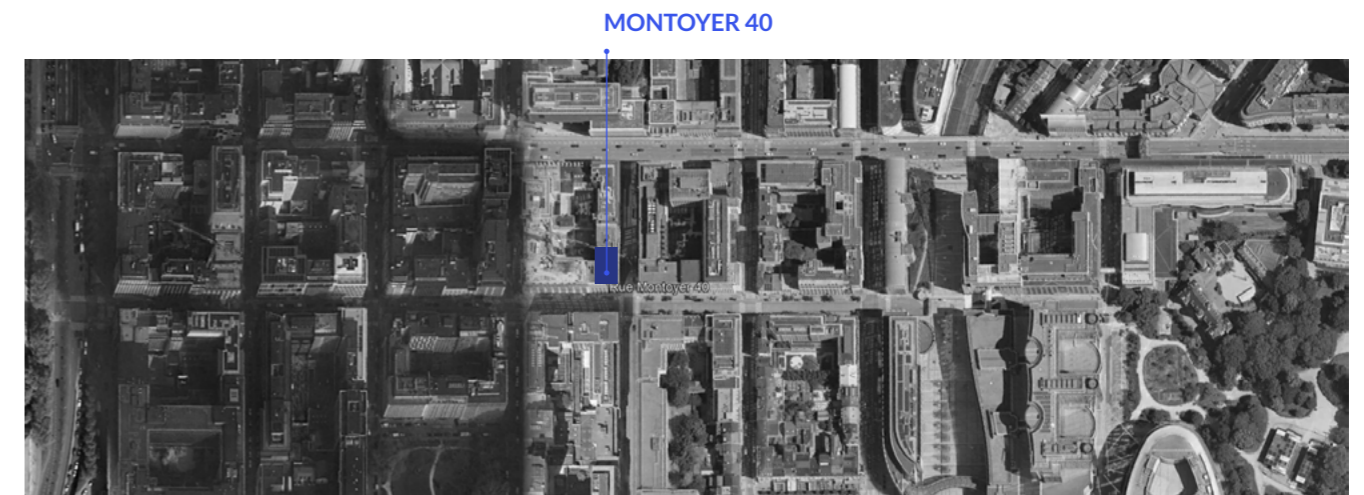


Figure 13: Urban context of Montoyer 40
Source: Adapted by the author from Google Earth, 2025

Conversion meter analysis

Conversion score location: 70 points (A)

Conversion score building: 42 points (B)

Total: 112 points

Class 3: Limited transformation potential

Result: This analysis demonstrates that the urban environment plays a crucial role, achieving a high score even though the building presents certain limitations, particularly due to its heritage status.

Da Vinci

Luxembourg, 2004

Total sqm: 11553 sqm
Vacant sqm: 2146 sqm

Da Vinci is located near the airport area, a zone strongly connected to mobility and cross border activity. Although the building is only around 20 years old, it already shows a degree of vacancy, what make to think about its next step and potential for conversion.

Its position along key mobility routes makes it an interesting case to explore how adaptive reuse can activate underused areas.

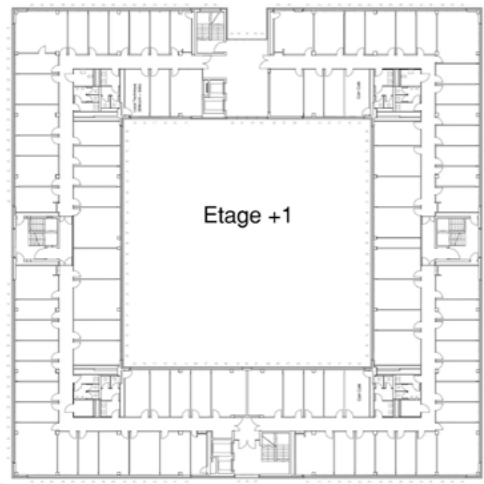


Figure 14: Typical floorplan Da Vinci
 Source: Adapted by the author from building documentation



Figure 15: Existing façade of Da Vinci
 Source: Author



Figure 16: Urban context of Da Vinci
 Source: Adapted by the author from Google Earth, 2025

Conversion meter analysis

Conversion score location: 30 points (A)
Conversion score building: 75 points (B)
Total: 96 points
Class 3: Limited transformation potential

Result: This analysis demonstrates that, although the building itself has significant potential, the location limits its conversion possibilities, as it does not provide sufficient services and amenities in the surrounding area.

Monnet 6 (Selected building)

Luxembourg, 1992

Total sqm: 11553 sqm
Vacant sqm: 2146 sqm

Monnet 6 is located in Kirchberg, a district defined by large scale office buildings and EU institutions. Even though it's one of Luxembourg's most active business areas, it becomes quiet after office hours. This contrast makes it an interesting case to think

about how mixed-use or live-work concepts could bring more continuity to an area that currently feels disconnected from everyday life.

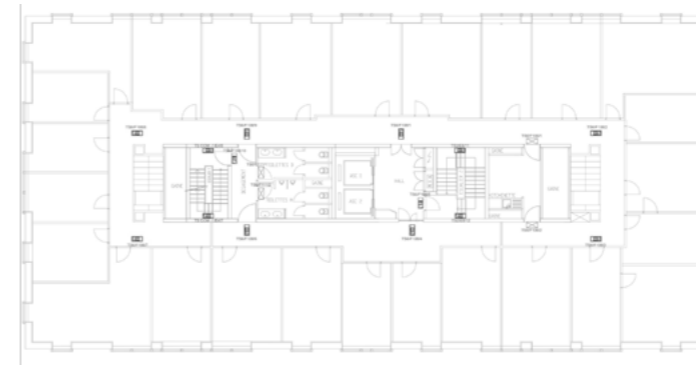


Figure 17: Typical floorplan Monnet
 Source: Adapted by the author from building documentation



Figure 18: Existing façade of Monnet
 Source: Author

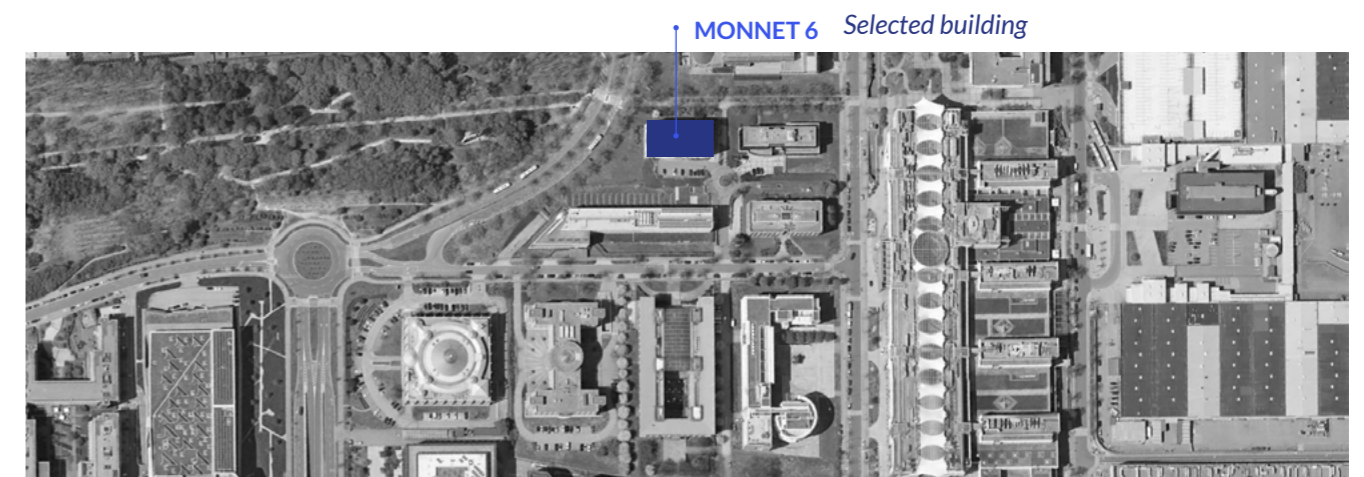


Figure 19: Urban context of Monnet
 Source: Adapted by the author from Google Earth, 2025

Conversion meter analysis

Conversion score location: 95 points (A)
Conversion score building: 63 points (B)
Total: 157 points
Class 5: Excellent transformation potential

Result: Differing from the other buildings, this one presents a strong opportunity due to its central and active urban environment. As a medium scale building, it demonstrates favorable conditions for transformation and adaptive reuse.

Site analysis

History

The selected building, is located in Luxembourg City, in a strategic and well-known office district. However, this district in the past was known because of its agriculture. It was in 1867 when the fortress of the medieval city was demolished, and the city was

allowed to be expanded, but it was not until 1952 that Luxembourg became part of the steel association and Kirchberg began to develop as an European district becoming one of the most important zones with the most important offices until today.

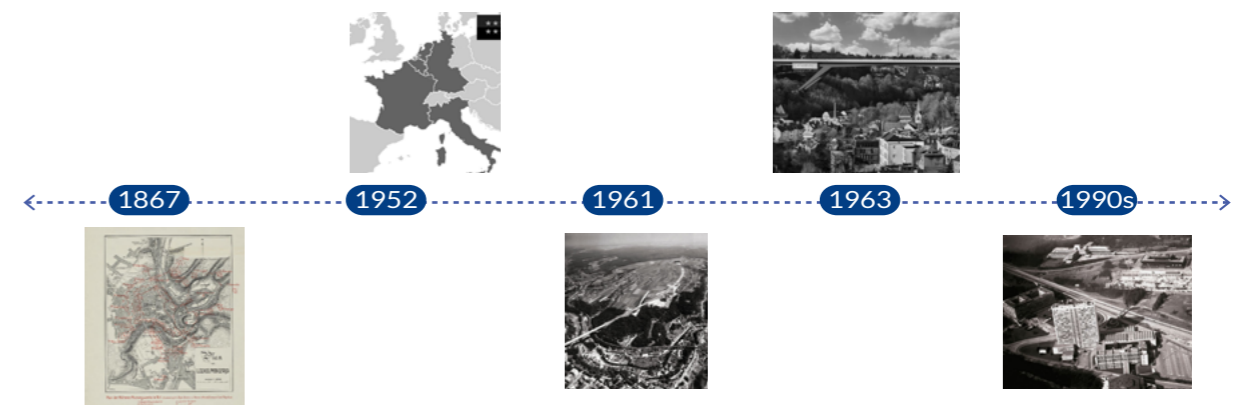


Figure 20: Timeline of Kirchberg
Source: Images compiled and edited from Fonds Kirchberg (2024).

The urban development of the area is clearly shown in the maps, showing in 1963 as a rural and forest area, having the potential for expansion because of the plateau. The main structure has not changed in recent years, but the density and office character are changing every moment. Luxembourg is well

known as one of the most important office hubs in Europe and its surroundings because of the potential connections with cross-border and accessibility that the big offices prefer for their business, workers, and clients.

02 | Selected building analysis

- Site analysis
- Site visit
- Building analysis
- References projects



Figure 21: Map 1963
Source: Adapted by the author from Luxatlas 2026 2009

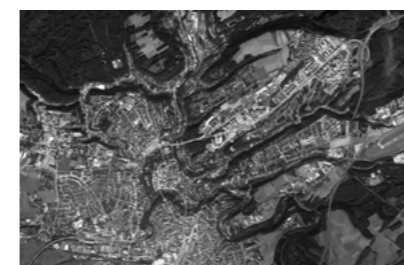


Figure 23: Map 2009
Source: Adapted by the author from Google earth, 2026



Figure 22: Map 1991
Source: Adapted by the author from Luxatlas 2026 2025



Figure 24: Map 2025
Source: Adapted by the author from Google earth, 2026

Context



Figure 25: Urban Context of Monnet 6
Source: Adapted by the author from Google earth, 2026

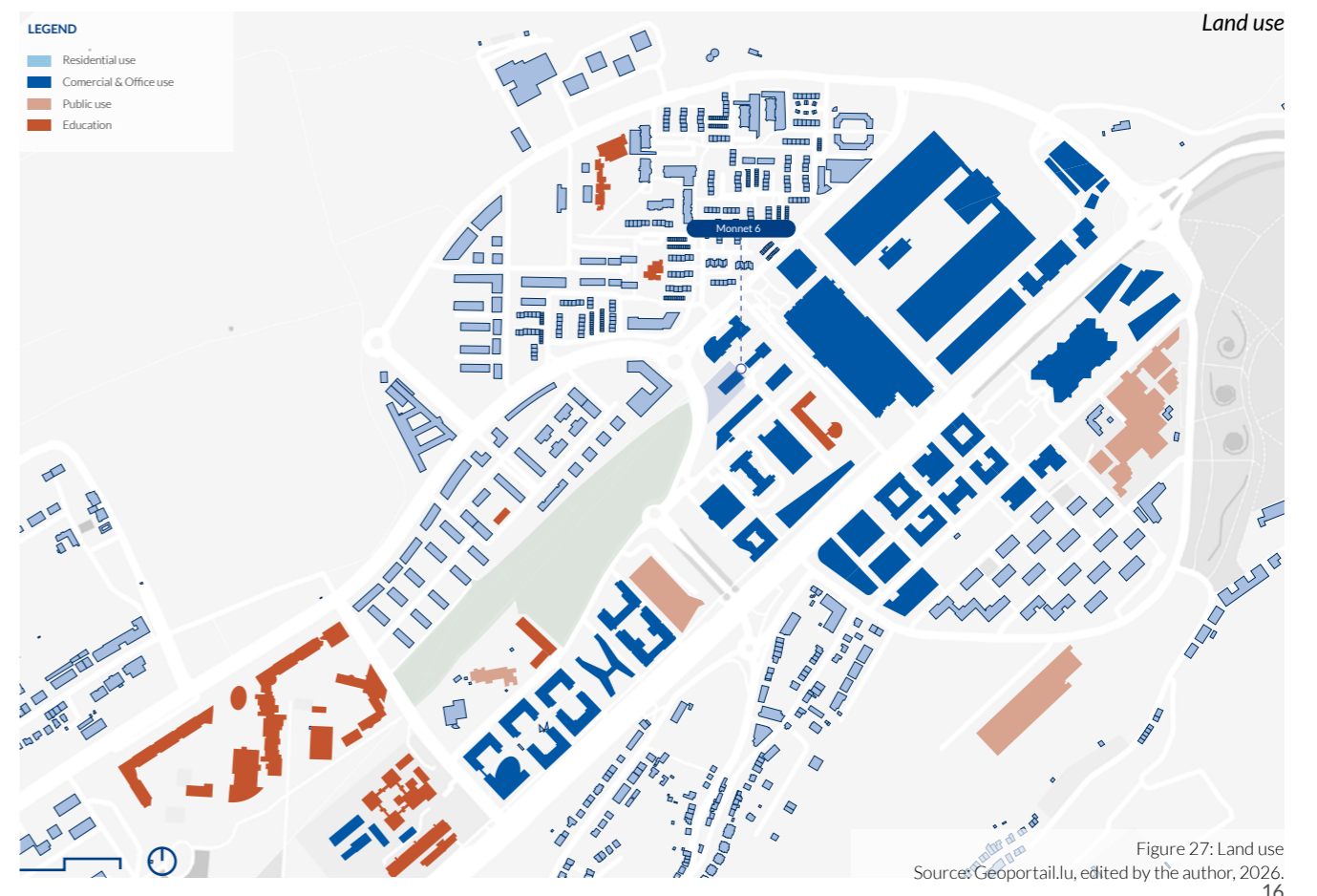
The Kirchberg district is one of the most attractive areas in the city and it hosts several large office buildings as well as important public institutions. The main Avenue John F. Kennedy is one of the most important axes of the city and is well known as a preferred address for large companies because of its prestige.

The area is mainly characterized by office buildings, but also has many educational institutions as the University of Luxembourg and the European School. During working hours, the neighbourhood is very active, supported by places like the Kirchberg Shopping Center and the exhibition park, where different programs and events take place.

However, after working hours became an empty neighborhood and is not really preferred for after-work activities as the program's attractiveness is in other parts of the city.

Kirchberg is also surrounded by forests and green areas. The centrality is well preferred from international community. Today, more than 50% of the population is international.

One of the main challenges is that most of the local people prefer to live in other areas, such as towns or across the border, because of the high demand and low availability of housing in central areas. This neighborhood has very good connections to the city centre and the highway network, which is particularly important in the Luxembourg context for the large cross-border community that commutes daily to work.



Connectivity

Luxembourg City has a very good connection with public transport, as it's free. Most people use a bus or tram to go to their destinations. However, it's still a huge car demand because of the distances from home to work and the cross-border workers who need to arrive daily at their destinations. Also, the active mobility as bikes in Luxembourg has its own shared bike services.

Kirchberg is a very well-connected area with public transport. As the location is near the main avenue, John F Kennedy is the main axis for the tram line. Also, plenty of bus stops are around the building.

pping center and the exhibition park, which are considered key points of mobility, as many buses and trams cross over this stop and make it possible to connect to different points of the city.

In terms of car connection, the Boulevard Konrad Adenauer and the John F Kennedy Av. allows people to take direction to the highway to avoid traffic and take the highway as they need to go to towns or cross over the city.

The selected building, Monnet 6, is located at Jean Monnet and Carlo Hemmer streets. It has a privileged location because of its proximity to the Sho-



Site visit

Context scale

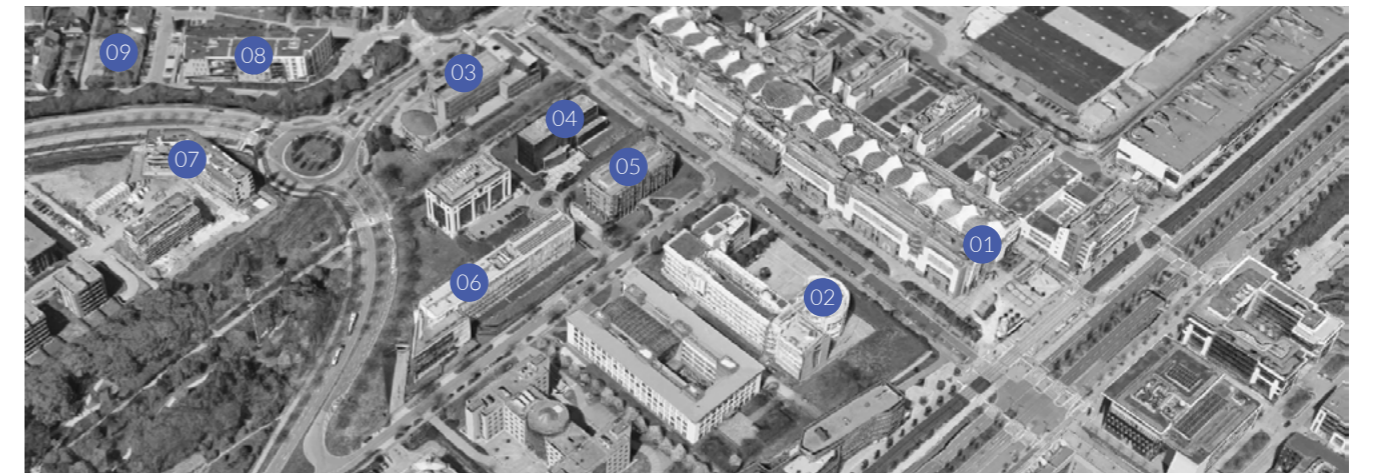


Figure 29: Context scale site visit
Source: Adapted by the author from Google earth, 2026

Building typologies



Office buildings



Residential typologies



Figure 30: Surrounding building typologies
Source: Author, 2026

Building visit

Description

For the analysis and development process for the project, the site visit was an important step. For the selected building, two site visits, one in the preliminary analysis and one more during the deep analysis of the building, focusing on understanding more factors and details that can help to make decisions in the future.

Connectivity:

The building is in a well-connected area, but it feels a bit isolated because the main façade faces the back of the other buildings. However, a big potential was identified with the park façade which doesn't have any physical connection with the building, but in terms of spatial and use of the urban spaces, it is an important axis because it connects the central park with a pedestrian street next to the building that brings people to the shopping center and the main neighborhood.

Character:

The building has a strong office character and lacks human-scale elements that invite people to approach the building. When people walk next to it find it easy to skip looking at the building, as the groundfloor doesn't have any attractive program or space to engage them.

Indoor:

The two site visits allowed us to understand the building in different conditions: one with some floors occupied by tenants and others vacant, and another during the ongoing works, which allowed us to see the potential of the space when the floor remains open. The office spaces had typical layouts with several closed one person offices and some meeting rooms.

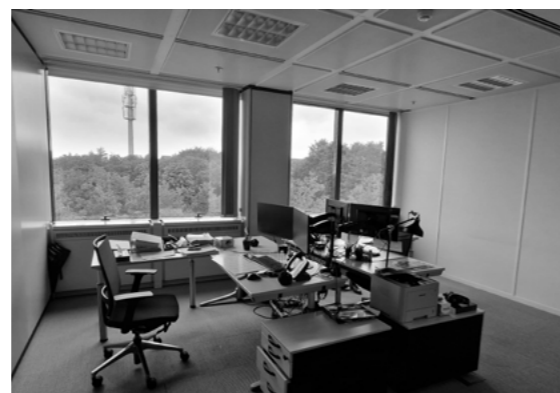


Figure 31: Site visit documentation
Source: Author, 2026

Circulations and hallways:

The building has two main staircases used for evacuations and long corridors that are the access to every floor for the tenants, particularly every floor is divided into two tenants.

Rooftop:

The building has a rooftop level used for installations such as HVAC, sprinklers, and other technical requirements. This floor is not accessible, and presents itself as a technical level. The open area is surrounded by a small terrace that is not accessible to the tenants, with an interesting view from the context and other buildings in the near because the scale is similar and no building blocks the view. This terrace is identified as a strong opportunity for the design phase because it can be used by the community as shared space.

Basement:

The building has three basement levels. Two and a half of them are currently used for parking, as the building was designed in a period when office buildings in the area required a large number of parking spaces. The space feels more enclosed and does not show much provision for storage or technical areas. This condition also reveals an opportunity to rethink the use of these spaces and question the future of the parking slots, considering whether parking should still be a priority, especially when three levels are dedicated to cars compared to the levels used by people.

Conclusion:

The building is recognized as a potential site for transformation and is considered in relation to its connections, such as transport and the surrounding urban spaces. These visits allowed a better understanding of both the site and the building, helping to inform the next design phase.



Figure 32: Site visit documentation
Source: Author, 2026

Building analysis

Context

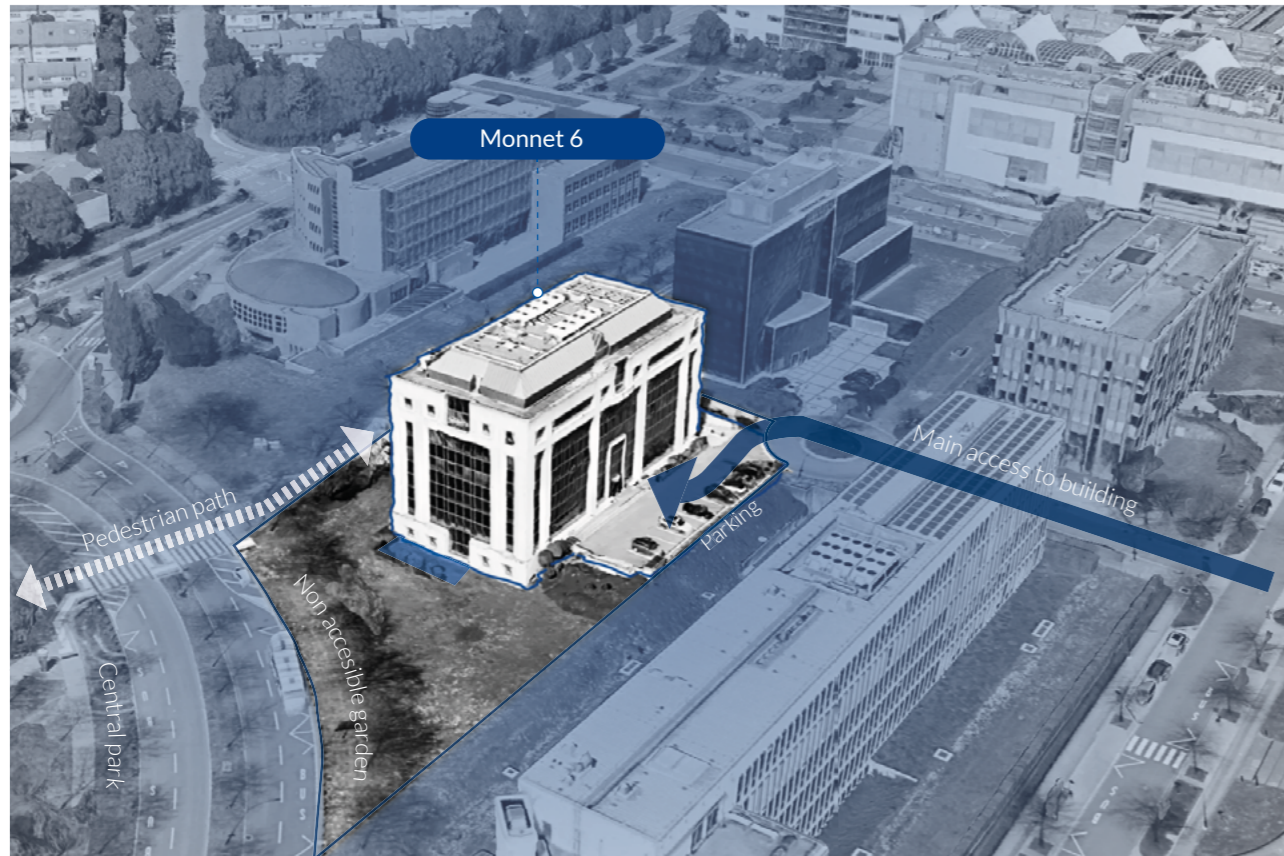


Figure 33: Urban connections
Source: Adapted by the author from Google earth, 2026

Monnet 6 is an office building built in 1992, surrounded by other office buildings, shopping center, major banks, and several European institutions.

The building consists of five storeys: a ground floor and four additional levels, as well as three basement levels, where the -1 level has direct contact with a green space. Today, the building is partly vacant, as the office market often moves towards newer buildings or prefers more contemporary spaces due to future growth expectations. The main access to the building is from Jean Monnet Street, and there is an emergency exit at the back, slightly connected to the pedestrian path. The building is divided into 4 components for analysis purposes that can help to understand the diffe-

rent parts based on the function and space: Basement, groundfloor, middle, and top part.

Building components

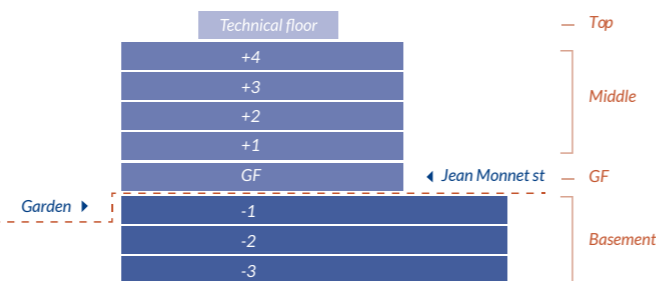


Figure 34: Diagram building components
Source: Author, 2026

Typical floor plan

Since the beginning the building has been designed for office purposes. Has a typical floor plan of 41m by 22 meters with a central core where the circulation elements are, such as a lift and two staircases, toilets, two shafts, and storage. This core allows the

central corridor to communicate the office layout that has a window perimeter with a typical depth of 7 meters. The layout is made of plaster, which allows for flexibility and future different layouts.

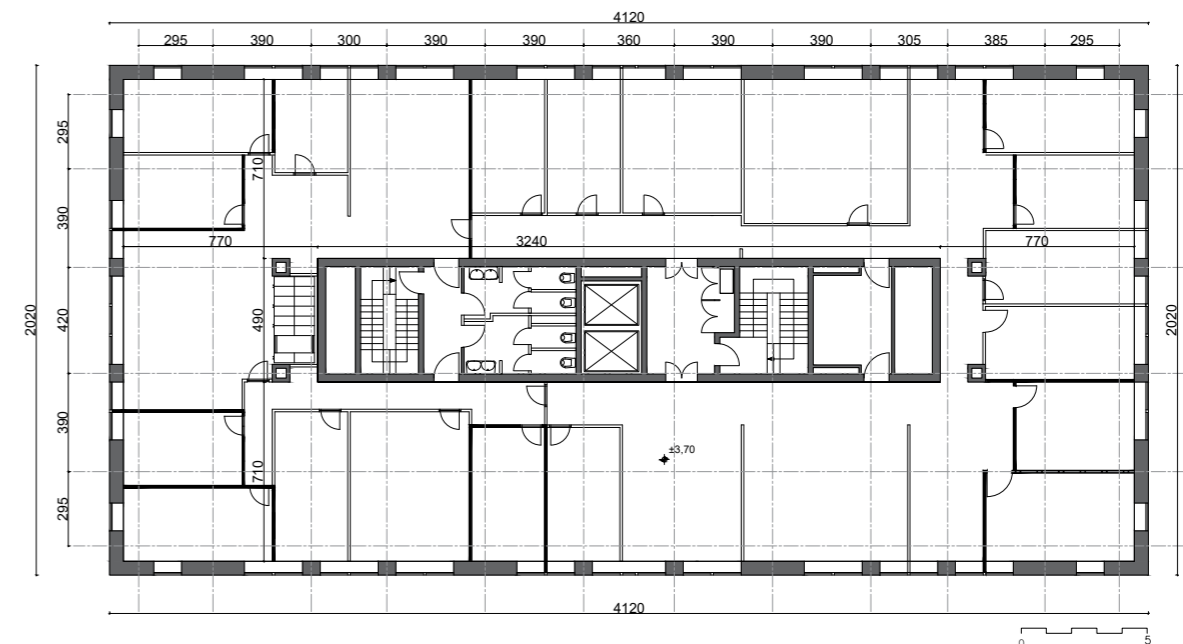


Figure 35: Typical floorplan Monnet 6
Source: Adapted by the author from building documentation

The building has an orientation north easter what allows for the 4 façades to receive daylight. Based on a Velux simulation analysis, shows how the daylight factor is good in the perimeter and has a slightly dark core, also the structure elements in the corner decrease a bit the daylight factor, but it doesn't seem to be a problem for future design decisions.

This situation is similar at all levels, as the configuration remains the same. What comes to the reflection on the possible partitions and strategies to reflect on the space quality of the corridor and future use for the core.

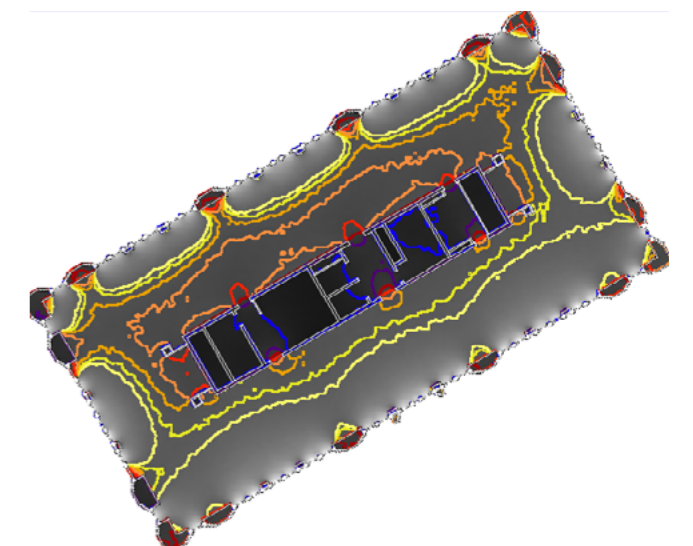


Figure 36: Daylight analysis (Velux)
Source: Author, 2026

Sections



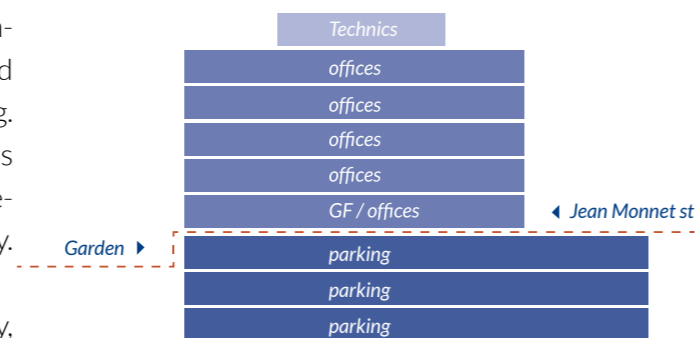
Figure 37: Longitudinal section
Source: Adapted by the author from building documentation

Space

The building's total height is 22 meters compared to the surrounding keep a scale and can be considered as a low-rise building. The section shows how the configuration is perimetral and has the possibility of two levels of groundfloor because of the topography.

The existing program is based on office needs. Today, the basement levels are mainly used for parking, installations, and storage. Having in total 133 parkings and also one tenant in the -1. The other two and a half levels are mainly used for cars. The building doesn't consider any bike parking inside or outside.

Existing program



Building height:

1 Basement:	2.70 m bellow suspended ceiling: 3.50 to underfloor heating
2 Basement:	2.40 m to underfloor heating
3 Basement:	2.40 m to underfloor heating
Groundfloor:	2.70 m bellow suspended ceiling: 3.50 to underfloor heating
Upper floors:	2.70 m bellow suspended ceiling: 3.50 to underfloor heating

Façade



Figure 38: Main façade
Source: Adapted by the author from building documentation

Character

Regarding the time of the construction and location, the building shows a strong office character with long glass façades that are made of windows and non-reflective glass that hide the structure. The façade has also elements to emphasize the verticality and entrance to focus on the monumentality of the office building.

The façade is made of white stone cladding, which allows more character of purity, monumental, and power, without any human scale element or open use to invite the public to access the building. The four façades keep the same logic and design.



Figure 39: Exterior views of the building
Source: Author

Structure

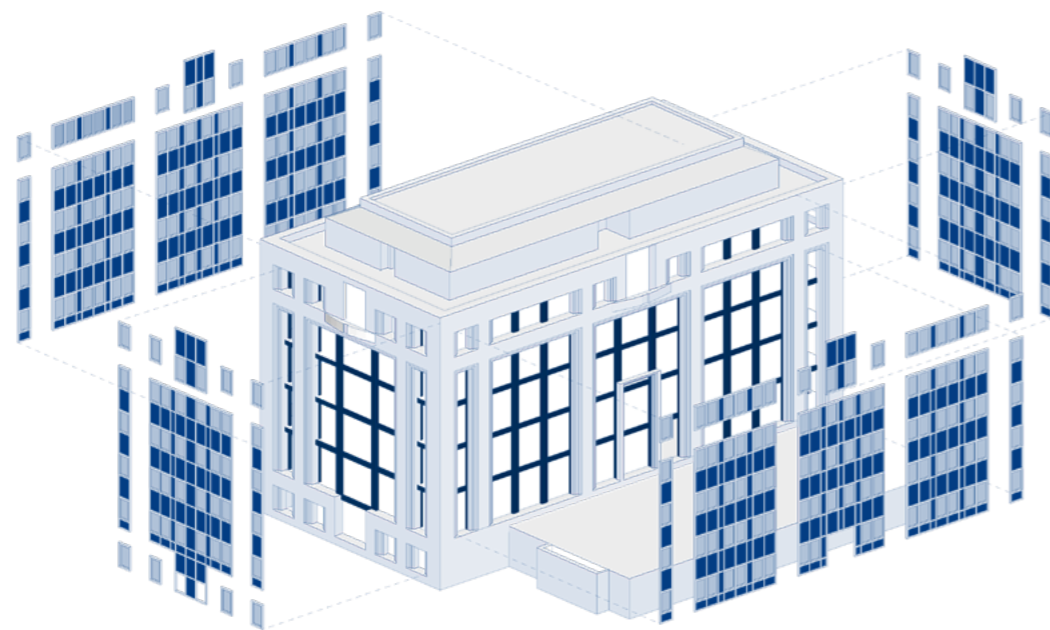


Figure 40: Exploded axonometric of the façade
Source: Author

The analysis of the building focuses on understanding the existing structure and façade system as the starting point for the transformation. The building is organized around a reinforced concrete central core with beams and slabs that define a regular structural grid. This structural system allows a flexible subdivision of the floorplates and supports the possibility of introducing new residential layouts within the existing framework.



Figure 41: Structural axonometric
Source: Author

The façade follows a repetitive rhythm of large glazed openings that reflect the office character of the building. The glass envelope conceals the structural elements and creates a continuous façade expression. Understanding this relationship between structure and façade helps to identify where interventions can take place and how the existing system can support the new residential use.

STRUCTURE AND FACADES

Load bearing central core and beams

Material: Reinforced concrete and masonry

Facades: Glass conceals the beams and slabs, impression of continuity

SWOT

Conclusions from the building analysis

The analysis shows that the building has good potential for transformation. The structure grid, floor depth and daylight conditions make it possible to adapt into housing units. At the same time, the ground floor and basement levels offer opportunities to introduce new programs and shared spaces that could activate the building and its context.

The existing façade and institutional office character present certain challenges, but they also create possibilities to reinterpret the building through new architectural elements. Interventions such as winter gardens can provide residents with an extension of their homes while strengthening the indoor outdoor connection.

S

STRENGTHS

URBAN

Central Kirchberg location
Strong public transport connectivity
Potential to activate mono-functional district

STRUCTURE & LAYOUT

Flexible structural grid
Suitable floor depth for housing
Adaptable interior configuration
Good floor to ceiling heights

DAYLIGHT & FAÇADE

Large windows with strong daylight potential
Continuous façade rhythm

BASEMENT

Potential for adaptive reuse of parking areas

W

WEAKNESSES / CONSTRAINTS

URBAN & ACCESS

Main entrance lacks human scale
Multiple ground levels complicate access

STRUCTURE & CORE

Corner columns reduce flexibility
Deep corridors may create dark areas

DAYLIGHT & FAÇADE

Strong office identity
Uneven daylight distribution at corners

TECHNICAL SYSTEMS

Building systems designed for office use
Roof technical floor inaccessible

O

OPPORTUNITIES

GROUND FLOOR & ACCESS

Reconfigure entrances and circulation
Activate semi-basement and park connection
Introduce new public interfaces

RESIDENTIAL CONVERSION

Flexible apartment layouts possible
Reinterpret façade for residential identity
Integrate balconies, loggias, and terraces

SHARED SPACES

Transform basement into communal amenities
Introduce bike parking, workshops, storage

ROOF

Potential rooftop social/outdoor spaces
Improved natural ventilation and views

SHARED URBAN LIFE

Introduce residential diversity in Kirchberg
Attract young residents and mixed uses
Support a more active after-hours urban life

T

THREATS / CHALLENGES

URBAN CONTEXT

Predominantly mono-functional office district
Limited residential activity after working hours

Reference projects

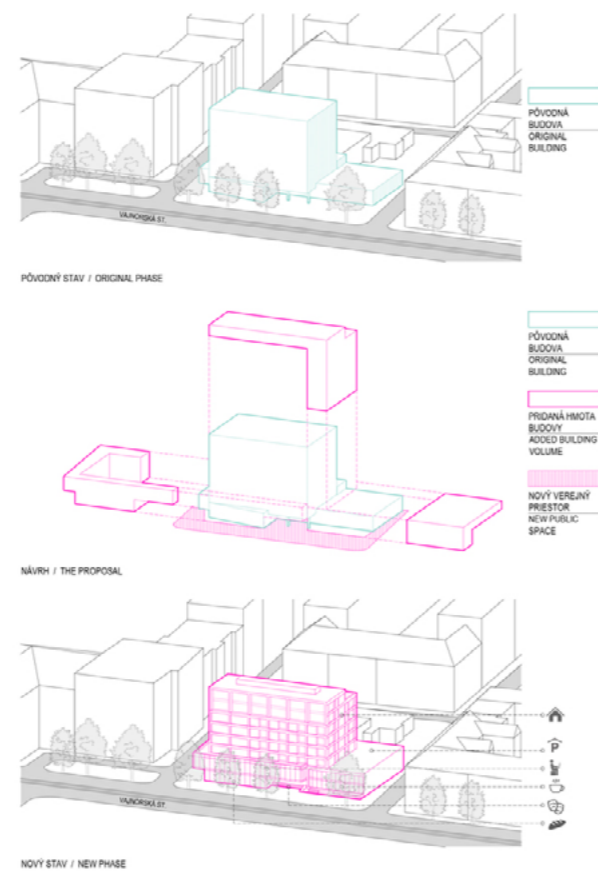
Vajnorská 21 conversion/cakov + partners

Slovakia, 2021
2284sqm



Figure 42: Vajnorská 21
Source: Archdaily; Cakov +Partners, 2021

It represents the conversion of an office building from the 1980s. The project aimed to transform it into a mixed-use building with commercial use on the ground floor and offices on the first floor, while the upper floors were planned for housing.



Reflection: This project help to reflect on the addition as a adaptive reuse strategy helping to activate the groundfloor and allows to bring more activities into the program. It shows also how façade redesign, spatial reconfiguration, and the incorporation of mixed-use functions can transform outdated structures.

ZIM project, Brussels

Belgium, 2023
110000sqm

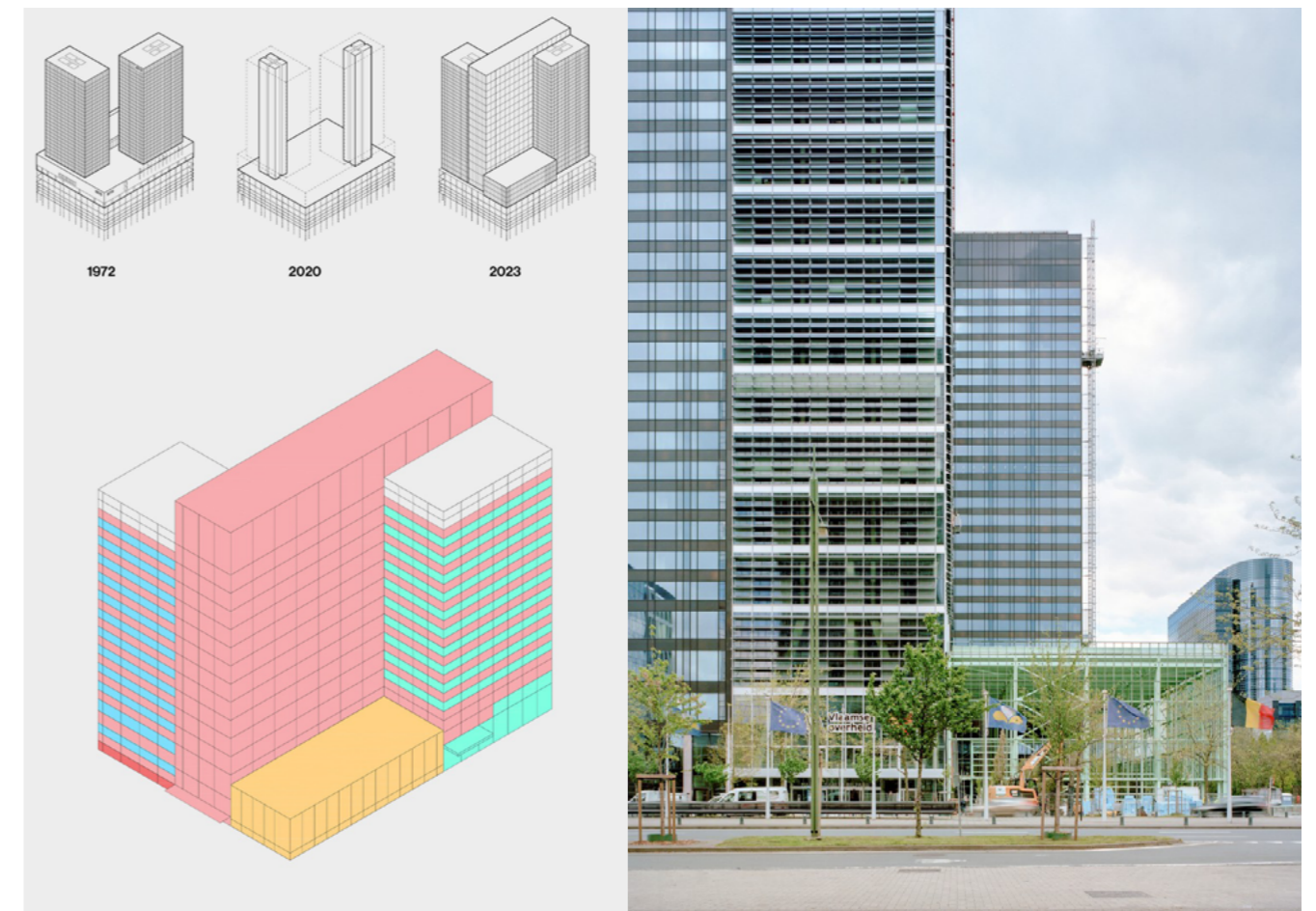


Figure 43: ZIM project
Source: 51N4E, 2023

The project reuses the emblematic WTC I and II towers located in Brussels. It creates a new condition for a hybrid building that combines living and working in innovative ways. This project is an example of how can be introduced large scale urban transformation. The project reuses the existing structure to create a new mixed-use environment through selective demolition and reconfiguration.

Reflection: This project is a example of how adaptive reuse in urban scale. It reflects on how city life can be brought inside existing buildings by introducing shared and public spaces. Also the program is added by layers what allows to think how different programs can interact inside of the building.

Îlot Saint-Germain Building - François Brugel Architectes Associés + h2o architectes

Paris, 2023

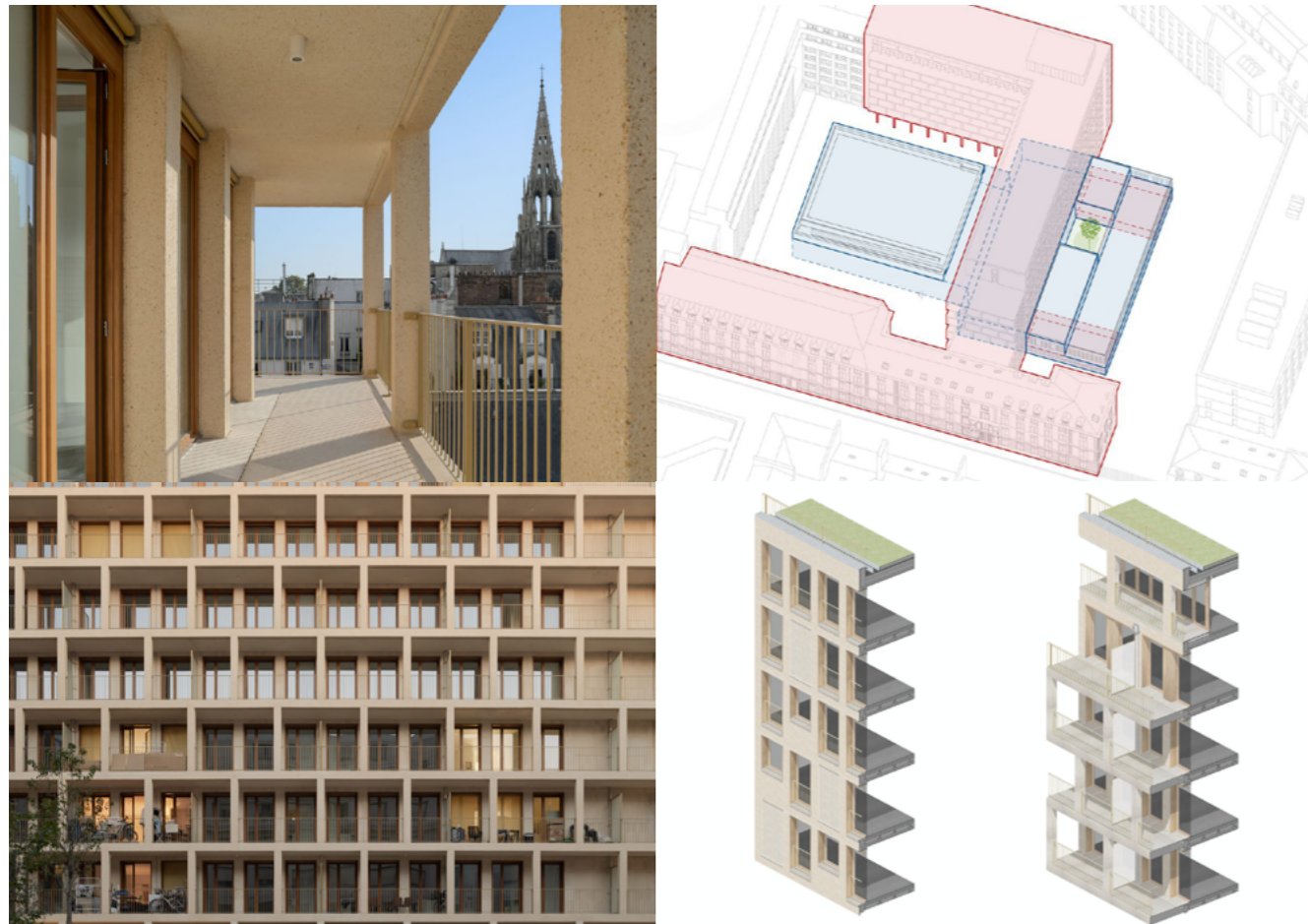


Figure 44: Îlot Saint Germain building
Source: Dezeen; Brugel & H2O architects, 2023

The proposed housing is the result of research and experience that aim to define what good housing should offer. The project transforms former workspaces into 254 social housing units, while also adding a gymnasium and a kindergarten for residents and the wider city. An important aspect of the project was to work with the existing building features, using the qualities of the original structure and making them visible. Each building offers specific layouts, resulting in a variety of housing typologies.

Reflection:

For the façade phase, this project shows how working with the existing structure can allow different housing layouts and typologies. It also highlights how façade elements such as loggias can improve the quality of interior spaces by bringing more light and creating a stronger connection between inside and outside.

Grand Parc Bordeaux - Lacaton & Vassal

France, 2017

68 000m² (with winter garden)

38 400m² existing

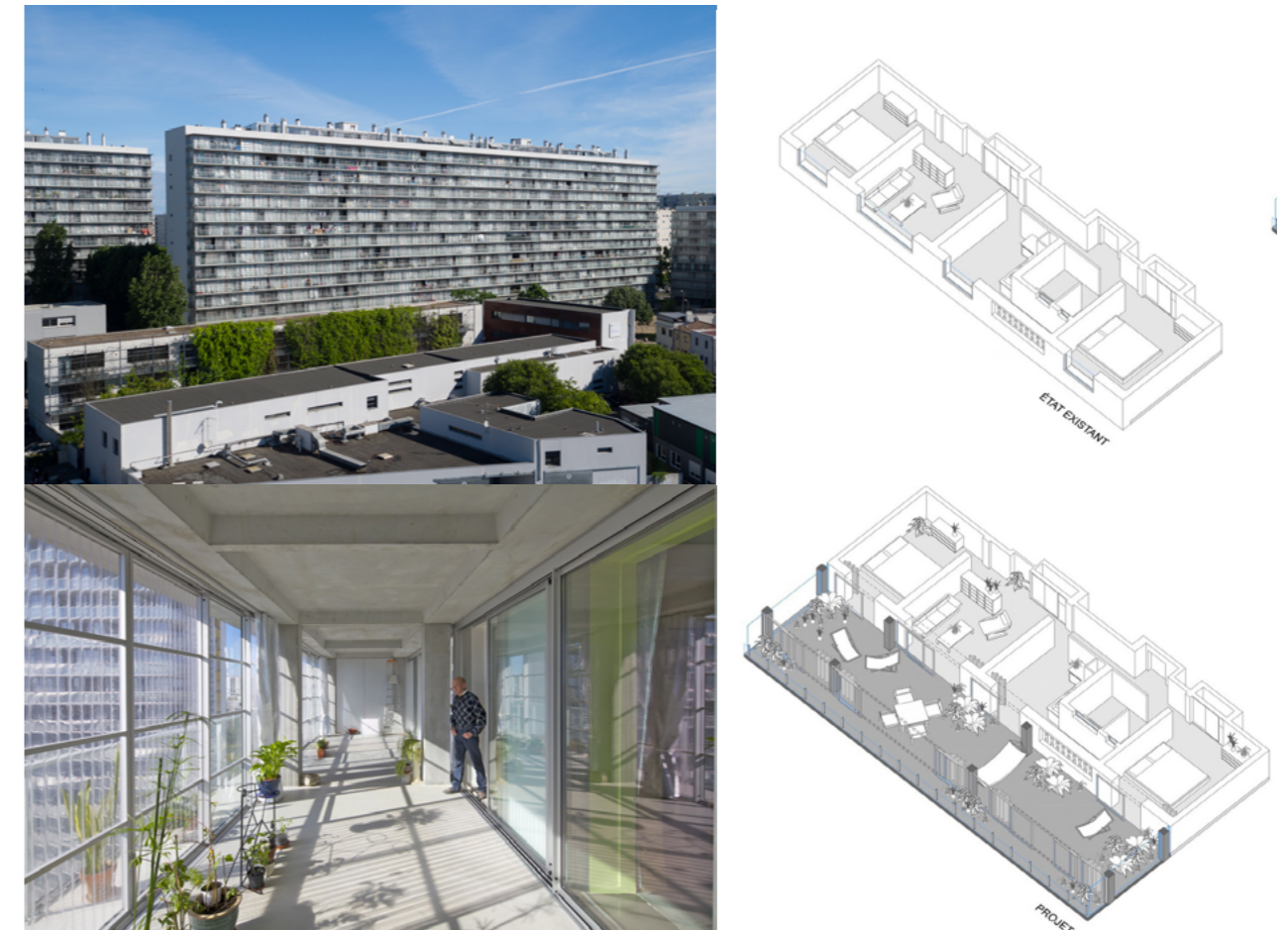


Figure 45: Grand Parc Bordeaux
Source: Lacaton & Vassal, 2017

The project renovates three social housing blocks from the 1960s. Instead of demolishing the existing buildings, the intervention transforms what already exists by adding large balconies and winter gardens to each apartment. The original structure is maintained while a light façade extension increases the living space and improves the environmental conditions of the housing.

Reflection:

The project is an inspiration how extending the façade can improve housing quality without replacing the existing building. The addition of balconies and winter gardens brings more light, air and flexibility to the apartments, creating living conditions that feel closer to a house than to a typical housing block.

Transformation de la Tour Bois le Prêtre- Lacaton & Vassal

Paris, 2011
8 900 sqm existing + 3 560 sqm extension

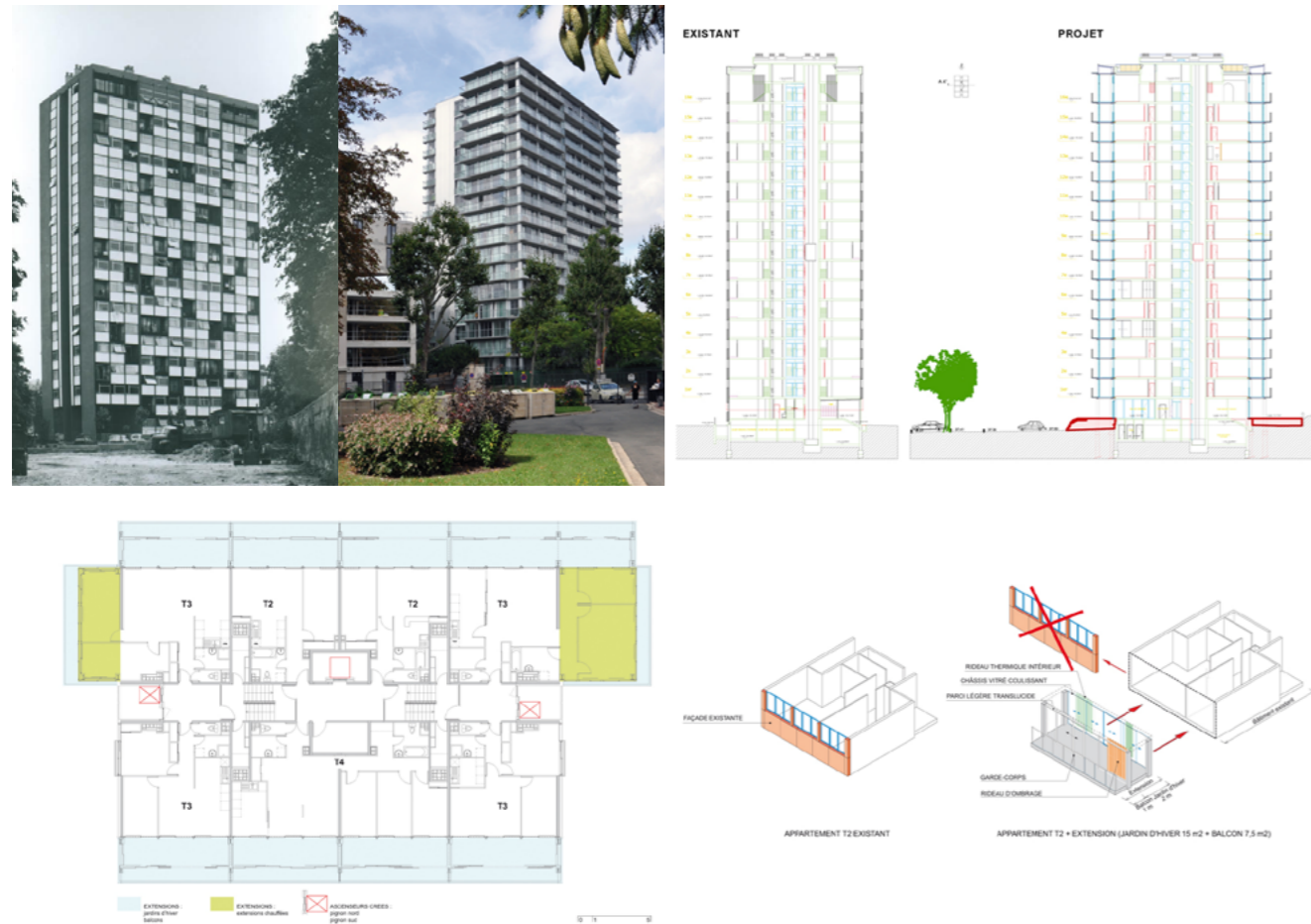


Figure 46: Tour Bois le Prêtre
Source: Lacaton & Vassal, 2011

The project transforms a social housing tower from the 1960s in Paris. Instead of demolishing the building, the intervention keeps the existing structure and introduces a radical transformation by adding winter gardens and large balconies to every apartment. These additions extend the living spaces and open the façade, making the apartments larger and brighter.

Reflection:

This project helps to reflect on how façade additions can transform existing housing. By adding winter gardens and large balconies, the apartments gain more space, light and outdoor connection while keeping the original structure of the building.

Amsterdam Urban Loft - Bureau Fraai & BNLA architecten

Amsterdam, 2018
129 sqm

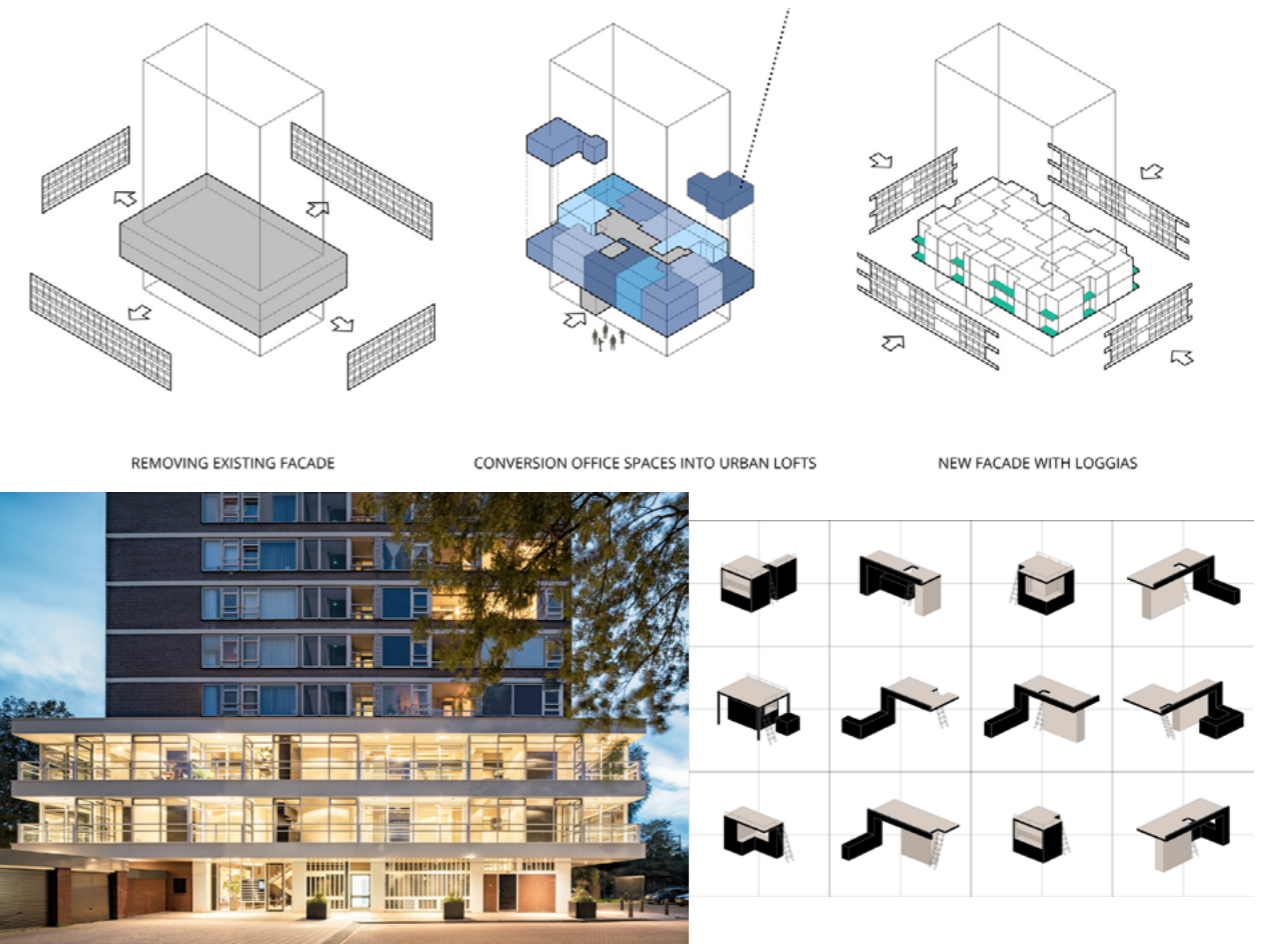


Figure 47: Amsterdam Urban loft
Source: ArchDaily; Moatti-Rivière, 2016

The project involves the transformation of an existing office building into 48 compact housing units for young professionals, integrating the StartSmart Living concept. In addition to the private units, the project introduces shared spaces that support community and social interaction, recognizing these aspects as important elements for everyday living.

Reflection:

This project works as a reference for compact housing units for students and young professionals within an existing office structure. It shows how small apartments can still provide good living conditions, and how the height of the existing floors allows the introduction of a second small level or mezzanine inside the units.

Concept development

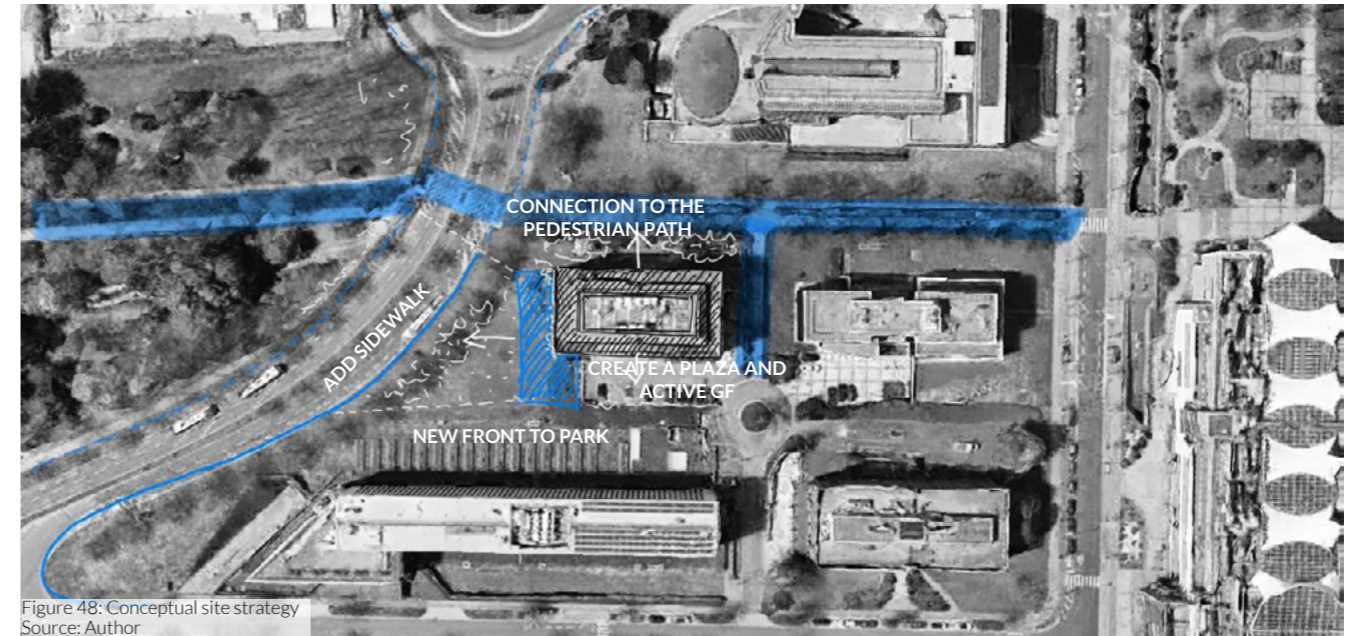


Figure 48: Conceptual site strategy
Source: Author

The project involves the transformation of an existing office building into 40 compact housing units. In addition, the project includes shared spaces that foster community interaction and social engagement, recognizing these aspects as important elements of a high quality of life.

The development of the project concept is based on improving the relationship between the building and its immediate surroundings. The proposal aims to activate the ground floor by introducing new services and activities that can benefit residents and visitors.

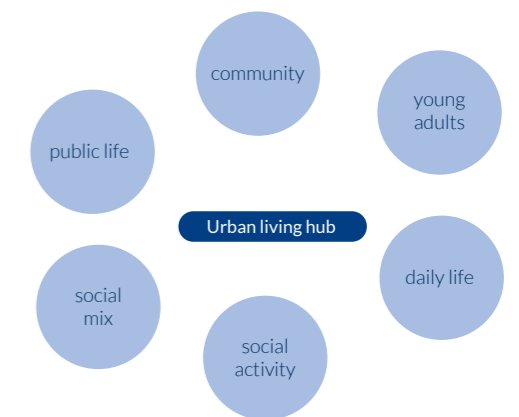


Figure 49: Concept diagram
Source: Author

Strategies

01 *Urban activation*

Access to urban connection

02 *Ground floor identity*

Creating a ground floor that encourages public life based on human scale

03 *Façade reinterpretation*

Create residential character and intermediate spaces

04 *Basement transformation*

Reusing parking levels as shared amenities and social amenities

05 *Indoor-outdoor connection*

Connecting the interior with terraces and the garden to extend everyday life

03 | Design framework

- Concept development
- Strategies
- User
- Program

User

Early stages of adulthood

According to the city data, the population in Kirchberg (10,982 people) is mainly composed of an international community (74.5%), with around 31% between the ages of 20–39 years old (Ville de Luxembourg, 2025). Based on this context, the project identifies a strong opportunity to focus on a young population such as students, young professionals, and start-up families who move to the city or want to live close to their workplace or university, while also encouraging a social mix.

The main users are young adults in the early stages of life, who may look for temporary housing. The project is therefore designed as a short- to mid-term housing model, responding to different stages of independent living. This can range from a minimum stay of around two years for master students to around five years for couples or young families before they decide to move to a larger apartment or buy their own home.



Students and young professionals



Couples



Start-up family

AGE	20-27 years	27-32 years	32-35 years
Characteristics	High social interaction Short term residents (students)	Need for flexibility Higher level of privacy Possibility of home office	Starting a new stage of life before moving to a larger home
Needs	Work/study space Flexible living space Spaces for social interaction	More defined living spaces Fully equipped kitchen Possibility for home office Parking / storage	Clearly defined domestic spaces Separate bedrooms Parking / storage Children's activities spaces
Length of stay	3 months-3 years	2-3 years	2-3 years
Behavior			
Privacy	● ● ○ ○ ○	● ● ● ○ ○	● ● ● ● ●
Shared spaces	● ● ● ● ●	● ○ ○ ○ ○	● ○ ○ ○ ○
Facilities	● ● ● ● ●	● ● ● ● ○	● ● ● ○ ○

Figure 50: User description
Source: Author

Program

The program is divided into three categories with the aim of connecting the building with the city and also between the residents.

- The first category is the public sphere, which includes the gym, restaurant, childcare and coworking spaces that can be used both by the citizens and the building residents.
- The second category is the semi-private sphere, accessible only for residents. These spaces aim to support social interaction and create opportunities to strengthen the community inside the building.
- The last category is the private sphere, composed of the housing units and storage spaces that residents can access depending on the housing typology.

Overall, the program aims to create a living community inside the building while also bringing activity and life to the neighbourhood through the transformation of the existing office building.

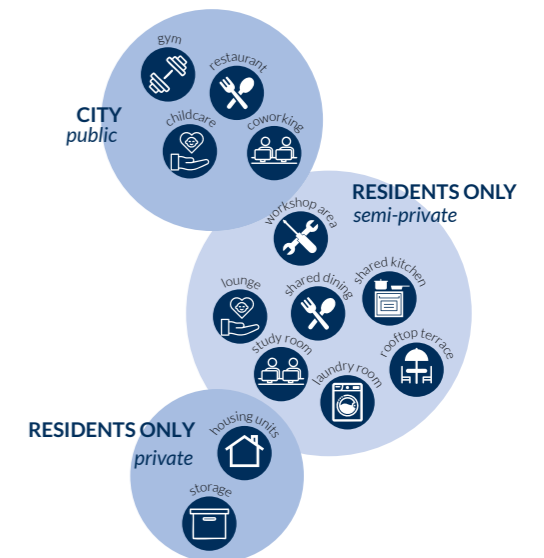


Figure 51: Public- Semi private - Private program diagram
Source: Author

Shared spaces by user group

NEEDS/SPACES	Students	Young professionals	Couples	Start-up family	
social	Shared kitchen	X			
	Shared dining	X			
	Lounge	X	X	X	X
work/study	Coworking	X	X	X	X
	Study rooms	X	X	X	X
services	Laundry room	X	X	X	X
	Storage	X	X	X	X
facilities	Gym	X	X	X	X
	Game room	X	X	X	X
	Workshop area	X	X	X	X
	Rooftop terrace	X	X	X	X
	Childcare				X

Figure 52: Shared spaces by user group
Source: Author

04 | Design project

- Volume
- Site plan
- Groundfloor
- Typical floorplan
- Housing typologies
- Level -1
- Level -2 & -3
- Terrace level
- Façades
- Sections
- Reused materials
- Discussion & conclusion

Volume

Conceptual

As part of the transformation process, and while respecting the existing building, the project introduces two major interventions to support the adaptive reuse strategy. The first intervention focuses on the façade transformation through the addition of winter gardens, creating intermediate spaces that extend the housing units and improve the indoor-outdoor relationship. The second intervention reconsiders the rooftop terrace as a shared space for residents, incorporating winter gardens and accessible indoor and outdoor areas that encourage social interaction and collective use. In addition, a smaller intervention is introduced to improve the connection between the ground floor and the park level below. This includes new circulation elements and lifts that strengthen accessibility and create a more direct relationship between the building and the urban context.

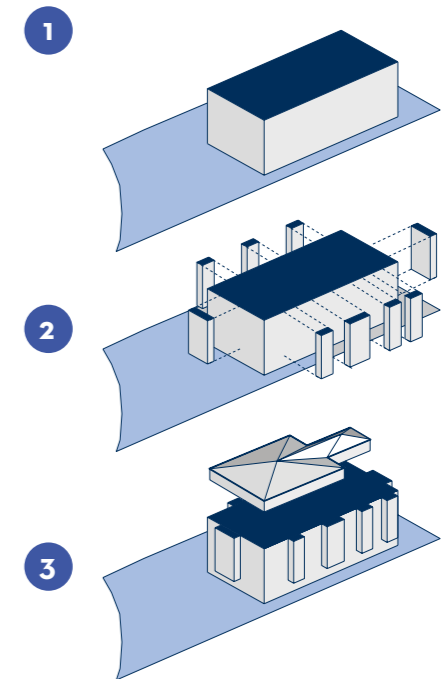


Figure 53: Volume diagram
Source: Author

Program

Layering

The program reorganizes the existing building to support its transformation into housing.

Floors +1 to +4 are dedicated to residential units, creating the main living spaces of the project. The ground floor is activated with commercial and social activities that connect the building with Jean Monnet Street.

At the same time, level -1 introduces additional public-oriented functions facing the park, creating a relationship between the building and the green space. One of the basement levels is transformed into shared services for residents, including repair workshop, storage and laundry. Only the lowest basement level (-3) remains dedicated to parking.

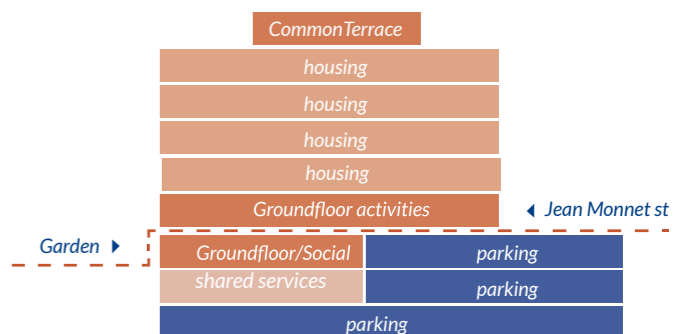
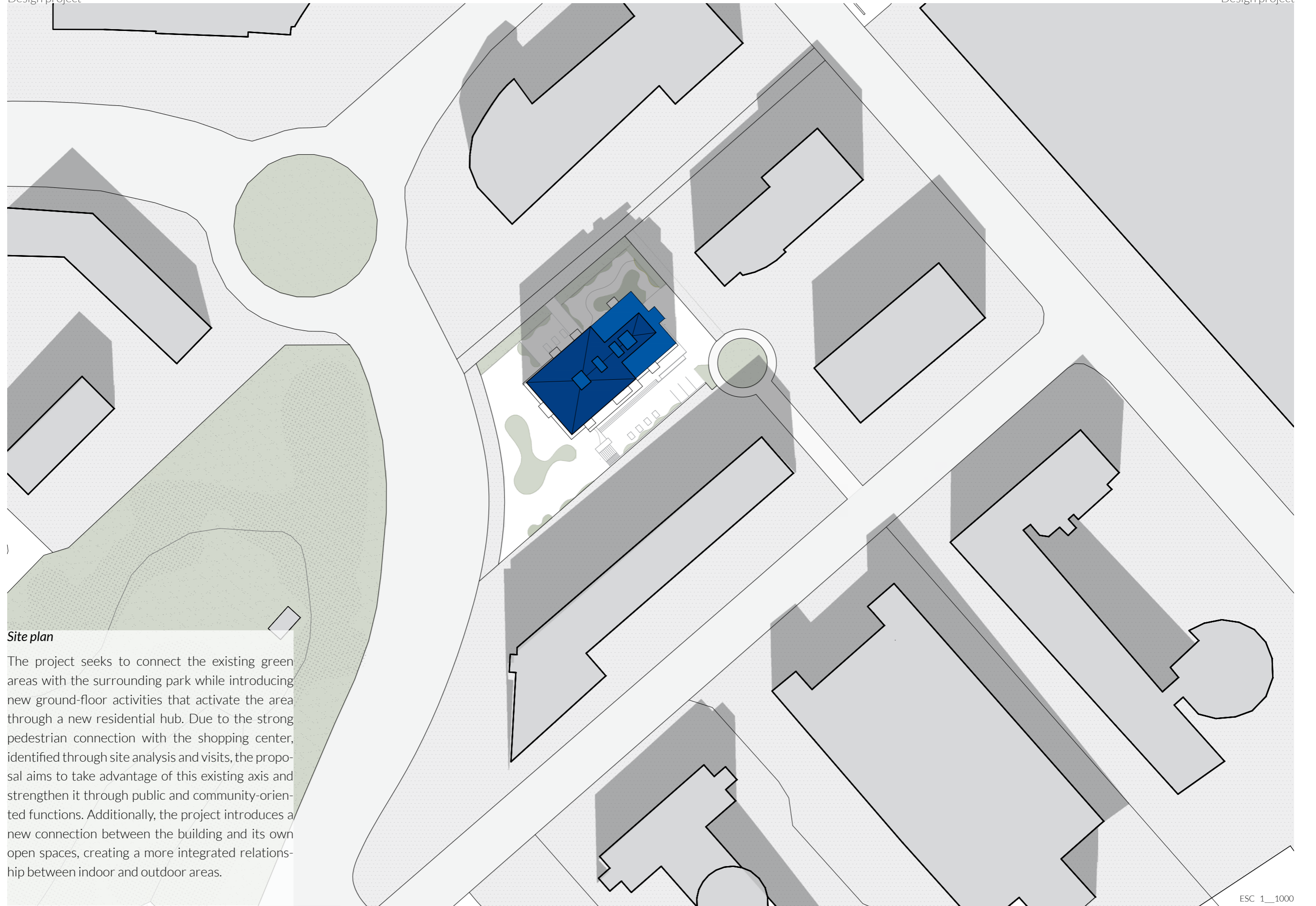
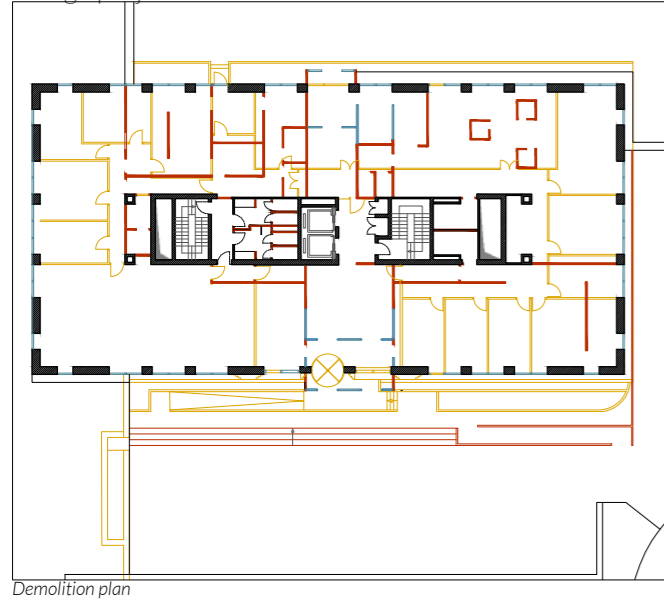


Figure 54: New program
Source: Author



Site plan

The project seeks to connect the existing green areas with the surrounding park while introducing new ground-floor activities that activate the area through a new residential hub. Due to the strong pedestrian connection with the shopping center, identified through site analysis and visits, the proposal aims to take advantage of this existing axis and strengthen it through public and community-oriented functions. Additionally, the project introduces a new connection between the building and its own open spaces, creating a more integrated relationship between indoor and outdoor areas.

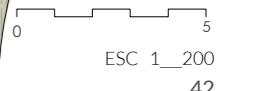
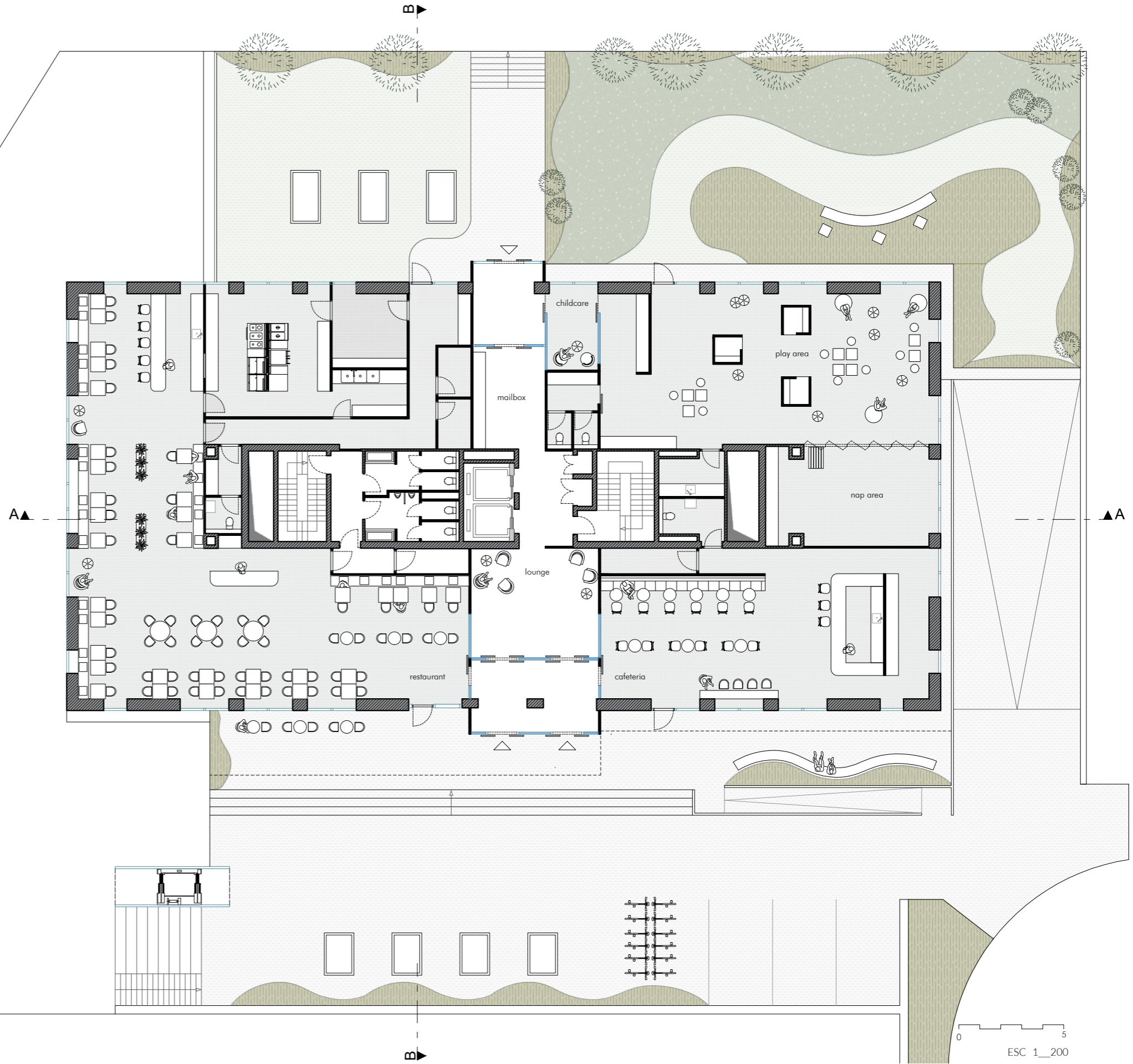


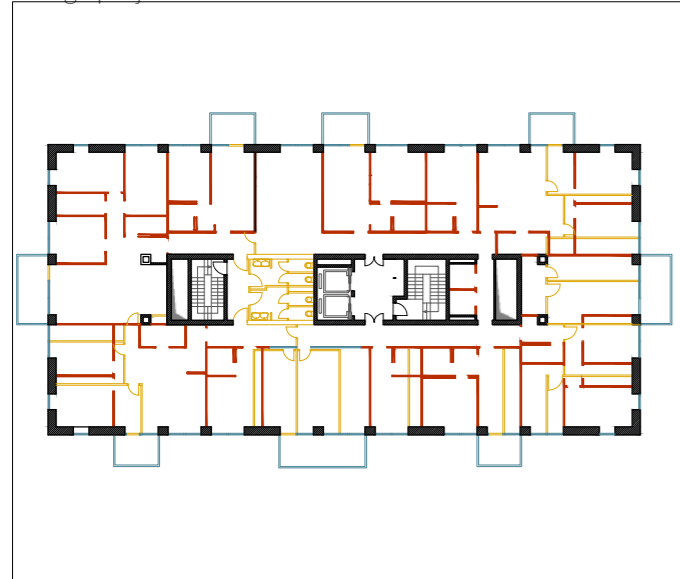
Demolition plan

Groundfloor

The new ground-floor frontage seeks to bring life to the building and extend activity beyond working hours, while also creating a more vibrant atmosphere during the day. Based on the current needs identified through the site analysis, the proposal introduces a restaurant and cafeteria that can support both the office users and the new residential community. In addition, a childcare space is incorporated primarily for the residents of the building and their children.

These functions are designed to maintain a direct relationship with the exterior spaces according to their specific requirements. For example, the restaurant and cafeteria extend towards outdoor seating areas with benches and tables, encouraging social interaction and public life. The childcare space, on the other hand, includes its own private outdoor area that is safe, controlled, and protected from public access, ensuring a secure environment for children.





Demolition plan

Typical floor plan

The new housing design seeks to create a social mix based on both short- and long-term living. According to the program analysis, the typical floor plan combines different typologies, including 3 student lofts, 3 studio apartments for young professionals, 2 two-bedroom apartments, and 2 three-bedroom apartments. The intention is to bring different types of residents into the same building and create a more mixed residential community.

One of the main concerns from the beginning of the project was how to introduce community and social spaces into the floor plans, while also bringing more light into the corridors. This led to the idea of integrating shared spaces such as a common kitchen and study/work area that could create connections between residents and encourage everyday interaction. Instead of having only circulation spaces, the proposal looks to bring opportunities for socialization throughout all the levels and buildings.

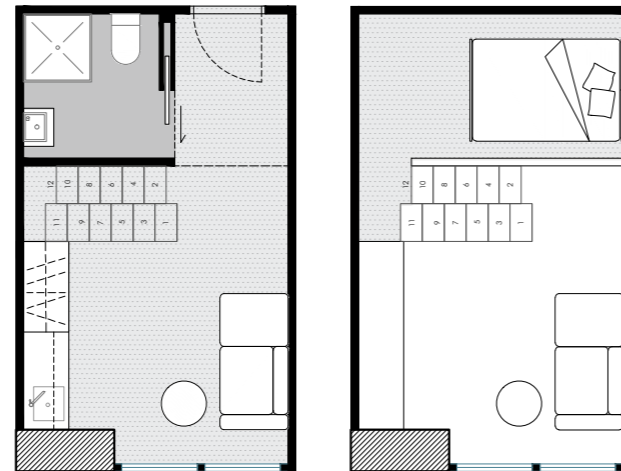
One of the main additions to the project are the winter gardens, which allow each unit to have its own covered outdoor space. These spaces create the opportunity to use the exterior during all seasons, responding to both the residents' needs and Luxembourg's weather conditions. At the same time, the winter gardens help transform the façade and create a stronger relationship between the indoor and outdoor spaces.



Housing typologies

Student loft apartment 21sqm

ESC 1__100



The loft apartment for short-term student residence is designed as a small and compact unit mainly intended for university students. The layout allows basic everyday living while still keeping a strong connection with the shared common spaces in the building. The idea behind this typology is to respond to young students who are moving out from their parents' homes for the first time and need to maximize the use of space while still having the essential functions for daily life.

The apartment integrates storage within the stairs, a small kitchenette, and a flexible social/eating area where furniture plays an important role in organizing the interior space. Since the unit is smaller than a typical studio apartment, residents also have access to the shared common kitchen and social area within the building, allowing the private unit to remain compact while still supporting community living.

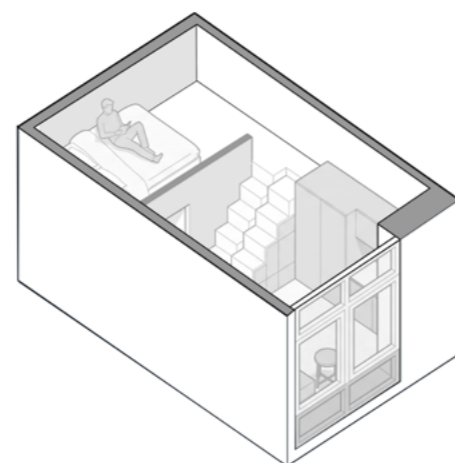
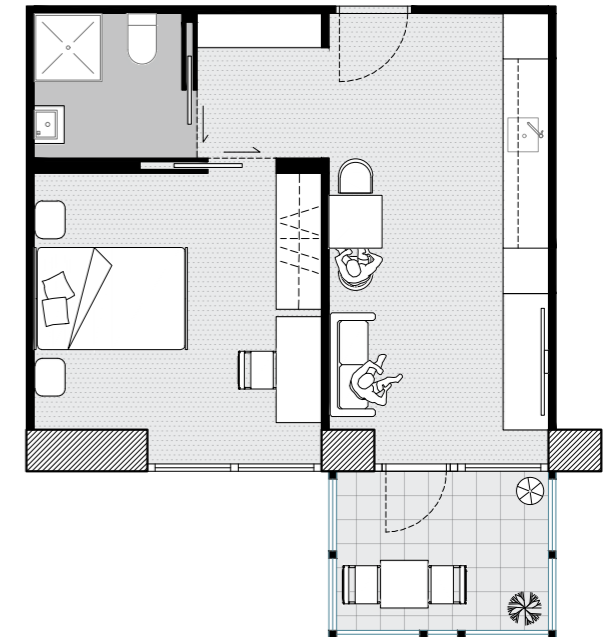


Figure 55: Loft apartment axonometric
Source: Author

Studio Apartment - Young Professionals 39-41sqm

ESC 1__100



This typology is mainly designed for young professionals while still keeping the idea of short-term residence. Compared to the student loft, this unit offers a bit more privacy by separating the living area from the bedroom space, creating a more comfortable layout for everyday living. The apartment also incorporates a winter garden that strengthens the indoor-outdoor connection while allowing views and an additional flexible living space throughout the year.

The typology is designed mainly for one person, but it can also work for a couple who prefer to start with a smaller and more affordable space. The kitchen and social area inside the apartment remain compact, following the idea that residents can also use the shared common spaces in the building for visits, social gatherings, or shared working/study activities when needed.

The intention of this unit is to balance privacy with community living, allowing residents to have their own independent apartment while still being connected to the collective spaces of the building.

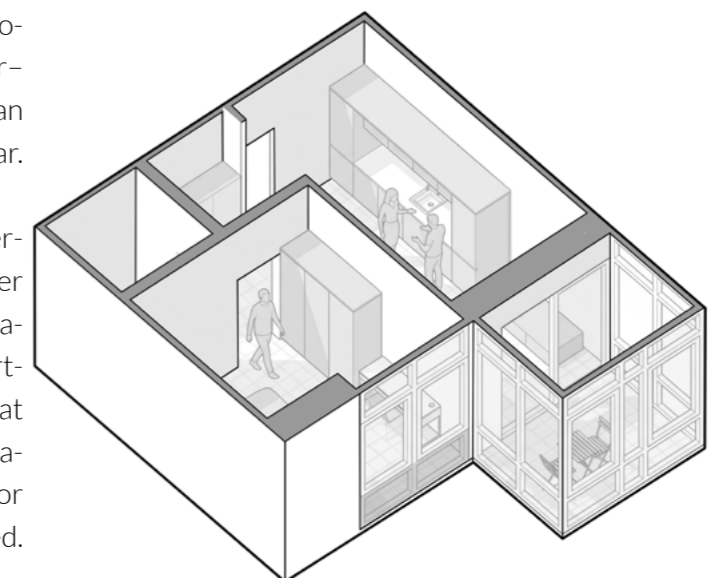
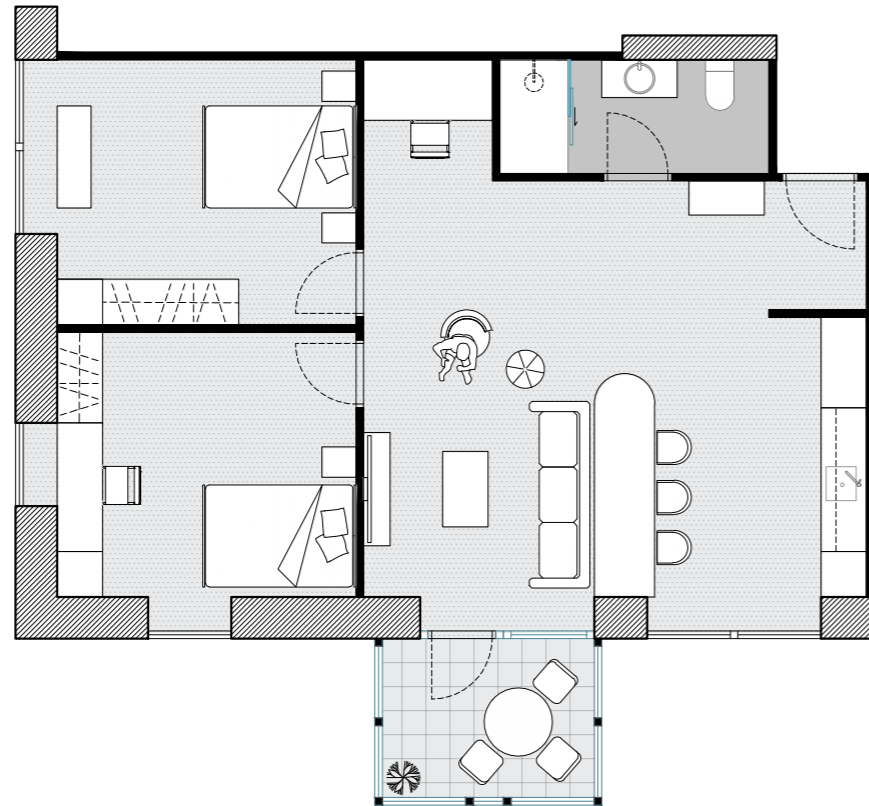


Figure 56: Studio apartment axonometric
Source: Author

Two bedroom apartment

74sqm

ESC 1_100



This typology is suitable for couples or small households. The configuration allows a more domestic atmosphere and a more comfortable layout. The idea behind this typology is to respond to people who are moving into a second stage of independent living and require more stability and privacy compared to smaller units.

The apartment can share the social and living spaces while still having independent bedrooms. This flexibility allows different ways of living and adapting the apartment according to the residents' needs.

At the same time, the unit keeps a connection with the shared spaces of the building, while offering a more private and domestic environment inside the apartment.

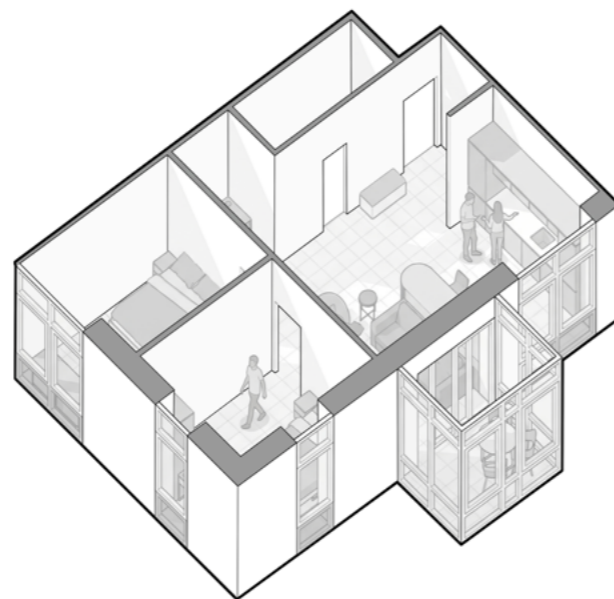
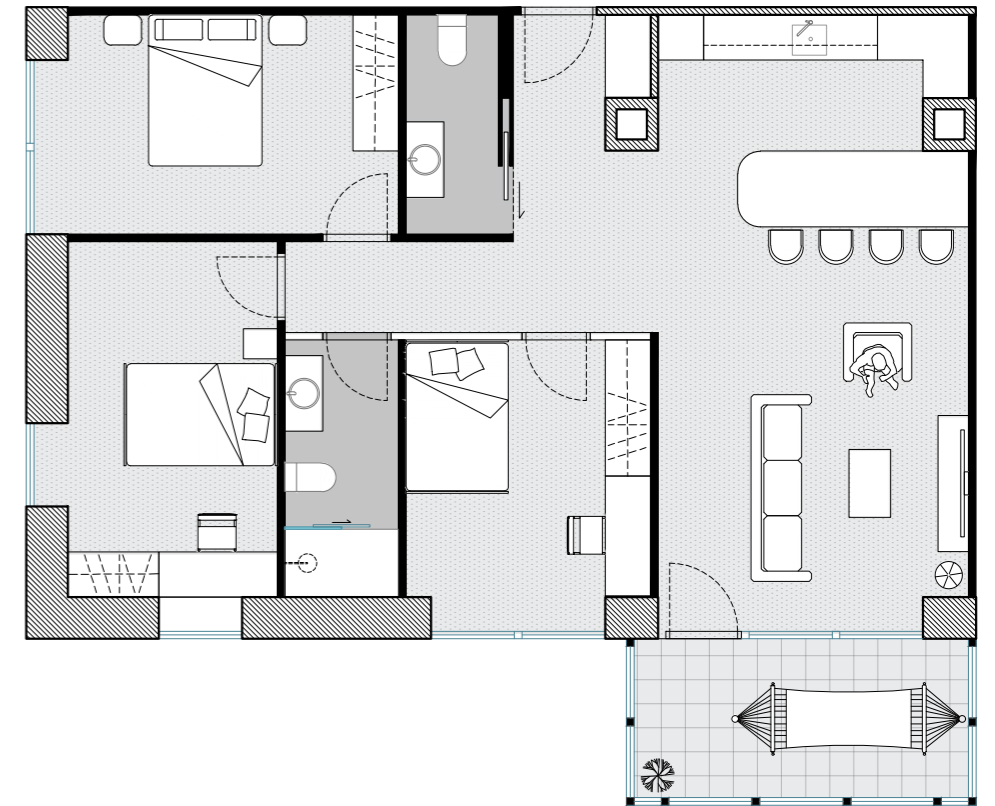


Figure 57: Two-bedroom apartment axonometric
Source: Author

Three bedroom apartment

90sqm

ESC 1_100



This typology is designed mainly for start-up families, but like the previous one, it can also work for shared living. The idea is to keep the concept of mid-term temporary housing while responding to the needs of a small family that requires more bedrooms and a larger social space. Based on a capacity of minimum 3 people and up to 5 residents, the apartment includes 1 and 1/2 bathrooms and a small winter garden terrace connected to the living room, maintaining the idea of the indoor-outdoor connection throughout the project.

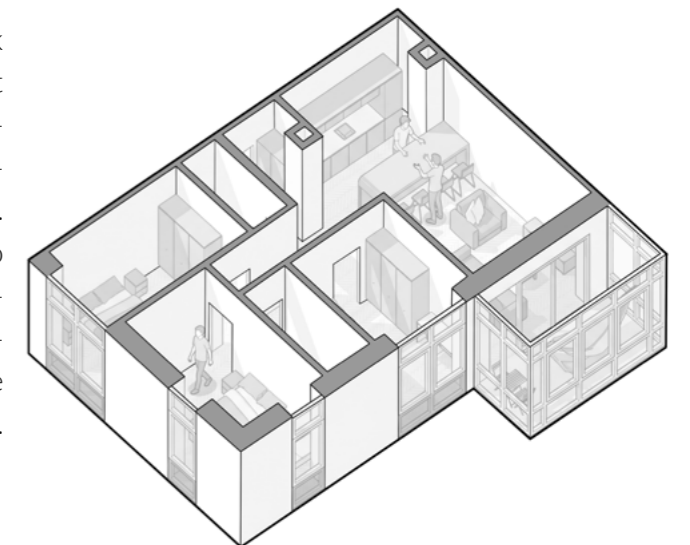
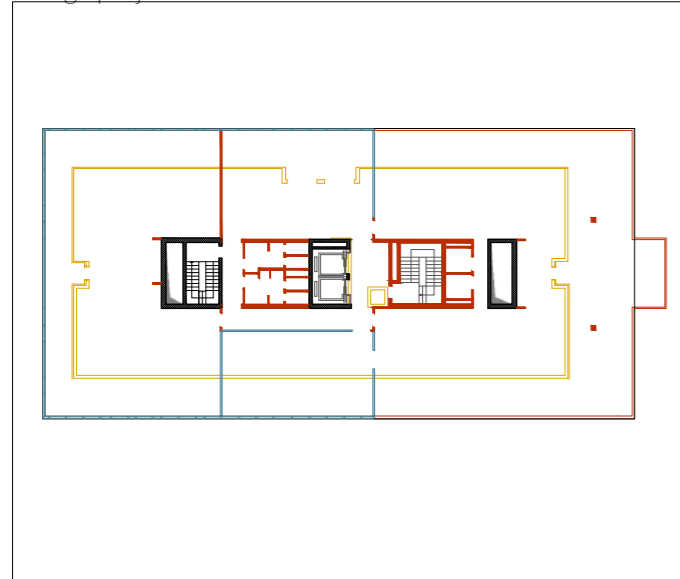
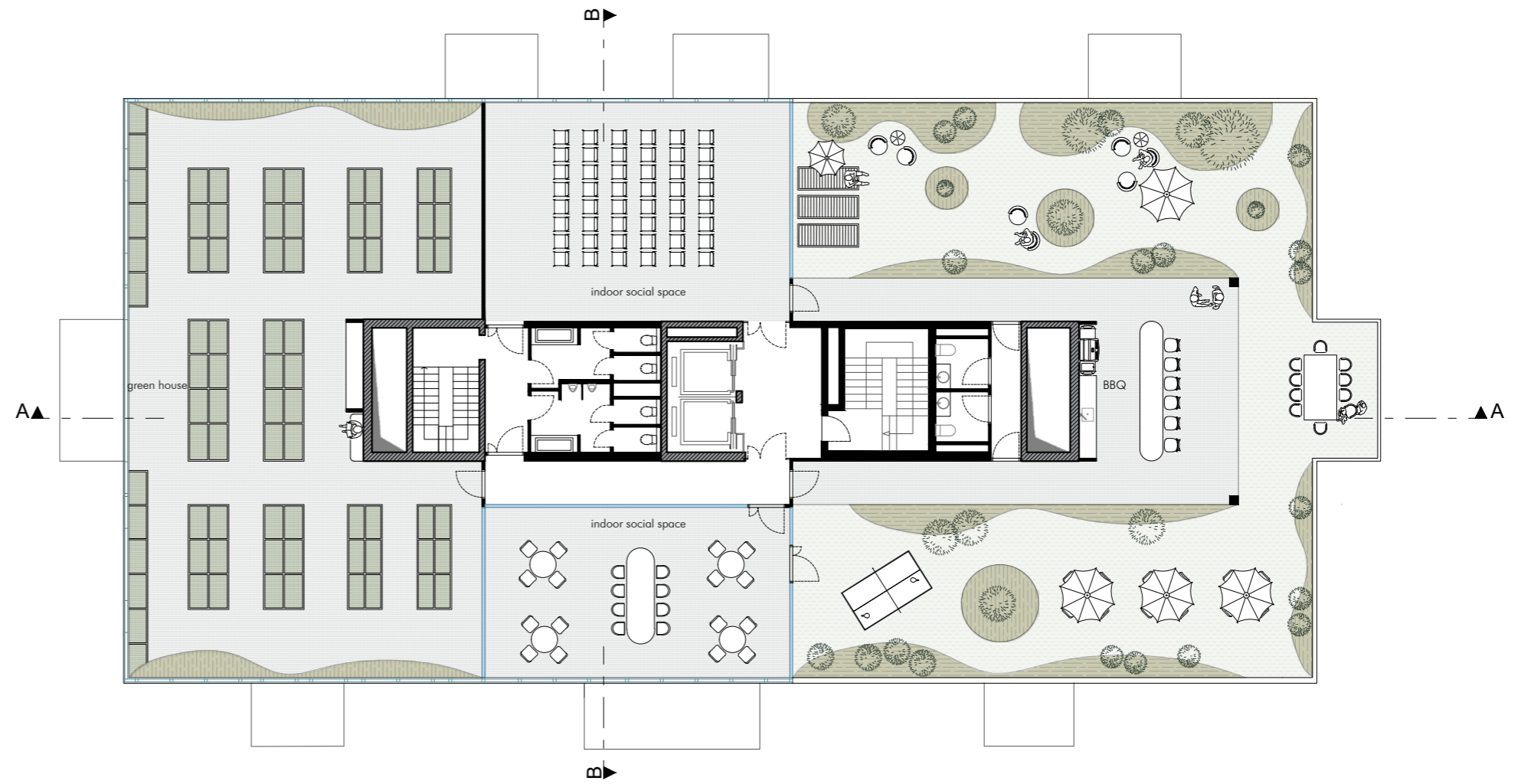


Figure 58: Three-bedroom apartment axonometric
Source: Author



Demolition plan



Terrace

The new ground-floor frontage seeks to bring life to the building and extend activity beyond working hours, while also creating a more vibrant atmosphere during the day. Based on the current needs identified through the site analysis, the proposal introduces a restaurant and cafeteria that can support both the office users and the new residential community. In addition, a childcare space is incorporated primarily for the residents of the building and their children.

These functions are designed to maintain a direct relationship with the exterior spaces according to their specific requirements. For example, the restaurant and cafeteria extend towards outdoor seating areas with benches and tables, encouraging social interaction and public life. The childcare space, on the other hand, includes its own private outdoor area that is safe, controlled, and protected from public access, ensuring a secure environment for children.

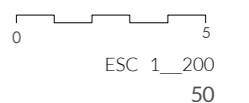




Figure 59: Main access perspective
Source: Author

Main access

The aim was to transform the ground floor to encourage public life through a more human-scale approach. By removing part of the existing parking spaces, a new plaza is created in front of the building that invites people to stay instead of only passing through. The idea is to create a public space “bubble” between the buildings and activate the ground floor with services such as a restaurant, cafeteria, and coworking spaces. These functions can be supported by both residents and office workers during and after working hours.



Figure 60: Park access perspective
Source: Author

Park access

As the building faces the park, the project seeks to activate this façade by inviting people into the spaces through direct access to the garden, restaurant, and cafeteria located on the ground floor. This activation also includes an important landscape intervention that aligns with the urban activation strategy, creating new connections between the building, the park, and the city while reinforcing the importance of public space axes.



Demolition plan

Level -1

The level seeks to support the basement transformation into a community space that strengthens the social hub within the building. Previous working areas are transformed into coworking spaces, while additional functions such as a fitness area and gaming space activate the level throughout the day. Parking spaces have been reduced and replaced with bicycle parking, providing capacity for 70 bicycles and 8 cargo bikes for children, promoting active mobility for both residents and the city while reducing the importance of car-oriented spaces.



0 5
ESC 1_200

Level -2



Level -3

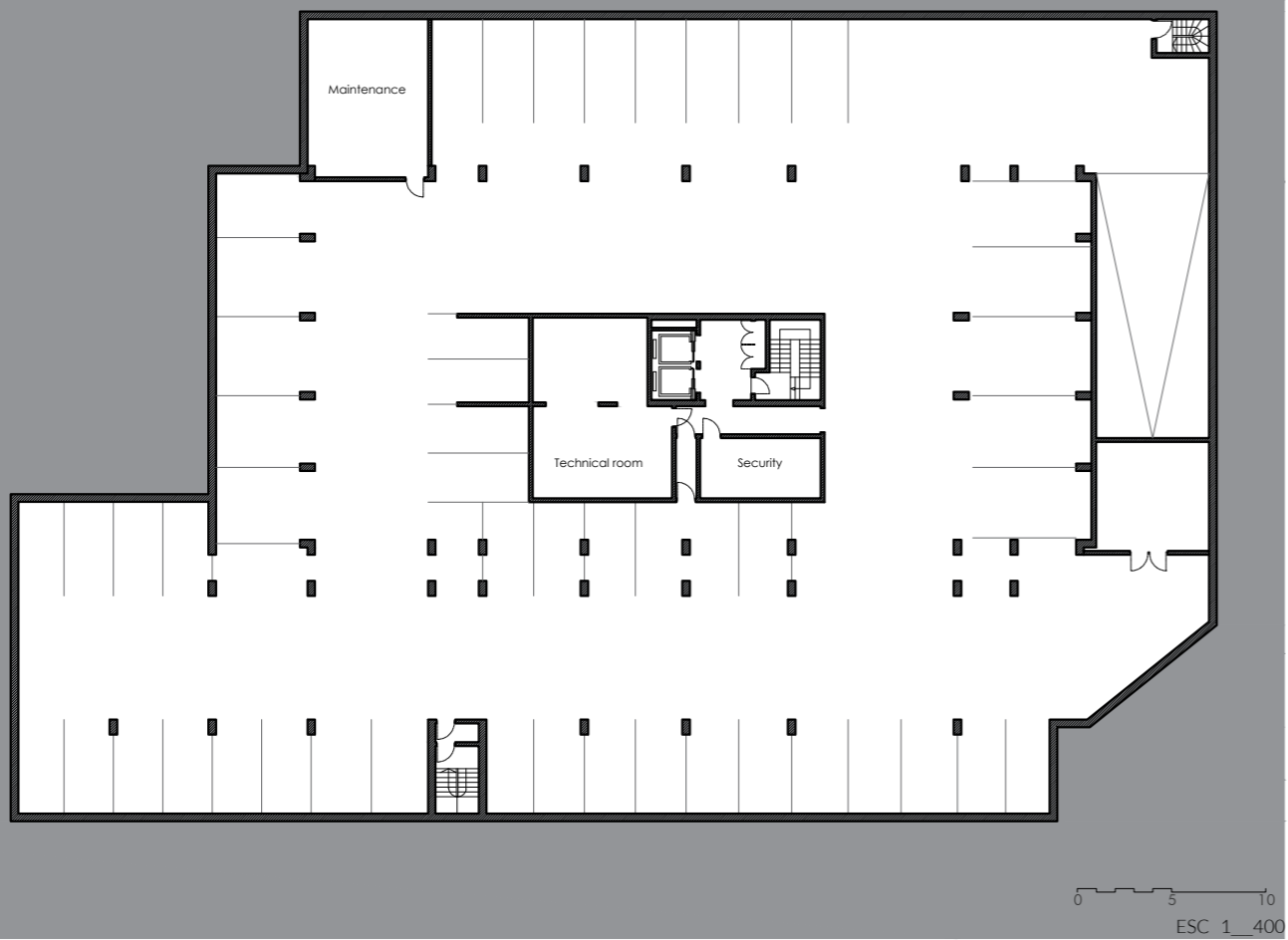
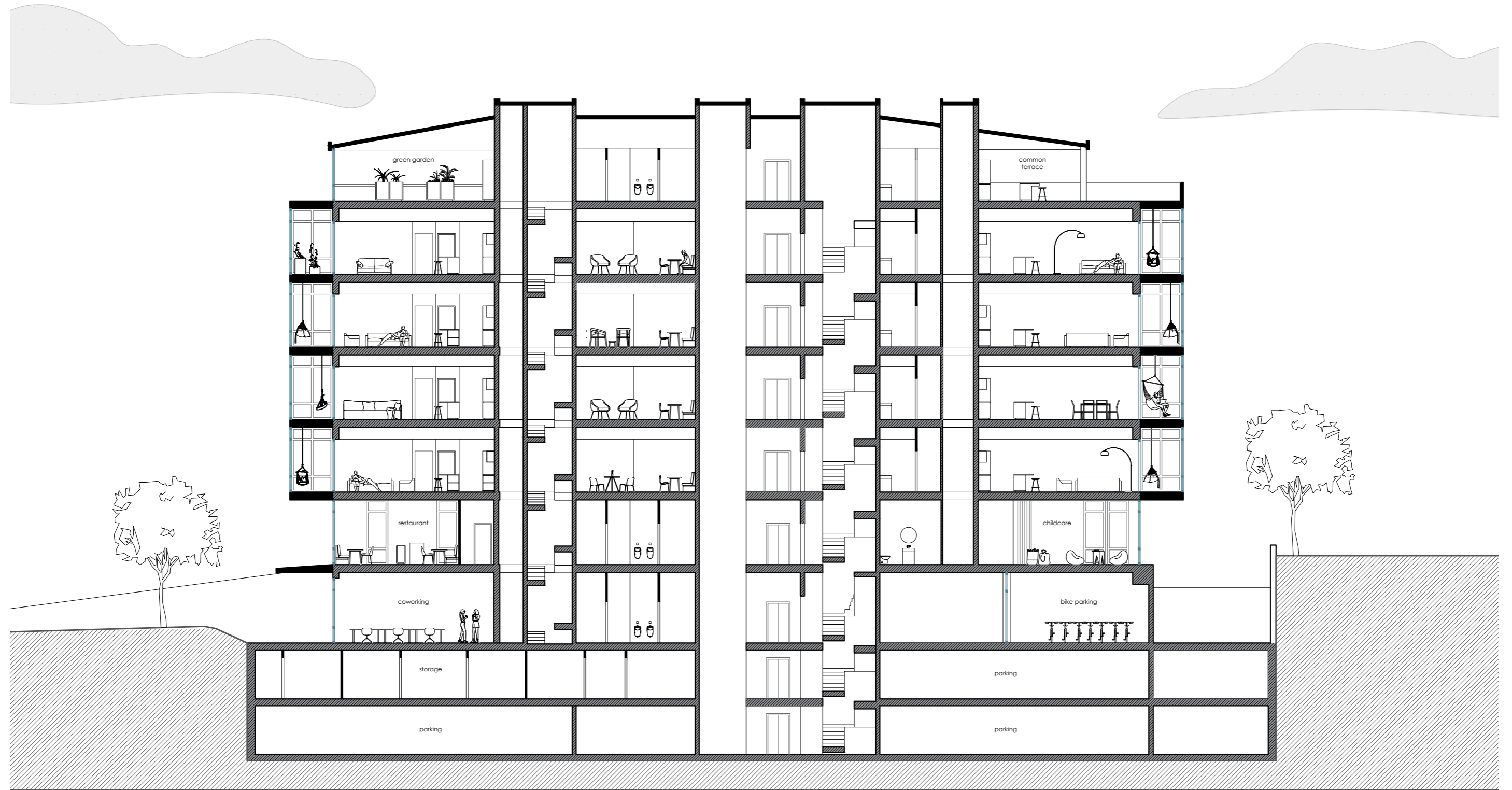


Figure 61: Aerial view
Source: Author

Sections

Section A-A



Section B-B

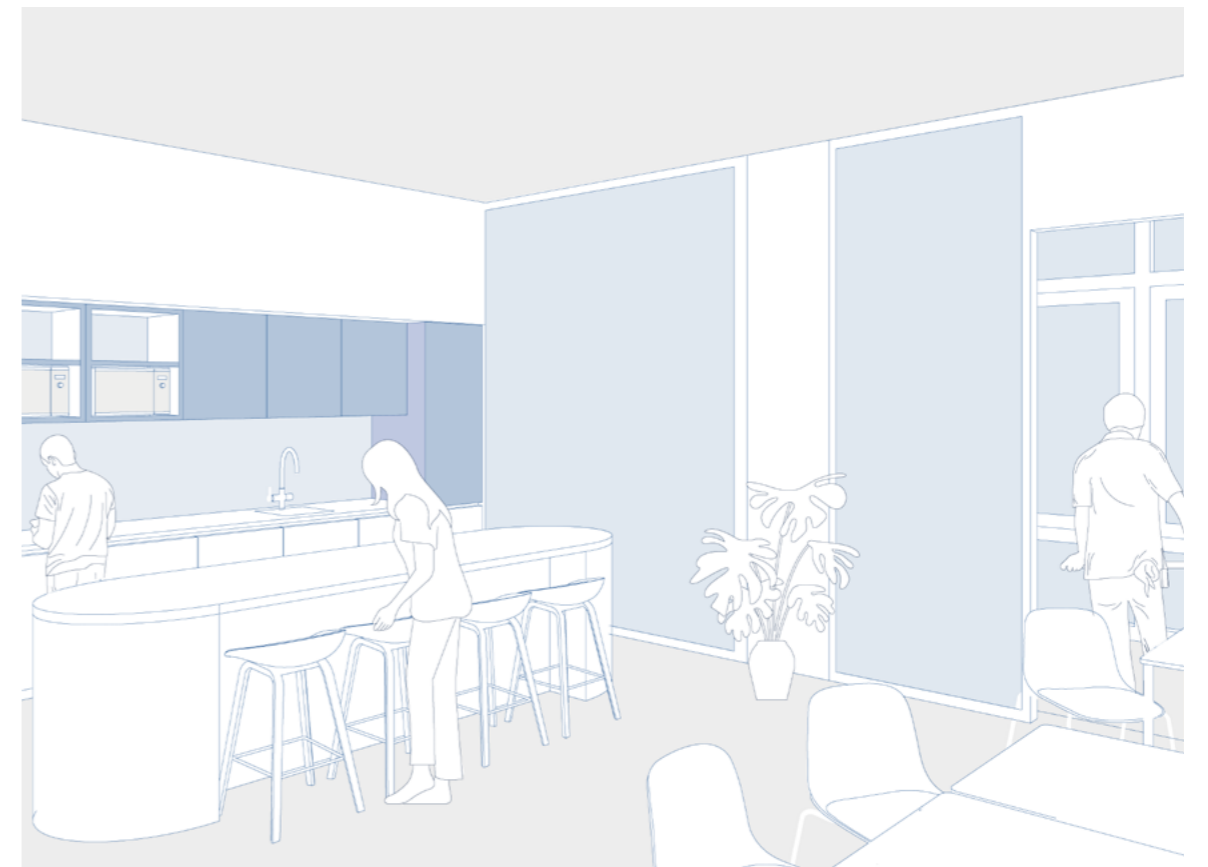
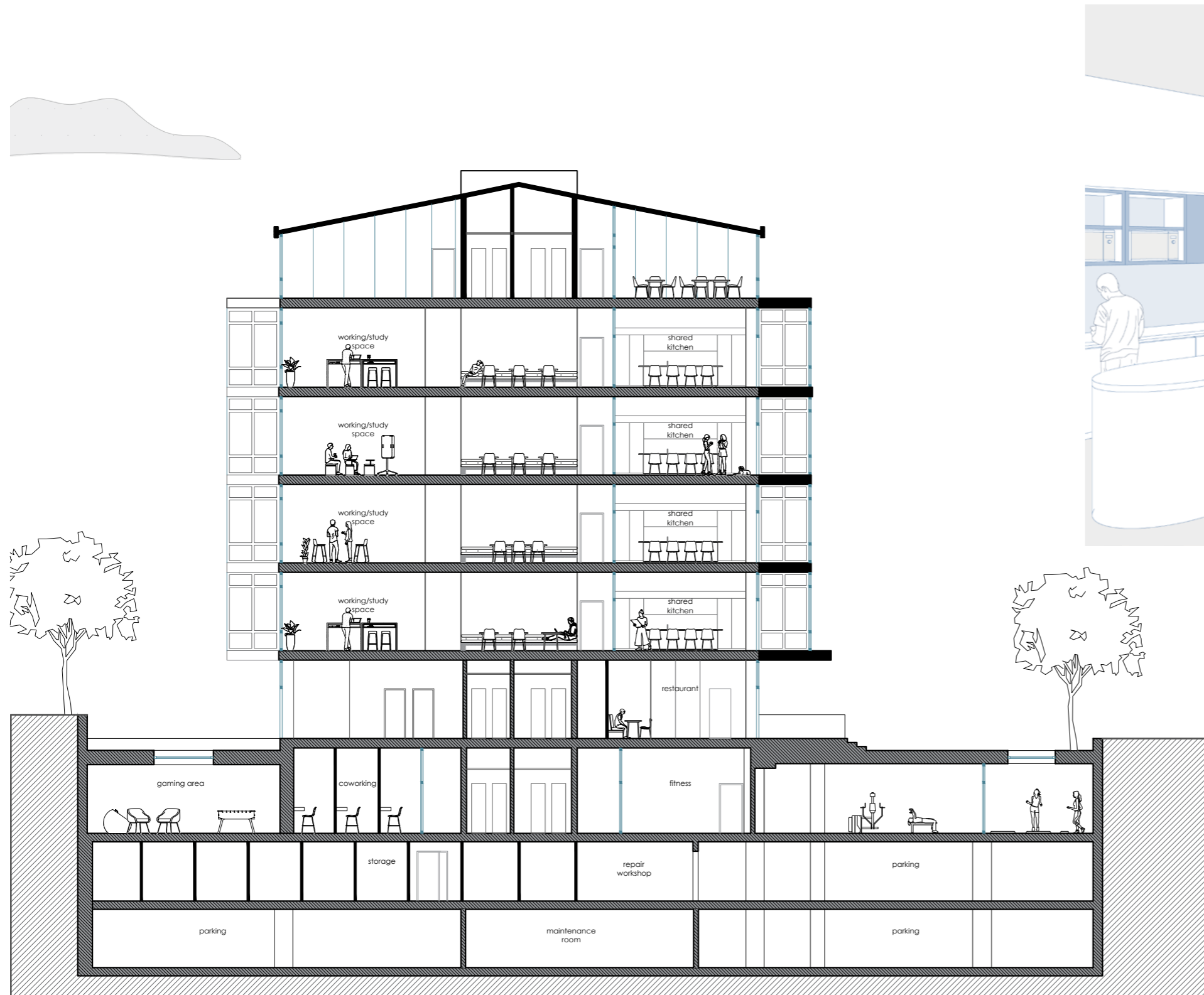


Figure 62: Common kitchen perspective
Source: Author

Common kitchen

The common kitchen becomes an important space for social interaction and community building on each level. It works as a meeting point where residents can gather, cook, and share everyday activities together. At the same time, the space reintroduces existing materials from the building, such as the limestone reused in the table finishes and carpentry elements. This strategy brings back the memory of the former façade while creating a new relationship between the old materials and the new residential use.

Façade transformation

Main façade



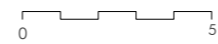
0 5
ESC 1_200
62

Back facade

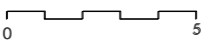
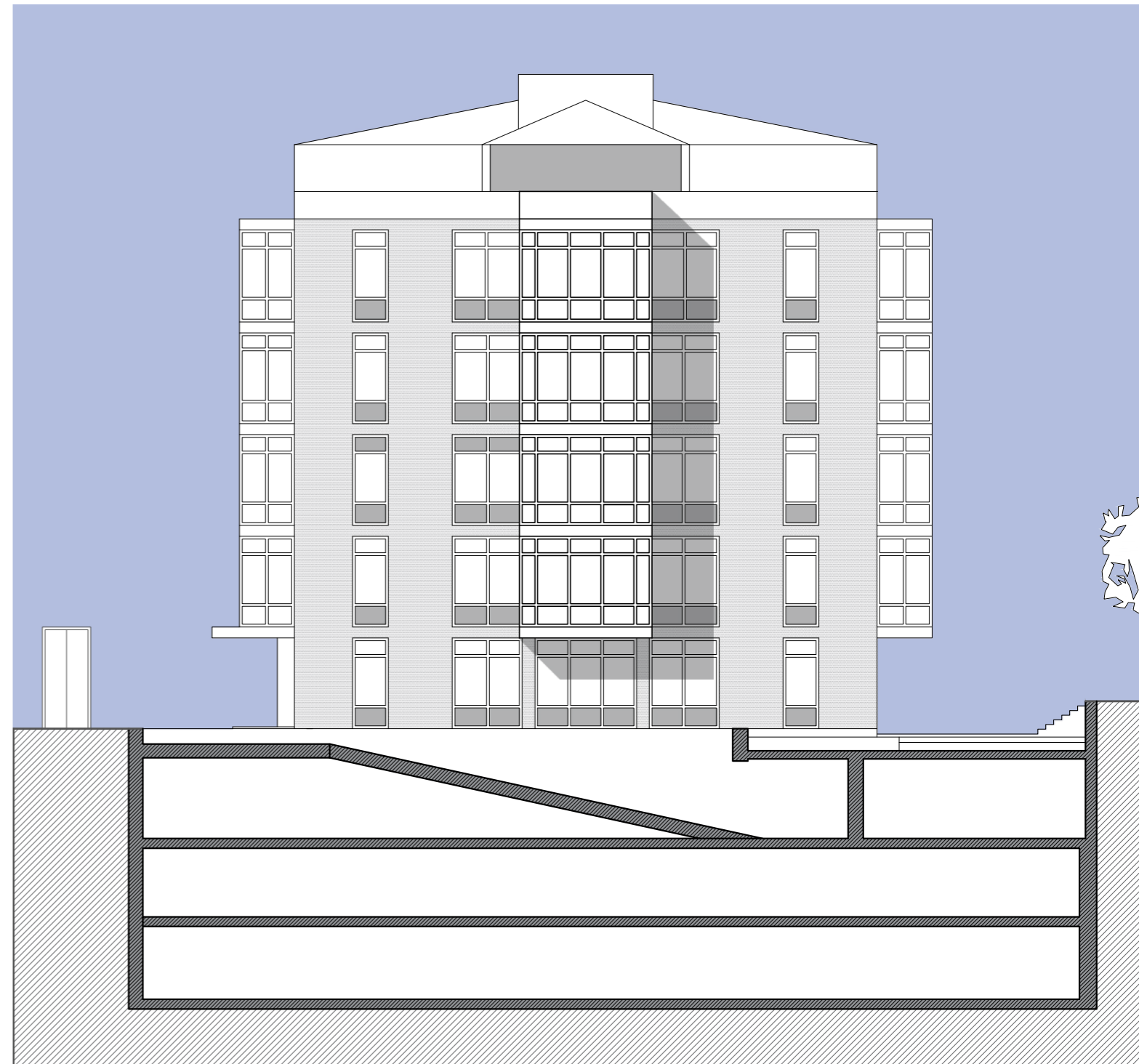


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North façade



South façade



Reuse materials

Loop life cycle of the materials

The facade transformation also brings new elements into consideration. As the main theory of the project is adaptive reuse, thinking about the existing materials and how to create a closed-loop strategy became important during the transformation process.

As Addis (2006) mentions, it is important to understand how materials and their qualities can be reused and adapted into new functions and spaces. This is the case of the standard glazing and the potential of the limestone façade. To achieve the transformation of the façade, the project looks into reusing

these materials in different spaces while still keeping part of their original presence. The spandrel glass remains part of the façade composition, but it is also reused inside the building as divisions in bathrooms and as privacy elements in coworking spaces. The same strategy is applied to the limestone. The material can be reused outside and in interior social spaces such as shared kitchens and communal areas, helping to keep the memory of the place inside the new residential environment and creating a more human connection with the past materiality of the building.

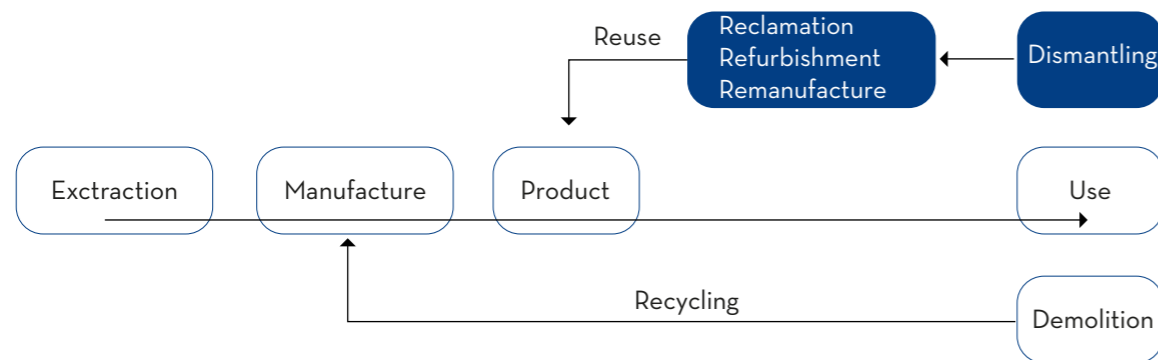


Figure 63: Closed-loop life cycle materials
Source: Addis, 2006

EXISTING MATERIALS TO REUSE						REUSED MATERIALS					
		Front Façade	Back Façade	South Façade	North Façade	Total	Front Façade	Back Façade	South Façade	North Façade	Total
STANDARD GLAZING											
Type 1	#	77	80	32	32	221	73	73	35	35	216
Type 2	#	16	16	8	4	44	21	21	6	6	54
SPRANDEL GLAZING											
Type 3	#	56	60	31	31	178	65	59	33	23	180
Type 4	#	34	18	14	14	80					
Type 5	#	15	20	9	8	52	14	18	10	8	50
LIMESTONE											
		Front Façade	Back Façade	South Façade	North Façade	Total	Balconies	Shared spaces	Terrace	Aprox indoors	Total
	m ²	302	281	181	137	901	252	160	67	350	829

Figure 64: Estimated material reuse inventory
Source: Author

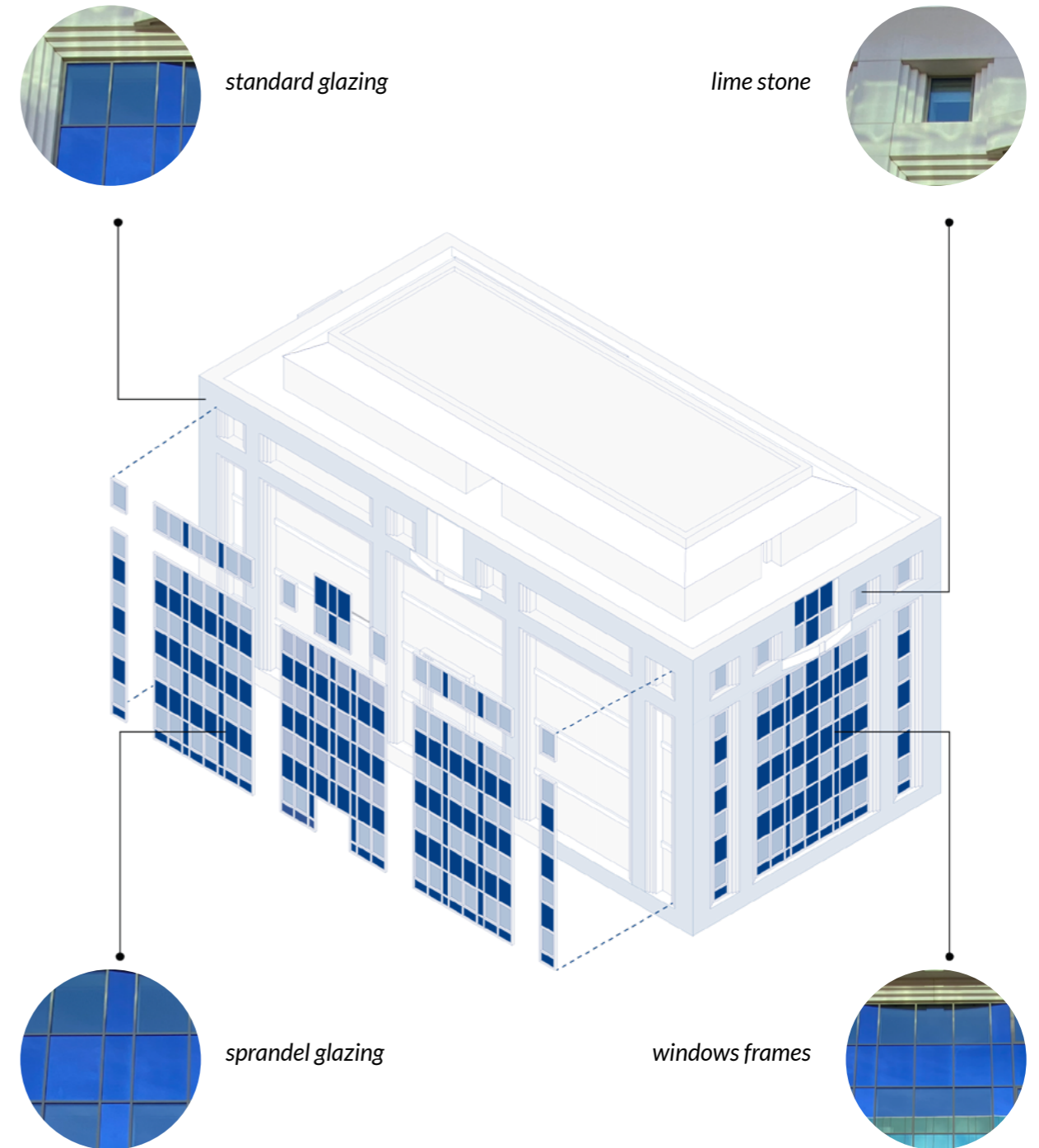


Figure 65: Material reuse axonometric
Source: Author



Discussion & conclusion

The starting point and aim of this thesis was to understand and apply the adaptive reuse of office buildings into housing while taking advantage of the existing building stock. Based on this, it was important to analyze and compare different office buildings in order to understand how context, structure, urban conditions, and architectural characteristics influence their potential for transformation. Considering the limitations and objectives of the thesis, the process focused on understanding and responding to the main research question and its subquestions.

What architectural and functional characteristics make office buildings suitable for transformation into housing or mixed use?

The thesis reflects on the importance of understanding not only the building itself but also the context and the users connected to it. The transformation is not only about inserting housing into an existing structure, but also about understanding the neighborhood, the surrounding activities, and the people living and working around it who can benefit from this change.

How can adaptive reuse contribute to creating more sustainable, inclusive, and resilient urban environments?

The thesis highlights the importance of designing public space beyond streets and parks, understanding how the scale of the building, its ground floor activation, and the integration of mixed-use programs can encourage social interaction and strengthen urban connections. The project reflects on how transformed buildings can support public life by connecting flows, paths, and everyday activities while creating more socially active environments.

How can office-to-housing transformations focused on short- and mid-term living create more accessible housing opportunities for young adults?

The proposed transformation is not only about introducing housing into a monofunctional office district, but also about rethinking how housing is used over time. The project explores short- and mid-term living as a strategy to support young adults in early stages of life, including students, young professionals, and start-up families, while encouraging a constant social mix within the building.

In conclusion, the project demonstrates how the transformation of office buildings into housing can become an opportunity to reactivate monofunctional urban environments through new forms of living, social interaction, and more accessible housing opportunities for young adults.

Reflection:

However, even though the project achieved the main goal of the thesis, there are still aspects that would benefit from further exploration and reflection that were not possible to develop within the available timeframe. For example, the façade could be explored in greater depth. As one of the main goals was to reuse the existing frames and windows, some parts of the façade remain relatively regular and standardized. Future research could investigate how an existing and repetitive structural system can be adapted more freely to create greater flexibility and possibilities in the design process while maintaining the value of reuse.

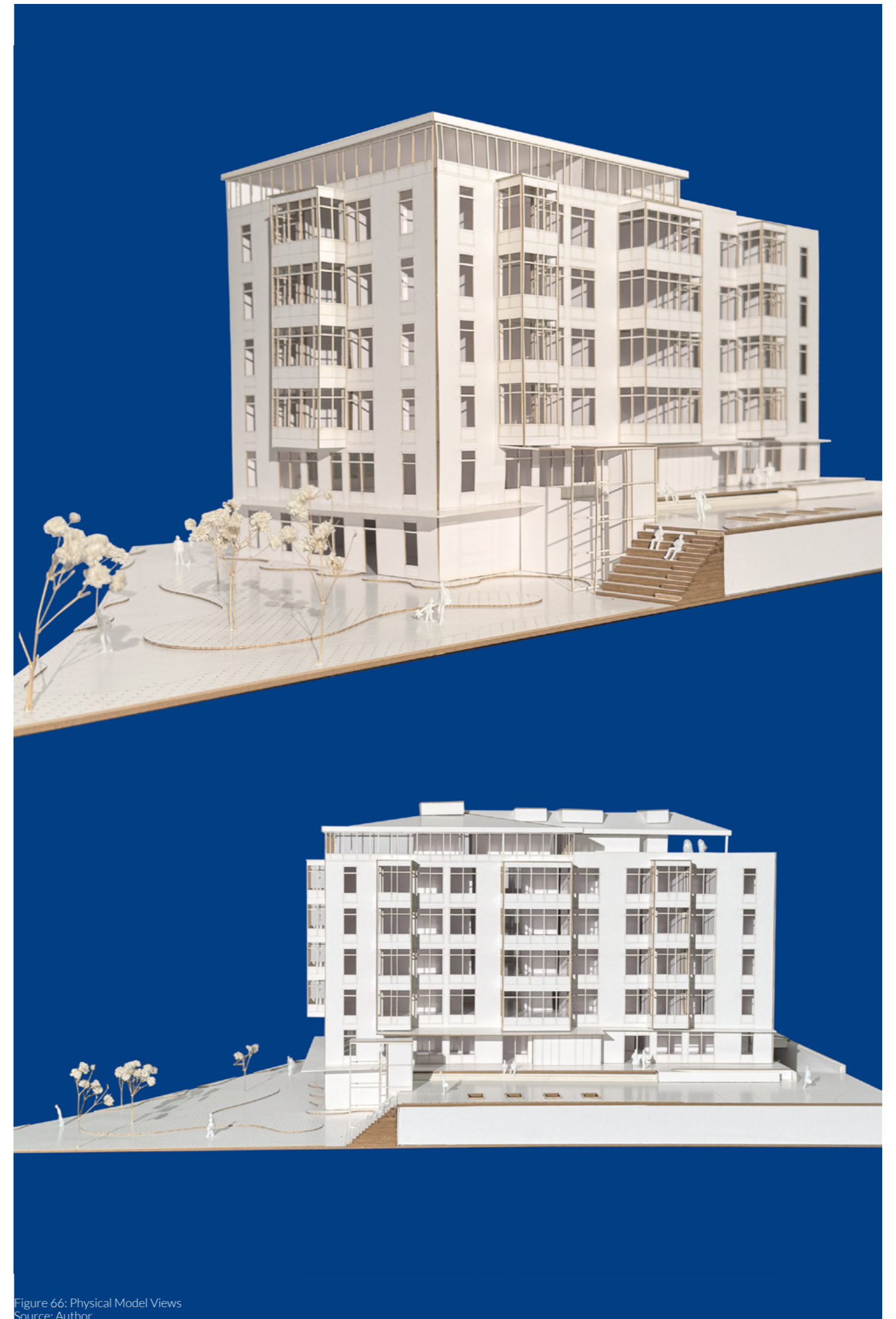


Figure 66: Physical Model Views
Source: Author

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AI statement

AI tools such as ChatGPT were used during the development of this thesis for language refinement, organizational support, and preliminary reference research.

All architectural concepts, analysis, drawings, and design decisions were independently developed and critically evaluated by the author.

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CHALMERS
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FROM OFFICES TO LIVING BUILDINGS

Adaptive reuse of office buildings in Luxembourg as a design strategy to
prevent premature obsolescence

Karla Yopez Granizo