

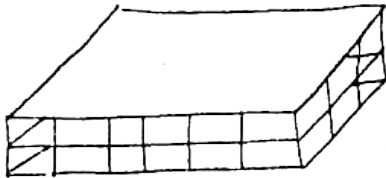
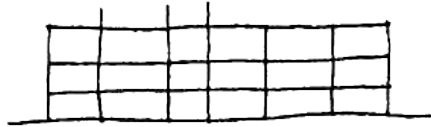
How to live in the North neighbourhood?

ça nous
mène
où ?



voilà un bâtiment
existant

ce bâtiment
peut être démonté
jusqu'à ce que
son ossature
soit mise à nu



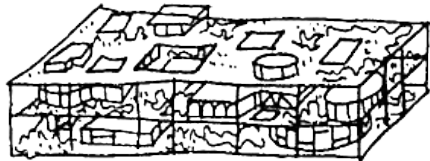
Les étages de cette ossature
sont des terrasses artificielles
sur lesquels



Les futurs utilisateurs
pourront proposer
eux-mêmes, les groupements de pièces
qu'ils souhaitent.

Ces pièces
et ces groupements de pièces
sont comme les maisons d'un village
et le village.

Elles peuvent être séparées
par des terrasses-jardins,
car les ouvertures pratiquées
dans les dalles
doivent être, de lumière
pour les plantes.



Theoretical examples, Yona Friedman, 1973

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0.

Introduction

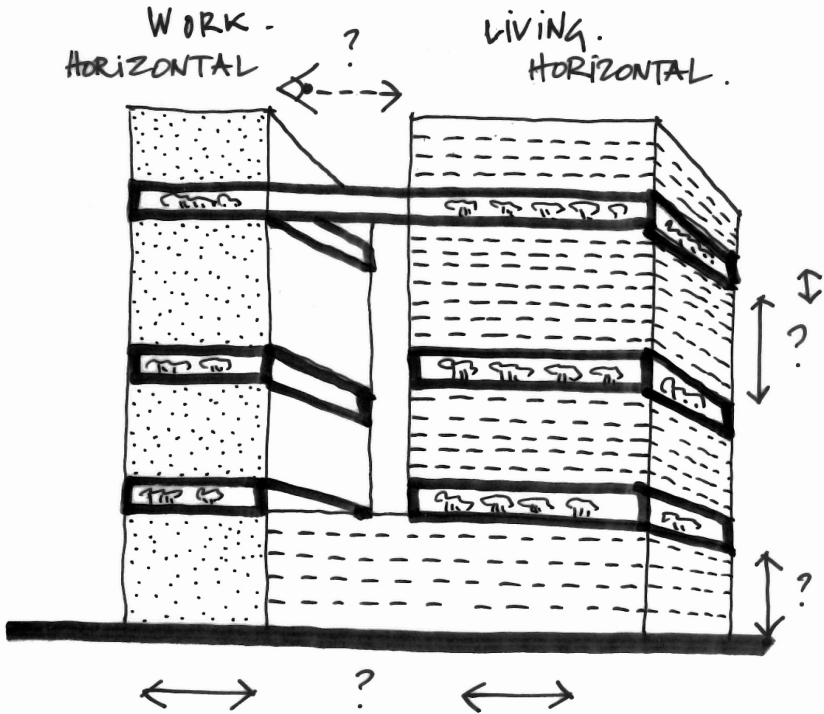
Preface

PREFACE

This document reports of a design-based research about which kind of housing typologies, and residential cultures, can be implemented in one of the Proximus (PXS) Towers of the Brussels North Quarter (QN). This research has been conducted between February and June 2022 by a2o, Multiple, and Koen Van Synghele. It addresses the southern tower of the PXS complex. The research has been conducted in parallel to the actual design & build process by Immobel and Neutelings Riedijk architects (NRA) for the transformation of this tower from an office building to a residential building. The goal is to to counsel Immobel and NRA on innovative residential typologies that “enrich the project and make it exemplary, by coupling the quality of life of the apartments with the specificities of the re-use of the tower structure” and to develop “innovative, flexible and exemplary non-standard typologies, with sufficient outdoor area and qualitative greenery”.

In the preparatory stage, the research investigated the context of the Brussels North Quarter. It analyses the North Quarter as a district with a traumatized urban history, where housing has been radically replaced with a business district. Currently, urban policy foresees the transformation of this monofunctional business district, and it will become more diverse, more accessible. This transition is analysed in-depth through desk research of demographic, cultural, architectural, and technical aspects.

Based on this preparatory study, a vision for the PXS towers was formulated, and guided the designerly research into innovative housing types. Central to the vision is the idea that a residential tower is organized differently than an office tower, and its organization is vertical and not horizontal (a stacking of identical floors). This is the key challenge for transforming such a tall office building to a residential building. The vertical organization of the tower induces the search for a lively built fabric in the tower as a basis for cohabitation. In this sense, the two towers of the PX complex – the office tower and the residential tower – will differ from each other but still form a pair, like the dancers Fred & Ginger.

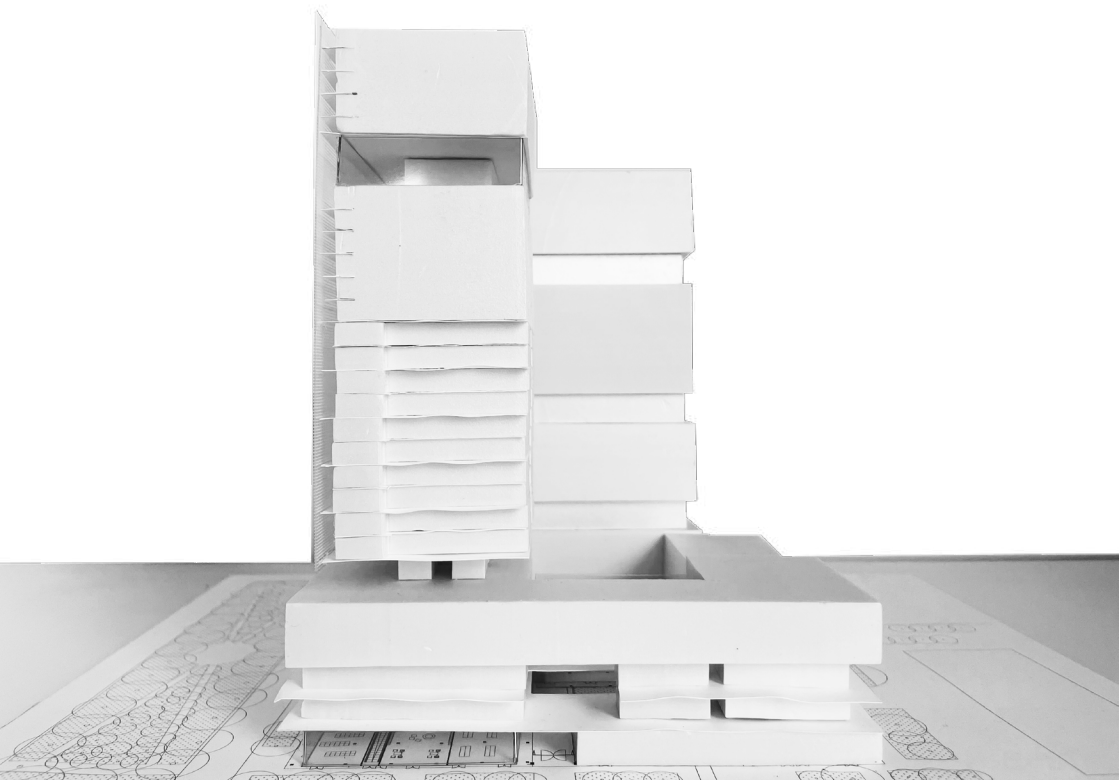


The main part of this report is about the designerly research into residential typologies. This research combines drawing, description and illustrative narratives, or scenarios, of how the tower might be inhabited. The designerly research is composed of three sections. Primarily, the typologies which are in the plinth of the building. These typologies are in close connection to public space but also share a large collective space. Hence, there is a need to orchestrate the transition from public, via collective, to private space. Secondly, the typologies which are in the tower. On the typical tower floors, the typologies need to respond to the depth of the building, the limited faced length, and the restrictions of the existing building cores. The typologies demonstrate how surplus qualities can be found between the dwelling and the core, and how these spaces can be used collectively. Lastly, the research demonstrates how the typologies can be used as a toolbox for designing the organization and the appearance of the tower.

The results of the design research have been evaluated by means of interviews with local stakeholders in Brussels, experts in territorial strategy, planning and housing. Based on these discussions, pointers are formulated on how to scale up the approach of this designerly research to other office buildings which can be transformed to residential or multi-purpose buildings, in line with the agenda for urban transformation in the Brussels Capital Region.

Glossary

NRA,	Neutelings Riedijk Architecten
BMA,	Bouwmeester Maitre Architecte
PXS,	Proximus
QN,	Quartier Nord, the Brussels North District
BCR,	Brussels Capital Region



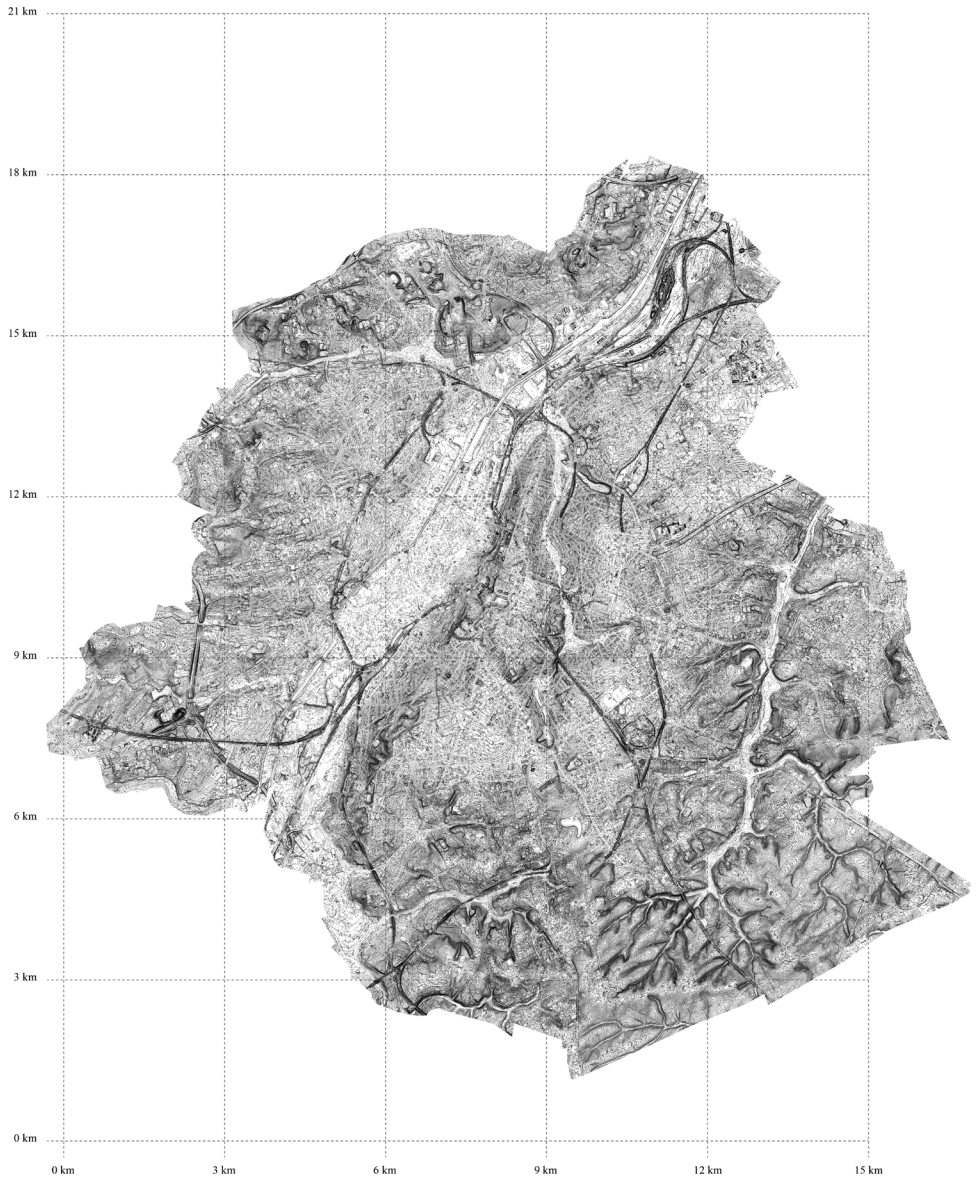
Interpretation of the assignment

This document reports of a design-based research about which kind of housing typologies, and residential cultures, can be implemented in one of the Proximus (PXS) Towers of the Brussels North Quarter (QN). Exceeding the scope of the building, the project aims to lay out novel concepts for realising dwellings in former office buildings that are valid on the scale of the Brussels Capital Region (BCR), where this solution to reprogram obsoleted offices is increasingly gaining traction.

This research addresses the southern tower of the PXS complex which consists of two towers on a plinth. It has been conducted in parallel to the actual design & build process for the transformation of this tower from an office building to a residential building. The design firm is Neutelings Riedijk architects (NRA) and the execution is in hands of Jaspers Eyers architects. This design-based research is delivered as a counsel to the design architects and to the client, Immobel. The assignment was issued by Immobel and the Brussels bouwmeester maitre architecte (bma) by means of an open call for experts in December 2021. The team that was granted the assignment consist of a2o, Multiple and Koen Van Synghel. The research was conducted between 1 February and 30 June 2022.

The call stated as a goal to counsel Immobel and NRA on innovative residential typologies that “enrich the project and make it exemplary, by coupling the quality of life of the apartments with the specificities of the re-use of the tower structure” and to develop “innovative, flexible and exemplary non-standard typologies, with sufficient outdoor area and qualitative greenery”. This goal aligns with the ambitions for the North Quarter to diversify into a multifunctional urban quarter with attention to liveability and the human scale.

Furthermore, the transformation of offices to dwellings is a design category that combines clear opportunities and challenges. The call for experts in stated the overarching research question: “How to increase the ambition in the reconversion of offices into housing in Brussels?” Redesigning an office tower for housing is very different

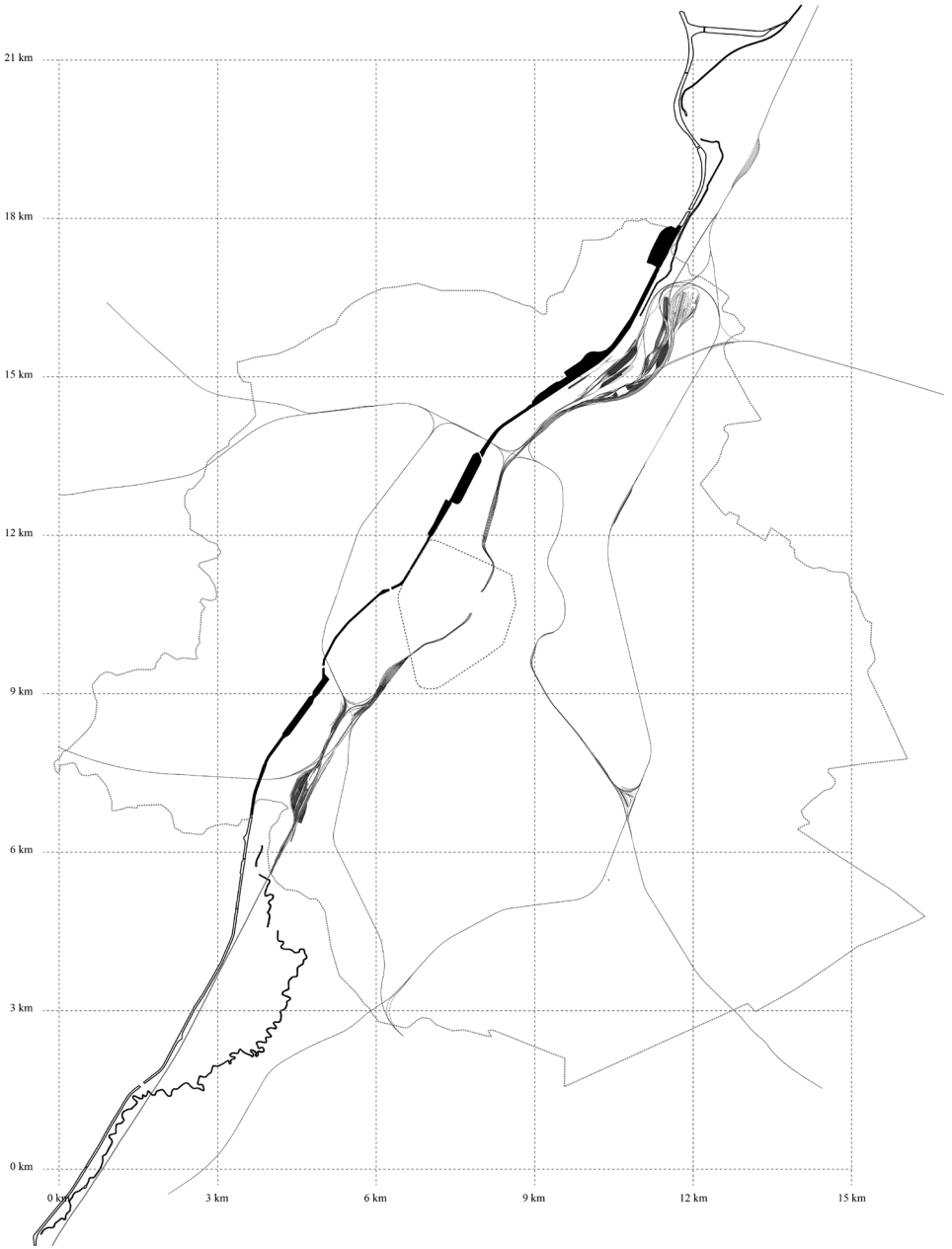


from designing housing projects from scratch. Offices have been designed with the aim to provide as much office space as possible within an envelope that has as little surface as possible. The floor-wall ratio determined the affordability and the business model of such an office building. Consequentially, offices are 'thick' buildings where significant parts of the floor fields have no direct natural light or view and are organized around efficient circulation cores. This makes the office introverted, with limited interaction with the streets. Moreover, offices are usually situated in business districts or at least in areas where commercial facilities are combined. Inhabiting a tower in such an area – and this is certainly the case in the North Quarter – one will still be faced with the office life determines the view from the dwelling. Residents will witness the daily commute, the activities behind the windows of neighbouring buildings, and the fluorescent lighting of interiors and exteriors. The residential environment shows itself very differently, with individualised curtains, plants, and terrace furniture. How can these both worlds be integrated architecturally?

Contextualising: North Quarter, Brussels

The Brussels North Quarter is an urban district with a 'traumatized' history which is explored here as the context for the assignment for the PXS towers.

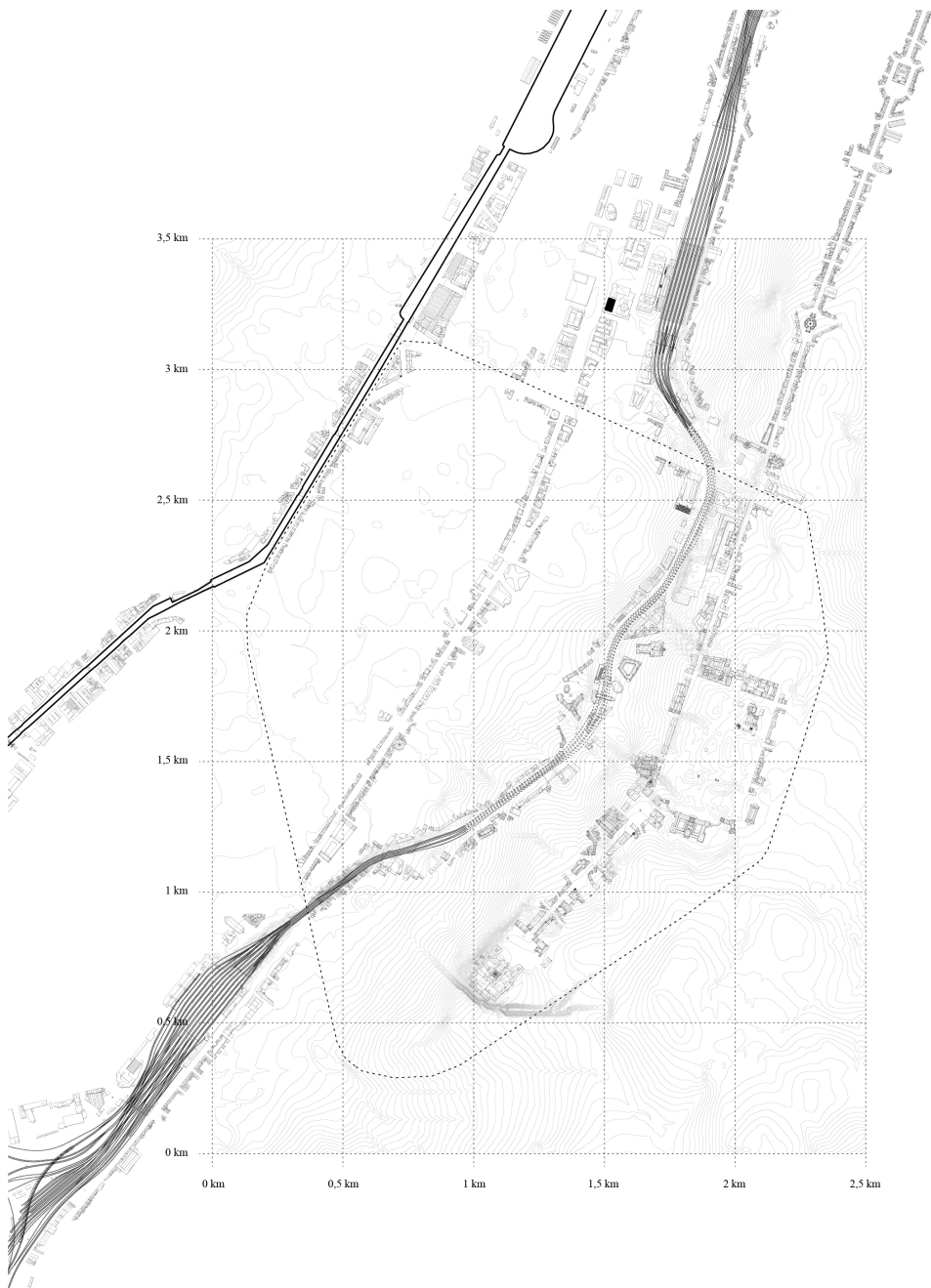
The presence of the Northern train station in the 19th century provided the positive incentive for a mixed and vibrant urban development of residential, commercial, industrial, and cultural programmes. Already in the 1920's Victor Bourgois, the Belgian modernist architect, devised plans for razing the organic urban tissue in favour of a tabula rasa modernist development reflecting Le Corbusier's Ville Radieuse. In the 1950s, the neighbourhood, which had already been divided in two by the railway track, became the subject of several plans that deconstructed its integrity. The original railway station was replaced with a new one, along with an elevated railroad which introduced a huge, closed wall into the district. The river Senne was vaulted and disappeared.



These interventions and plans rapidly undermined social cohesion, and this new condition played into the hands of developers of the ill-famed Manhattan Plan. The North Quarter hence became the site of urban expansion to release pressure on the densely used city and the locus for urban design experimentation. Over 11,000 inhabitants were directly or indirectly forced to move out because of this plan. Employment opportunities disappeared, and the social cohesion vanished with the buildings that facilitated this cohesion: housing, nightlife, places of culture, worship and gathering. The Manhattan Plan lies at the basis for the World Trade Center of Brussels and envisioned the building of the Belgacom Towers, which were however built later (1988 - 1996) according to separate plans and was designed by Jaspers-Eyers Architects.

The Manhattan plan, at the basis for the further development of the North Quarter as a business district, induced a rupture with local urban history. However, the ambitious plan was never executed in full. The plan had promised 5,350 new residential units, offering residential typologies tailored to the expected new population of white-collar workers. By 1992, 1397 social houses had been built or renovated, and private development had delivered 1051 housing units in nine projects on the edges of the North Quarter. These dwellings were only for a minor part occupied by original inhabitants of the Quarter. Local activists and researchers have stated that the number of rehoused locals, mainly elderly and migrants was 'disappointing'. Also the streetscape ended up disappointing as it offered little infrastructure for pedestrian connectivity and street liveliness.

There is a strong contrast between the different zones of the neighbourhood, especially when one compares the canal zone, the business district, and the 19th century urban tissue of Schaerbeek, east of the train station. Currently, the Brussels North community consists of locals, expats, and migrants, and is further diversified because permanent inhabitation is mixed with temporary inhabitation: it joins the traditional city, the expat city with the arrival city. Each of these user groups have their own rhythms and practices, that sometimes exclude and sometimes include each other : think of the flow of commuters going in and out compared to the continuous

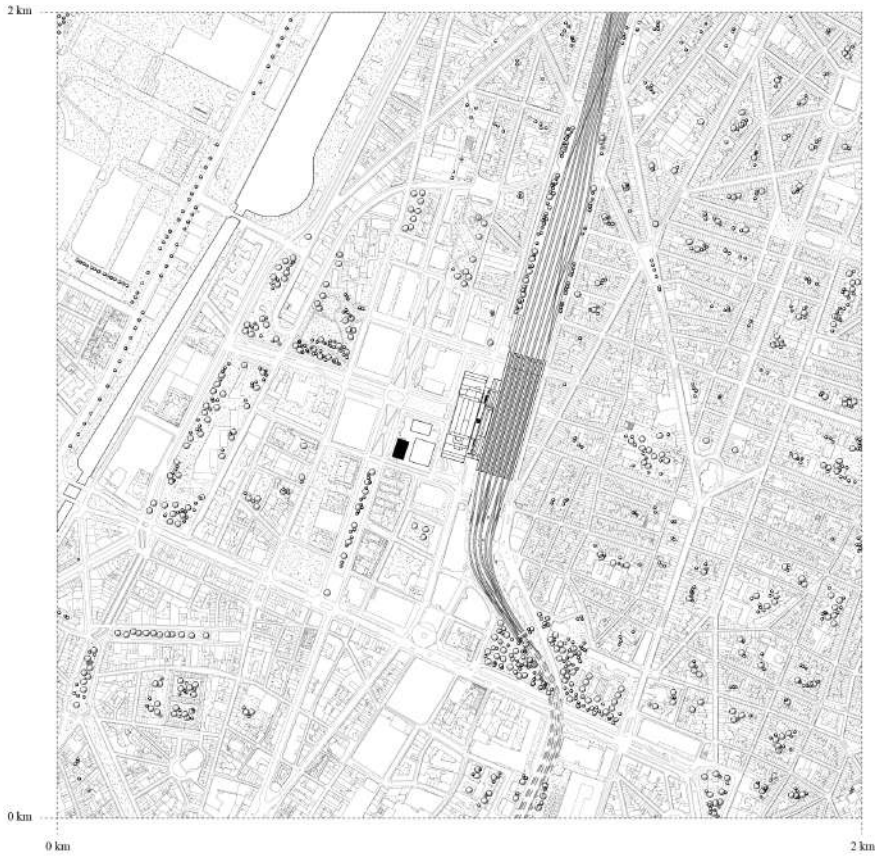


presence of migrants in the Maximilian Park; and the activities of local inhabitants in the evenings and in the weekends, after office hours. Citizenship and involvement are required to find 'new ways of living together.'

Currently, the North Quarter is rapidly changing grace to initiatives from the public sector, the private sector, civic organizations, and academic institutions. The goal is to seek synergy between all initiatives, in order to overcome the current segregation and fragmentation. Perspective.Brussels, by means of a survey among almost 1.000 persons , has documented the needs of residents of the North District who have stated;

- significant dissatisfaction with parks in the North District (57%);
- significant dissatisfaction with traffic safety in public space(51%)
- a strong appeal to upgrade public services to reinforce social cohesion (77%)
- a strong appeal to match the offer of housing to the needs of the local community (48%) and to mix diverse housing types in the neighbourhood (63%).

The public sector works on the improvement of the public domain, making streets more accessible for healthy and sustainable traffic modalities, and improving the green spaces in the district. These issues can also be responded to in the PXS Tower as a private development, and in other private projects that are going on. There are many temporal initiatives to reprogramme vacated offices, which bring together complementary partners in networks such as the Up4North/ Lab North initiatives. The IABR exhibition in the WTC towers (2018-2020) put the North Quarter redevelopment on the public agenda. Currently, the temporary initiatives are developing into more durable transformations. Eyecatchers are the ZIN project (designed by 51N4E and Jaspers-Eyers) and the CCN project (designed by Architectes Assoc+, TVK, Multiple).



Vision and hypotheses

Imbuing the Proximus Towers and the surrounding North Quarter with innovative housing, introducing robust green spaces, operant flexibility, and resilient societal tissue requires spatial interventions which are well embedded in the cultural shifts that are occurring in Brussels and the North Quarter. There is need for a 'time-based infrastructure' which is adapted to a dwelling culture that is affected by fluidity of the residents and continuous transition of the urban tissue. Building-in-time is a key paradigm to architecture, that explains how extraordinary buildings were erected across consecutive generations. We extend this term to growing-in-time, cultivating-in-time and/or using-in-time. Harmonising these architectural and anthropological principles within the given framework of the redevelopment of the Proximus tower lends the assignment exemplary potential: setting new standards for retrofitting modernist business districts.

Our goal is to seek connections between users, the building and housing types. In the context of the PXS tower, this entails that we address on the one hand innovation in the residential market, and on the other hand the physical potential and limitations of the Tower.

We are with habitation but also with the physical potentials of the entire complex. The research addressed the following hypotheses.

- In order to create a more continuous space between the different floors of the tower, we think it is necessary to explore the vertical dimension of the tower: vertical gardens as a tool to enrich the dwellings with quality outdoor space, with systems to purify water, to grow fruits or herbs,... to elaborate low tech solutions for heating and/or cooling.
- The two PXS towers are twins. An office tower and a tower with dwellings should not have the same identity, the same façades, the same morphology. They each should have an own identity like the dancing couple Fred and Ginger.
- The PXS tower that is to be inhabited requires diverse facades to respond accordingly to each orientation; For housing, in contrast to office spaces, it highly matters how the building responds to the north, east, south, and west conditions which are highly different.

Method

The research responded to these hypotheses and was organized in parallel to the design process of NRA. The method builds on the vision and involves two tracks: the design research, which is the main track, and the cultural research. The cultural research gathers knowledge to inform and support the design research and to collect arguments that prove the feasibility of the concepts realised in the design research.

The design research was organized in a flexible manner to support the actual design process of NRA. Coordination of the process was done in weekly workshops. In addition, biweekly meetings were held with Immobel and with the design team, these meetings alternated and were held until 31 March 2022. At this point, the counsel to the design team was delivered for preparation of the building permit of the PXS tower. After this moment, design research continued to prepare the design research as a case study for the transformation of offices in general. This design research assumes that accessibility is organized in the four shafts in the core of the building. These cores should organize day-to-day mobility of the inhabitants coming and going and ensure safe escape in case of calamity. This is part of the assignment of the design architects and is conceived as a 'black box'. This design research focused on residential typologies. This includes the collective spaces and also considered additional circulation facilities from floor-to-floor, on top of the functional cores that give access to the ground level and the streets. It was organized into three sections:

- The lively plinth
- Plans for living
- Identity

The cultural research was conducted in support of the design research and was adapted to the demanded flexibility and stringent deadlines of the design process. The initial ambition was to organize focus group discussions with relevant experts. The high pace of the design research urged for a quicker way of gathering knowledge. Therefore,

it is mainly based on desk research as a wide range of reports, studies and publications are already available. This is complemented with several interviews with experts to cover knowledge gaps. The cultural research was structured in three central topics that support the design vision.

1. [CULTURE AND DEMOGRAPHY]

Currently, the Brussels North community consists of locals, expats, and migrants, and is further diversified because long-term inhabitation is mixed with temporary inhabitation. It joins remnants of the traditional city, an upcoming expat city with the temporality of an arrival city. Entangling these cultures demands thorough research-by-design. The Proximus Tower and its environments need to prove their urban resilience by answering how to deal with this urban divergence.

2. [MULTIPLE HOUSING]

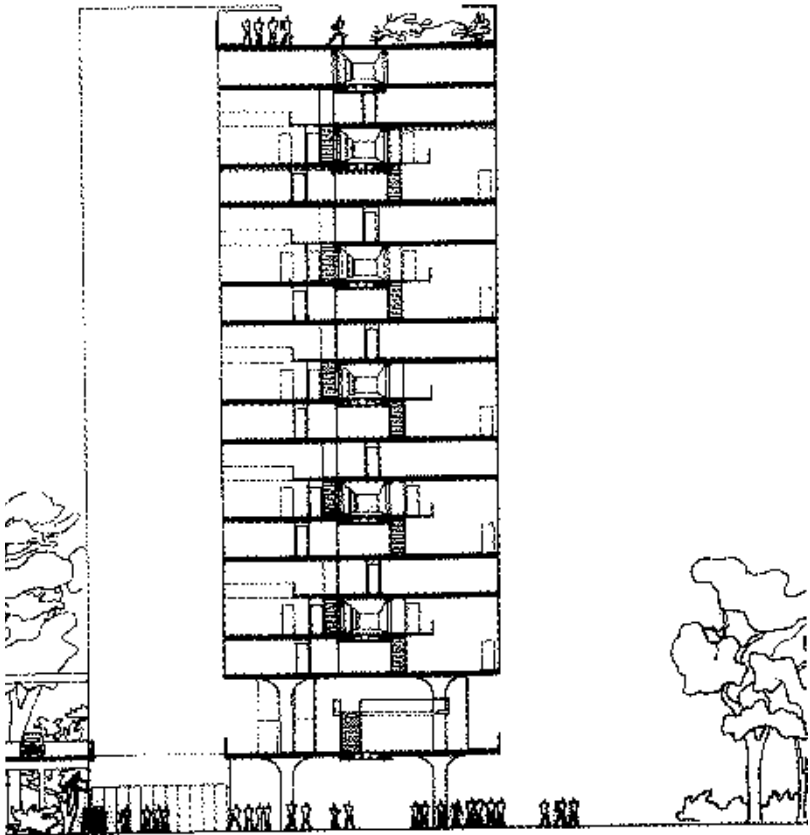
Demographic growth of one-person, empty nest, and elderly households (with/without services) is a development which traditional housing concepts cannot accommodate effectively. Inadvertently, the functionalist floorplans of the North Quarter become the breeding ground for developing sustainable housing concepts. Salvaging them is in line with circular economy principles. Novel strategies for maintenance and usage of public, collective and private spheres in a diverse and high-density urban area are needed.

3. [BEYOND THE DWELLING AS A PRODUCT]

Architects traditionally design buildings and spaces. The field is shifting from a focus on building to a wider scope of providing healthy, sustainable, and inclusive ecosystems. Using solely architectural instruments, architecture risks the emblem of aestheticizing or greenwashing (using beautiful render images of lush green and natural facades). There is a need to develop inclusive architectural solutions, empowering future users and communities to develop lasting, resilient, and sustainable lifestyles in the evolving urban context.

Reading guide

In chapter two, the cultural research is elaborated. Chapter three, four and five deal with the designerly research. Chapter three is about the lively plinth, chapter four is about the tower and its housing typologies. Chapter five reflects on these typologies by proposing architectural design strategies for organizing the developed residential typologies in the tower building. It is complemented with evaluations of experts that were interviewed during the project. Chapter six concludes the report and points out opportunities for further research.



1.

Research

Culture & Demography

Culture and demography

In 2021, 559.260 households were counted in Brussels. The majority of the households (70% in 2021) are small households, counting one or two persons.

Single person households	47%
Two person households	23%
Three person households	12%
Four person households	10%
Five or more persons	08%

Brussels has a negative internal migration balance (-14.908 in 2018). This means that more people move from Brussels to Flanders and Wallonia than the other way around. It has a positive international migration balance (+16.996 in 2018). This means that more people travel from abroad to live in Brussels than people leave Brussels to live abroad.

The households that leave (approx. 40.000 persons in 2018) typically move from Brussels to Flanders and Wallonia, and especially to the suburban ring surrounding Brussels. There is high concern about the middle-class leaving. This emigrational pattern is part of the so-called Brussels paradox; The situation that Brussels economically is a very productive region, but that the people contributing to that production live outside Brussels. But equally lower income classes significantly migrate from Brussels to the periphery. Middle classes moving out of Brussels do so for many reasons, but the quality of the dwellings is one of the most important reasons. because they look for an affordable, green and healthy environment (high safety, low air pollution, low noise) and seek a place that supports their car mobility. They find this in the suburbs.

Of those that move to Brussels, half are under 30. They come to Brussels as a place for emancipation because Brussels provides education, careers, culture, and networks. They develop into a new middle class and require perspective to stay in Brussels, to develop their urban lifestyle.



The Brussels Paradox can also be recognized in the North district. Here, the population is on average in lower income brackets, with an average year income of up to 18.000€/year. Their houses are not in the Business district but on the edges of it. The commuters moving in and out have their own rhythm. A third group of residents is the transmigrants who, since the refugee crisis of 2015, are staying in the Maximilian Park in the North Quarter. This demographic and cultural composition will change due to the changing occupation of the towers in the North district. Researchers and activists warn for the top-down perspective of architects and developers in reimagining the North Quarter, and observe that the projected futures, of bold towers, in its vertical perspective rarely does include the actual presence of migrants in the public domain of the streets and parks.

A possible way forward is to have significant attention to the area where the tower touches the ground. Here, the North quarter needs a programmatic mixture, including dwellings, that guarantee eyes on the street. The programmatic mix should furthermore be finer grained, and support diversity in terms of use. The consideration of housing typologies in this investigation should hence also target the plinth of the PXS building.

Multiple Housing

Multiple housing

Because households are becoming more diverse, and because the average household is decreasing, classical housing forms cannot cater to all the housing questions in society. There is need for diversification in the housing market; there is need for smaller units but equally there is need for bigger units for large families or newly composed families – households in which two partners have children from earlier relationships. Moreover, the decreasing household average means more housing units per capita. The need for more and different housing goes hand-in-hand with design-based experimentation to prevent uniform mass production. This experimentation allows that housing design can explore contemporary challenges. As smaller dwellings are realised, the qualities that a resident would benefit from in a bigger house, can be provided outside the private unit. For example, by sharing services in a shared housing concept. In Brussels, concepts for sharing housing are increasingly becoming popular. Is shared housing the key to innovative housing concepts?

Shared housing has appeared in many forms throughout history. Sharing facilities in a small community, centred around a specific place, provides certain benefits of frugality, of care and solidarity. The composition of a ‘magic mix’ of inhabitant profiles would allow the cohabitation of caregivers and care-receivers; of strong shoulders supporting the weaker ones.

One of the concepts that is gaining interest is cohousing. This is a form of living together that depends on joint decision-making processes regarding the inhabited building, and which combines private units with accessible facilities that are maintained and managed by the collective. Cohousing appeals to very diverse people who seek diverging benefits in the residential environment. Evidence from Denmark shows that cohousing residents have a very high level of satisfaction about their residential environment, that communities combine retired and working residents, and that there is a bias toward higher- and middle-class inhabitants, demonstrating some segregation with lower class population groups. Cohousing correlates with environmental awareness.



However, it is important to note that a city like Brussels houses many kinds of people with a myriad of housing aspirations. Researchers Elise Schillebeeckx and Pascal De Decker have investigated the aspirations of people moving to and from Brussels, having interviewed 153 respondents and observed their residential environment. They sketch 10 profiles of relocating households, cautioning that most people would recognise themselves in multiple profiles. Each profile represents a certain position towards two opposites. The first one, regards the cosmopolis (density, anonymity, multiculturalism, tolerance, modernity) either with love (cosmopolitanism) or with fear (fearism). The second one, between love for the metropole (looking to live in the centre) and love for arcadia (looking to live in the countryside). Three categories are important for considering in the development of innovative housing types:

- Cosmopolitans, Urban Elites, Born City Dwellers and Converted (urbanites) enjoy the anonymous, multicultural, dynamic big city living but require flexible housing, a healthy and safe environment, access to culture and education.
- Urban villagers and Disappointed (urbanites) would like to lead an urban life and would be greatly supported by introducing strong social/neighbourhood networks, more green living environments, safe environments for kids; the urban villager stays/comes, but the disappointed urbanite leaves.
- Transients, reluctant leavers, classic suburbanites, and anti-urbanists in due time prefer to leave Brussels, go to the suburbs, and will not be seduced by a hyper-urban living environment.

In designing innovative typologies for the PXS tower, the upper two categories are to be considered as potential inhabitant profiles. The study demonstrates that there are people who love the anonymity and those who love place-based social interaction; the latter one would welcome sharing spaces and responsibilities, while the former would be reluctant, keener on finding interaction in a wider (cosmopolitan) network.

Beyond the dwelling as a product

Beyond the dwelling as a product.

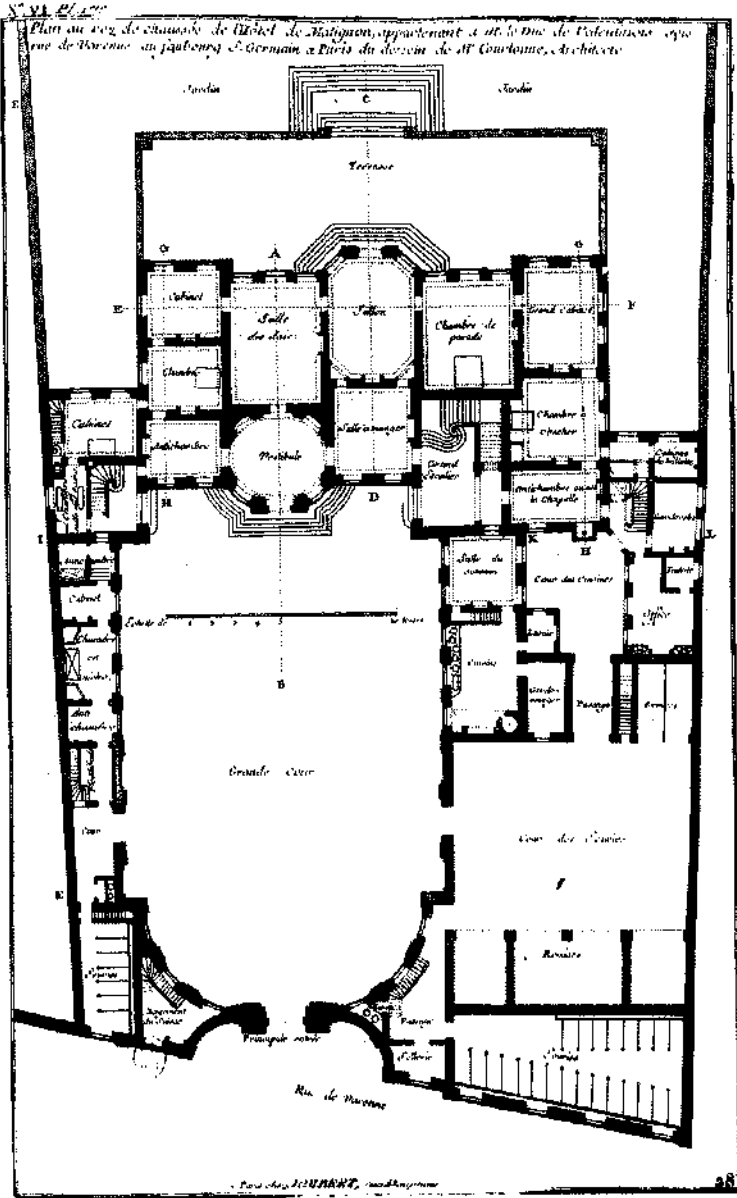
Housing is often discussed as a product, but how can it be made a canvas, a resource, an experience, a garden, a health facility? In other words, how can it be a machine for the cultivation of the lifestyles and activities that are becoming as diverse as the inhabitants of Brussels?

Starting from the perspective of the dwelling as a product: 60.2% of Brussels residents rent a housing product, they are tenants. 39.8% of the Brussels inhabitants are owner-occupants (2021). Of new flats, 50% are commonly bought by landlords who rent out these dwellings:

- About half of the landlords rent out one apartment.
- About half of the landlords rents out two to 20 apartments.
- Just 1% rent out 20 or more apartments – these owners together own 10% of rented dwellings.

Geographer Yves Van de Castele uses these figures to express the concern of how the private market will cater to the contemporary needs for affordable dwelling. Private investors, he argues, prefer realizing two-bedroom apartments over smaller dwellings and shared services that respond to the contemporary demography and lifestyle preferences. Which are the features of the PXS Towers, and of its current redesign, that provide a perspective beyond the dwelling as a product?

Firstly, the tower is thick, meaning that each floor has a lot of space that is, anyhow, already there; the thickness of the tower, ensures that not all floor surface suitable for projecting the standard two-bedroom apartments without leaving space on the inside. The thickness of the is an invitation for an exploration into the oversize and how to make use of it. Commonly, buildings like warehouses or factories provide this oversize, as is pointed out by BULK Architects in their publication about robust, open buildings. The transformation of an office building like the PXS tower requires an appropriate vision of how the robustness and oversize can be profited of.



In designing the dwellings in this condition, the recent report of the expert committee 'Good Living' on housing and building legislation in Brussels provides key pointers. The report, about housing quality, starts from the basics such as the accessibility of the unit, the access of daylight and the view, and the free floor height of 2,7m. It builds on those basics in response to contemporary lifestyles. It proposes not to give minimum dimensions to each room, but to the dwelling as a whole, so that the dwelling can be made flexible. To this end, the distinction between carrying and non-carrying structures should be made clear. The report also aims to give a framework for collective or shared housing. To prevent units from becoming too big, it advises to restrict collective housing units to 12 bedrooms. Servicing spaces like kitchen, storage, and spaces for waste separation and disposal, should be designed in line with regulations. Also, the access to outdoor spaces is a basic tenet.

These outdoor spaces are also indicated in the preliminary design by NRA, taking shape as the green constrictions in the tower volume. For the outdoor spaces, it is important to distinguish between public, collective and private outdoor spaces, which function as communicating barrels :

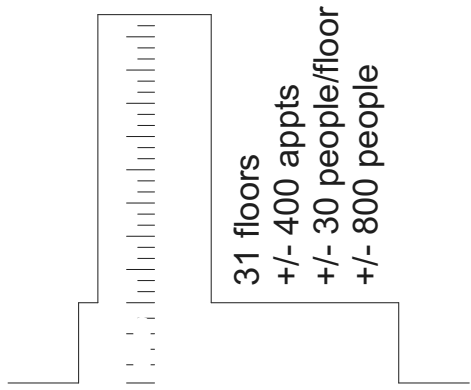
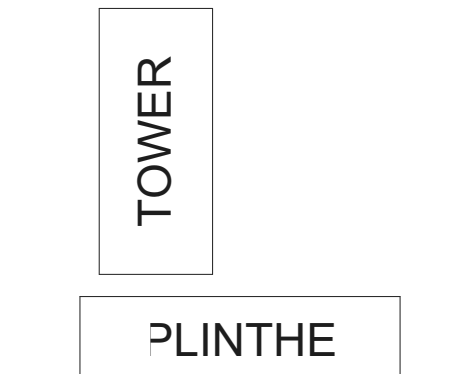
- Near busy public spaces, collective spaces offer quietness;
- Programmes lacking in public spaces can be in collective spaces;
- If public spaces function well, smaller private spaces (gardens/terraces) are required.

Nature-based solutions in public and shared spaces support collective well-being. Many EU-funded research projects point out the importance of involving (future) users in the co-creation of shared spaces. This co-creation also involves the cultivation of knowledge and expertise among users to maintain the spaces.

Going beyond the dwelling as a product, implies to seek profit out of the thickness of the tower for adding functions to the dwelling that wouldn't be affordable in a new construction. This includes meaningful outside spaces, which are well calibrated on the scale between public – private.

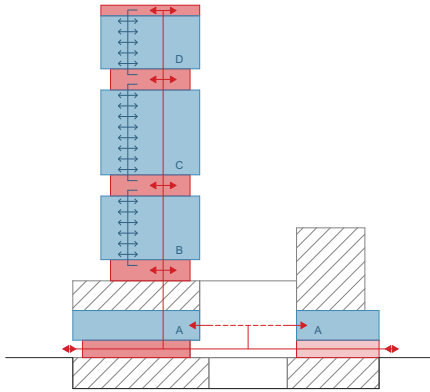
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Initial Statement

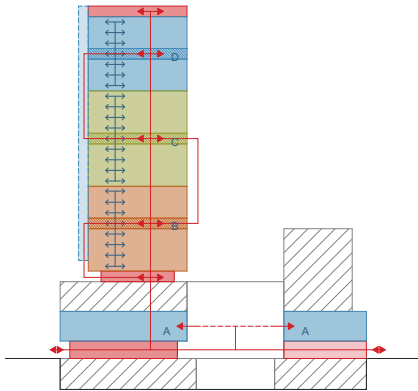


Inhabiting verticality

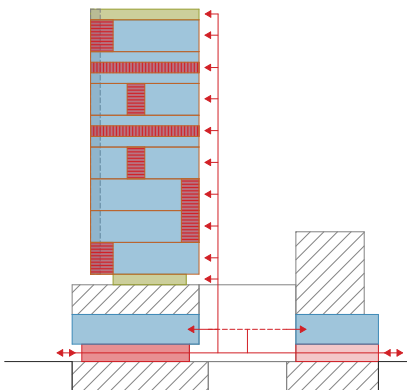
The PXS tower seems very large if we look at the sheer number of floors, of square meters and of inhabitants who might live there. Isn't the building too large for a resident to perceive it as a home to him/herself or to a community of people? Is it possible to subdivide it into recognizable clusters as one would do for a traditional, 'horizontal' neighbourhood composed of building blocks? In our perspective, it is necessary to, while exploring residential typology, also to explore subdivision in close connection to typology.



1.
dividing relationship between
common and private spaces



2.
creating urbanity through
vertical connected spaces



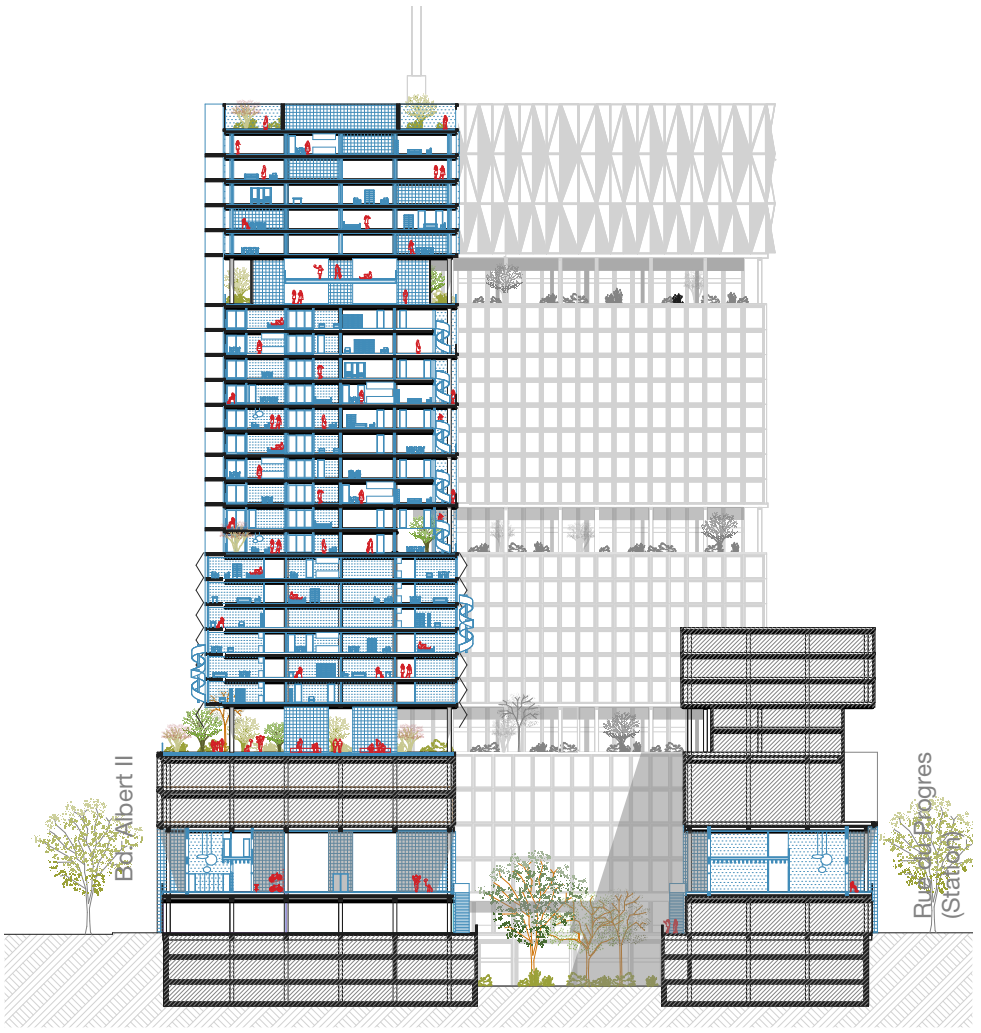
3.
stacking of communities

The subdivision of the tower can be realised with three interrelated strategies.

1. A traditional residential building block would have a plinth to connect the building to the ground and to the public domain. The plinth can be used for collective facilities, public or commercial amenities. Imagine this is repeated by stacking these buildings one onto the other, until the height of the PXS tower is reached. This is an approach in line with the preliminary design by NRA.

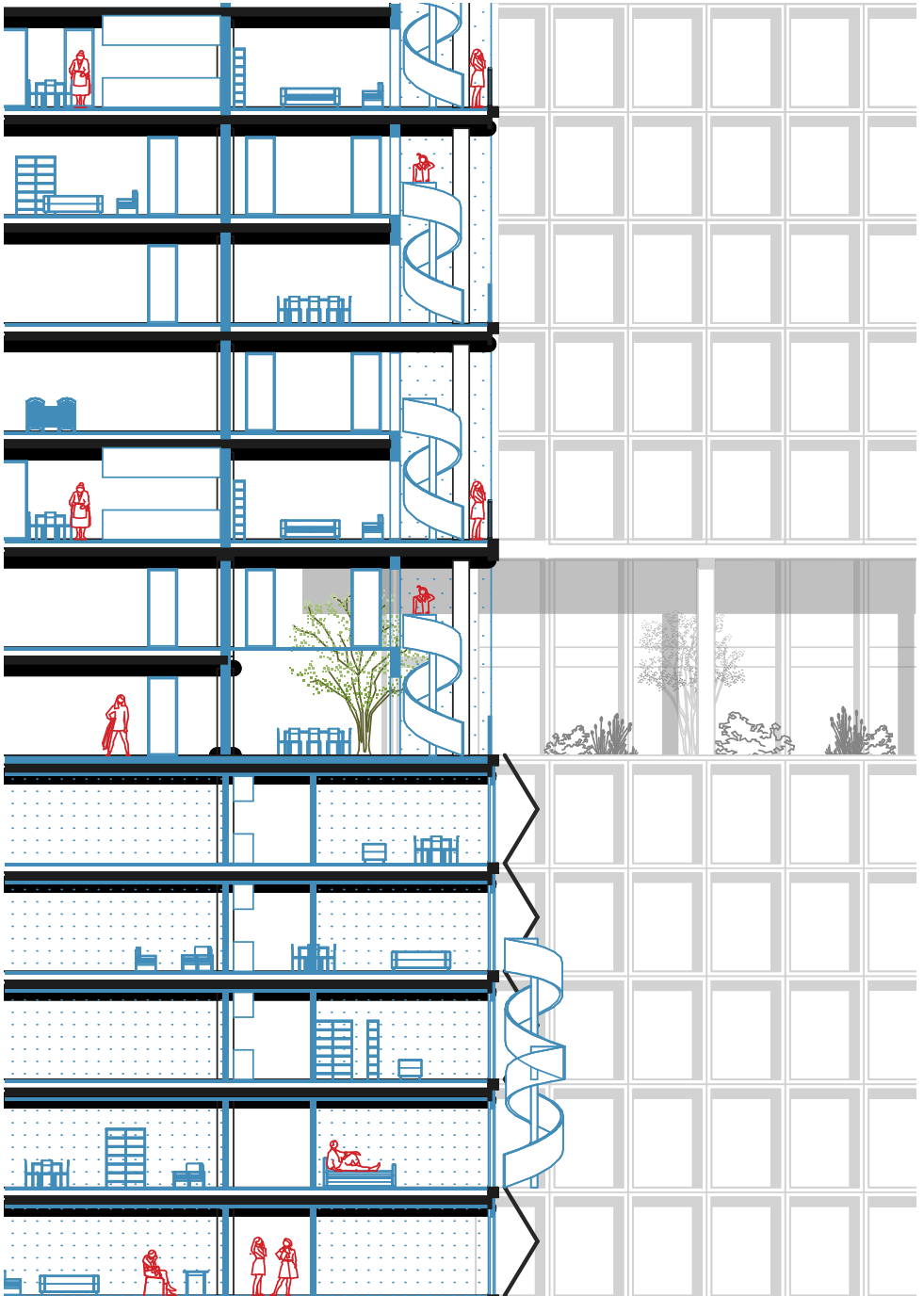
2. Because we assume one would reach either one of these shared 'plinths' raised into the sky, the plinth doesn't necessarily have to be on the bottom floor of its respective 'building block'. It could just as well be in the middle, between the residential floors. That way, from the lift stop, each front door is within reach of only a couple of flights of stairs, say maximum 3. This lowers the threshold for moving through the shared circulation spaces: and lower the threshold for social encounter and for developing a healthy lifestyle.

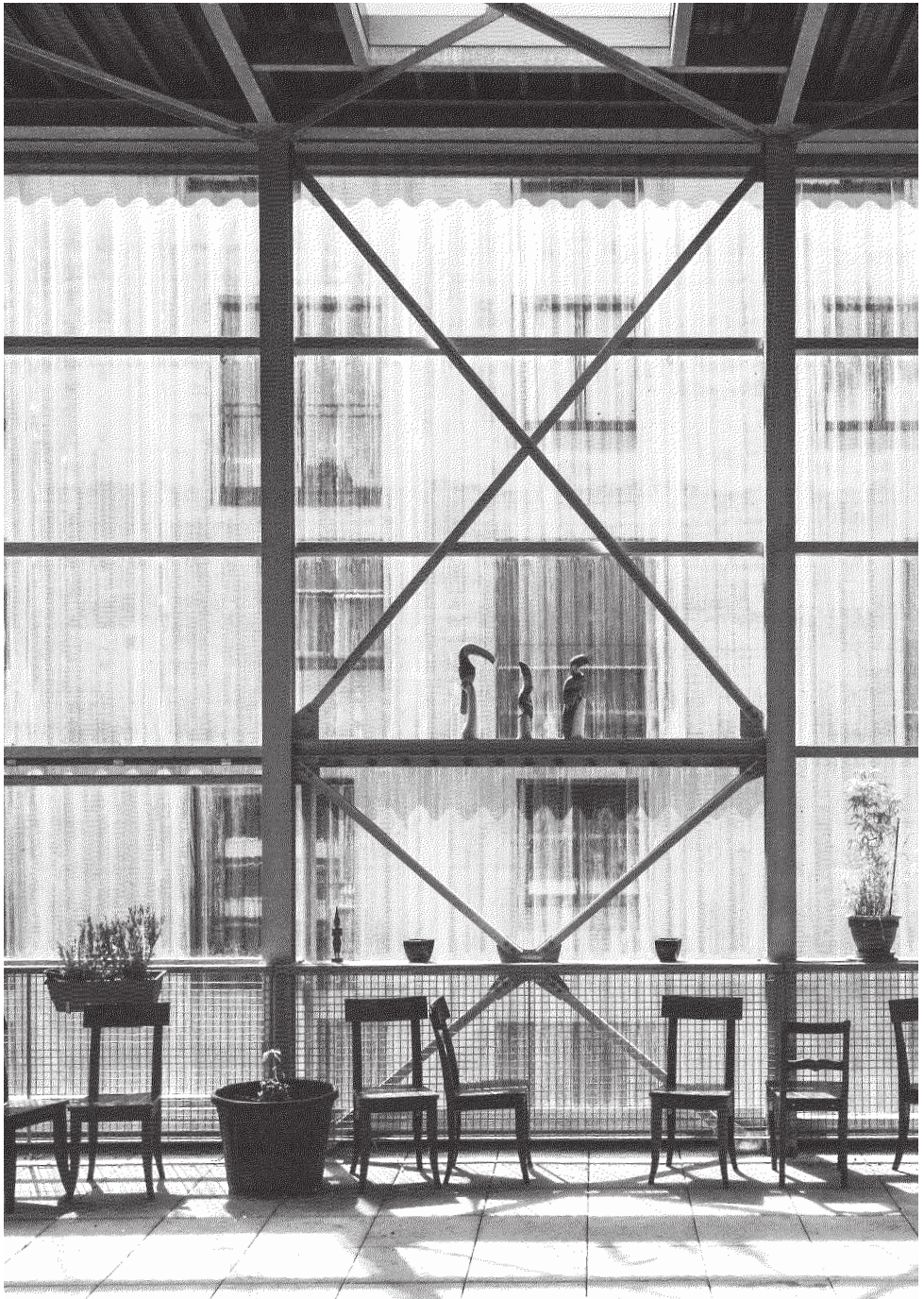
3. Lastly, if the housing typologies are diversified, this would allow for the creation of multiple sorts of vertical organisation of shared spaces and circulation spaces. This would allow that links are made across the floors of the towers: links that are defined by valuable shared circulation spaces which are generous and give space to activities for which the dwellings are too small.

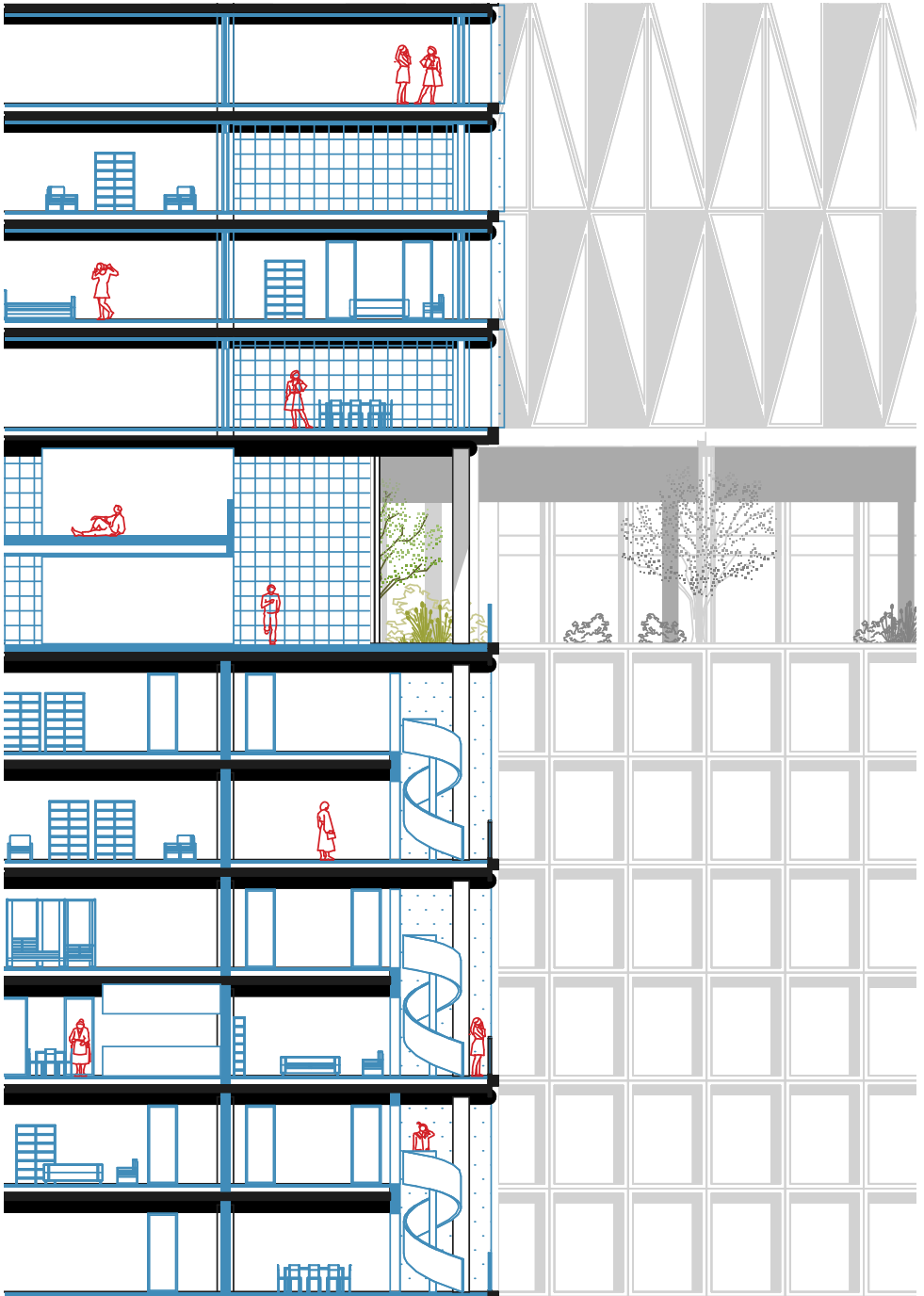


A fabric of communities

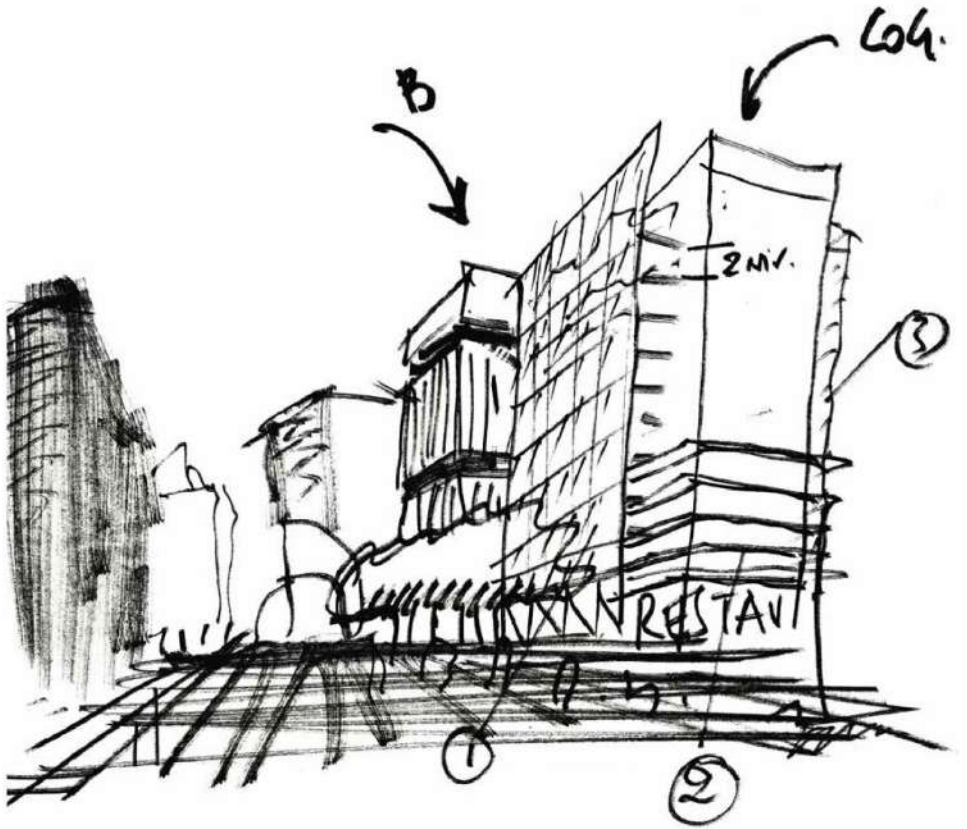
The three strategies as stated earlier can be recombined in the design process. The third strategy is however most interesting. It has most potential to compose a lively built fabric in the tower as a basis for cohabitation in such a big tower. Moreover, it comes with the principles to reconsider the architectural appearance of the tower, to match function to form, and to differentiate the residential tower from the office tower.







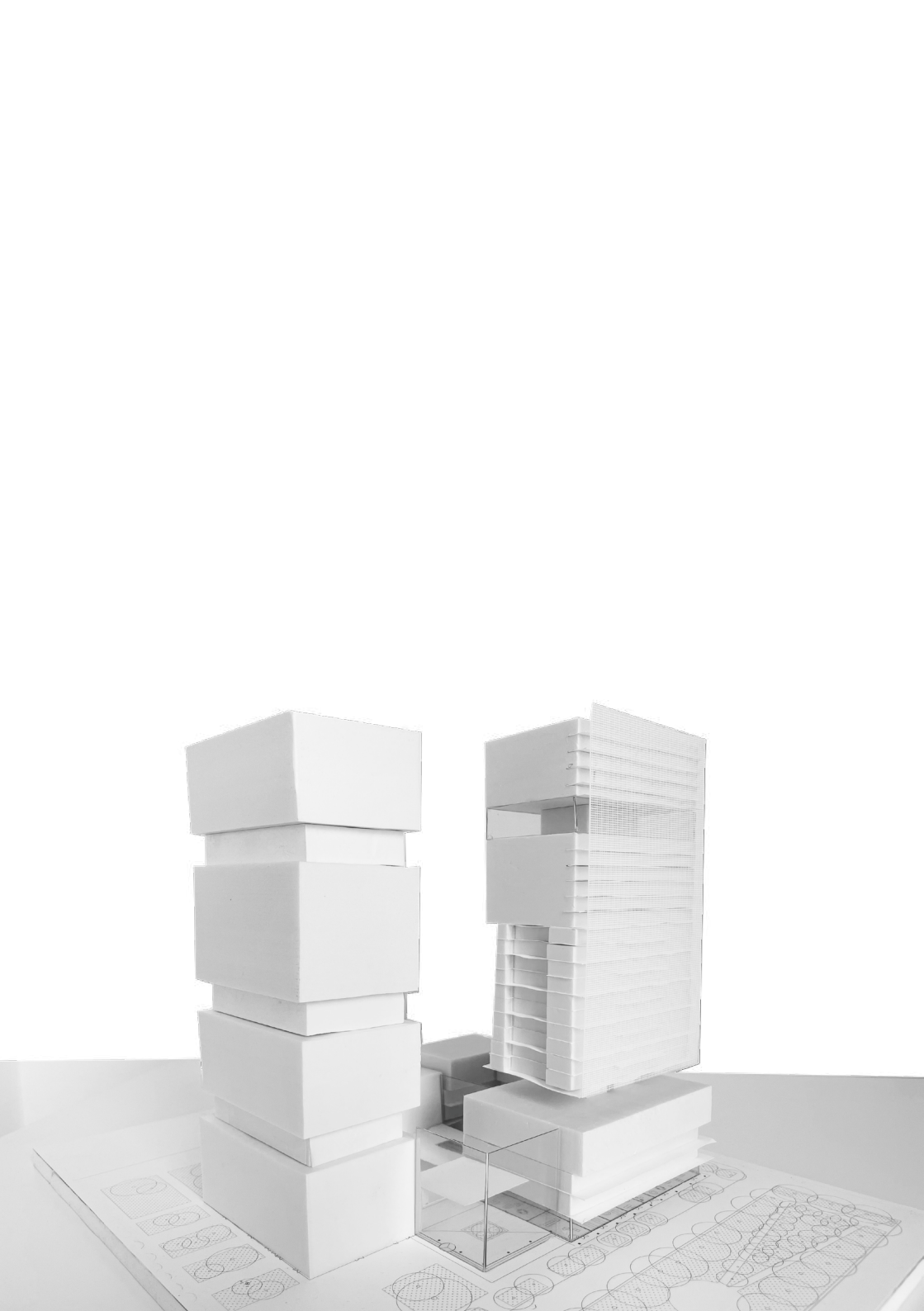


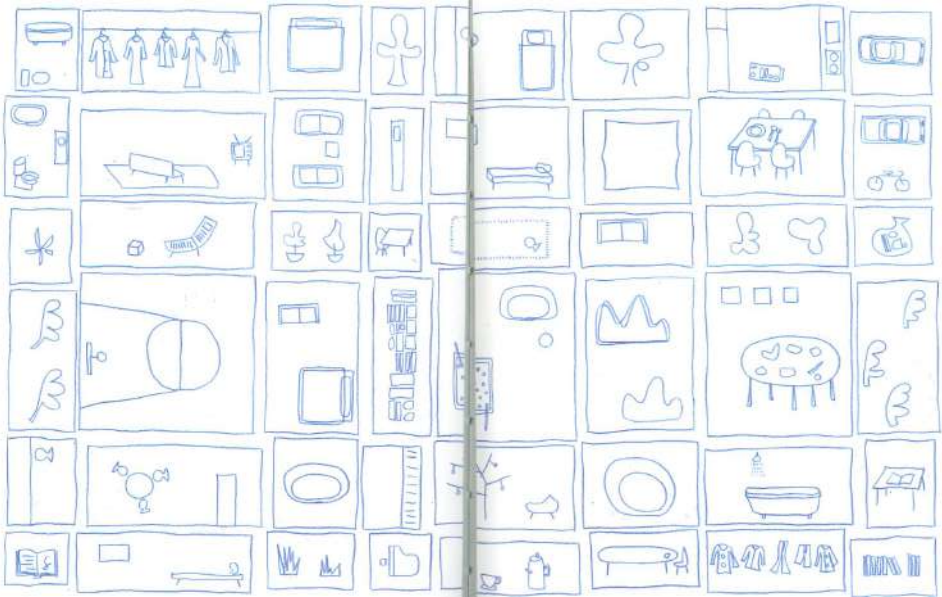


An expression of living

A residential tower of this size would best distinguish itself from the office tower.

For a residential tower, it makes sense to design each façade in coherence with the respective conditions of orientation, view, and housing typology. Whereas the office tower has a 'horizontal' logic in the repetition of floor fields, the residential tower rather has a 'vertical' logic of orienting the dwellings to their surroundings in the most efficient way.





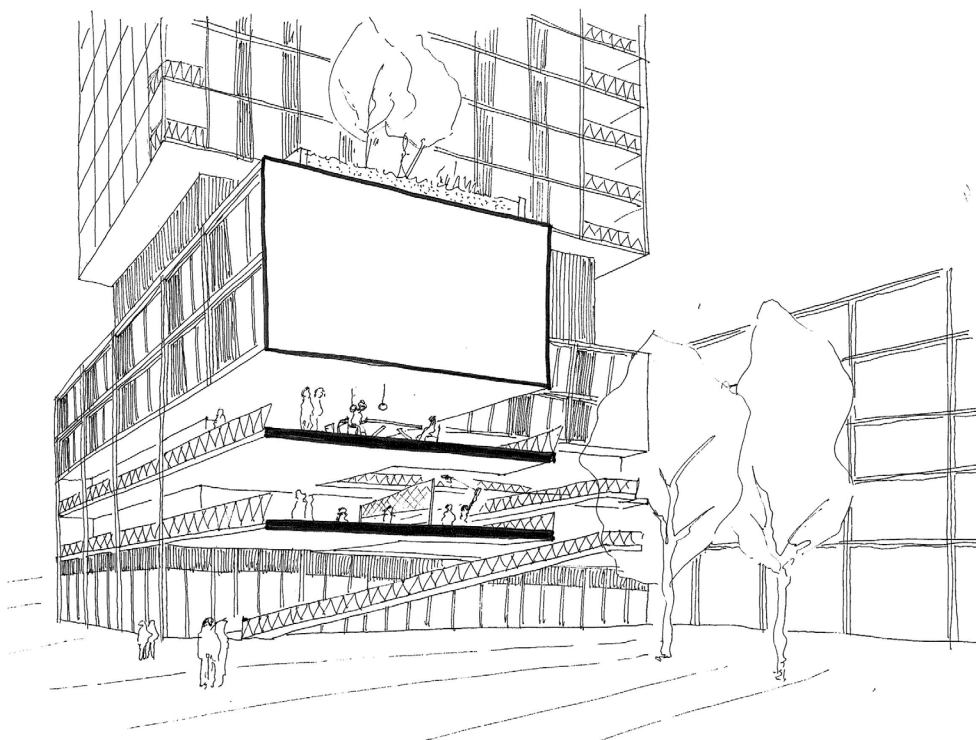
The organization of the residential tower should facilitate residents in living their life and in organizing their daily routines. With 800 residents, diversity in daily routines should be considered.

3.

The lively plinth



Javier Agustín Rojas, casaHo, Buenos Aires



The plinth connects the tower to the public domain. The public spaces in the North Quarter lack interaction with the spaces inside the towers. From the outside, one doesn't see what happens inside. Placing dwellings in the plinth of this building would allow that interaction takes place: movement from the street towards the front door, homely terraces, eyes on the street throughout the day.





Bruther, Limeil-Brevannes

Muoto, dwellings



TVK, Students residence, Arceuil



The plinth orchestrates private, collective, and public spaces. Moving through the building, the level of accessibility is accentuated by the architectural composition of slopes, floor fields and atriums. The façade is a dynamic interplay of the receding and protruding lines of the floor fields, bannisters, walls, and windows. Green spaces (trees, perennials, grass) contribute to diminishing the UHI (Urban Heat Island) effect. The effect of plants on street level is highest in street canyons of up to 20m. The plinth is therefore the place where to battle the UHI effect.

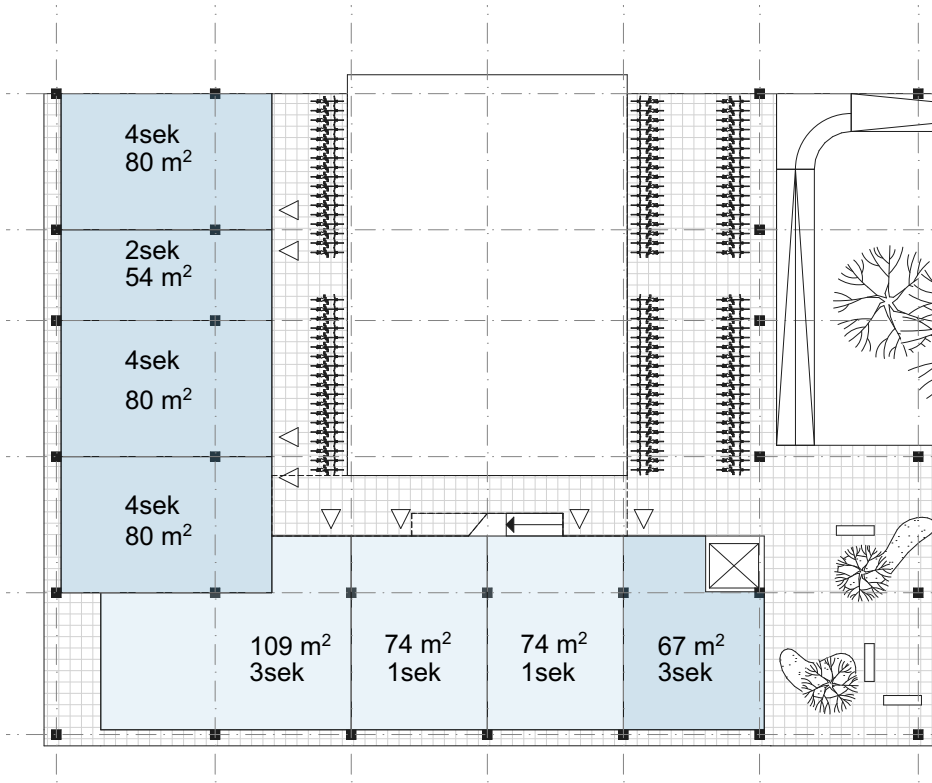
The Beguinage

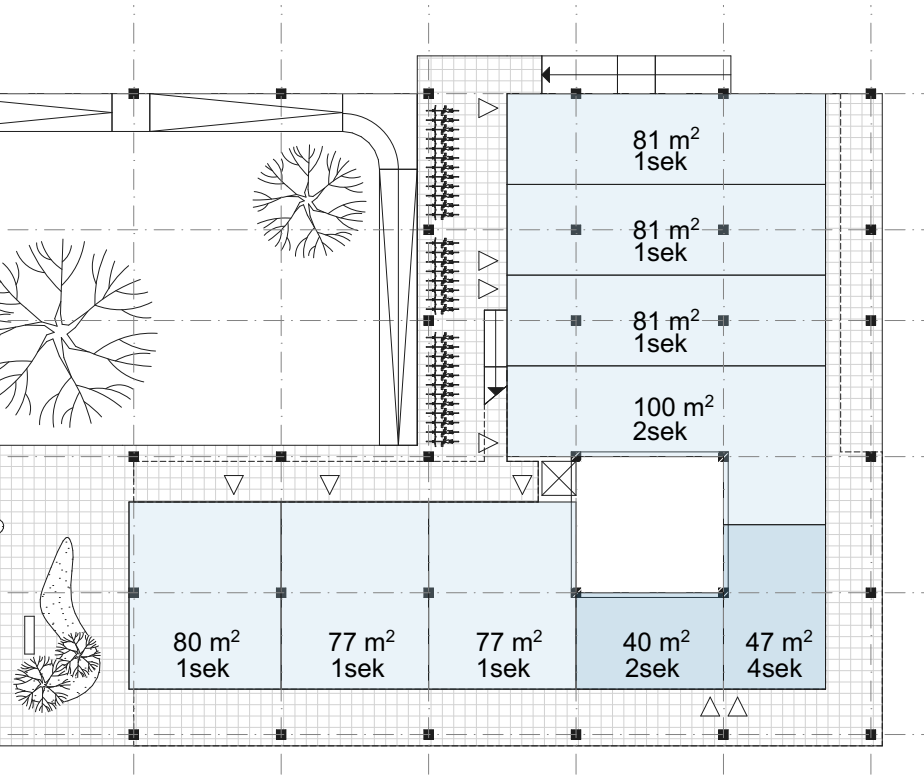
The Beguinage

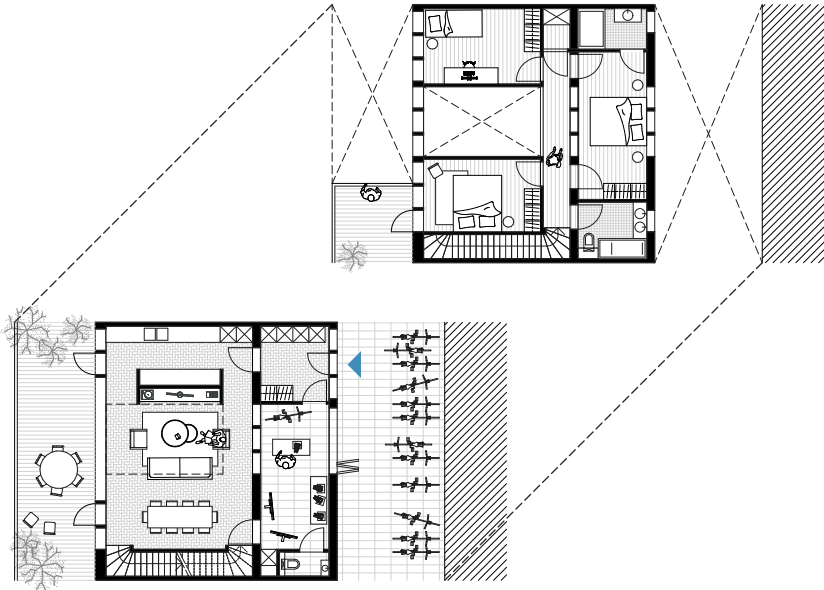
The beguinage is a residential typology that connects to the collective spaces in the heart of the plinth. Its name derives from the way the Beguinages in the Low Countries organized houses around a collective bleachfield; these collective spaces were used by the beguines to provide services to the wider community.

The central, collective space is a 'backstage', in the sense that it is different from a representative 'frontstage'. It is used for tasks like repairing, maintaining, cleaning, and so on – as if it were a contemporary bleachfield.

The residential typologies are interwoven with this backstage area. The dwellings are between 40 and 80 m² brut. Thus, they provide room to one person, two person or even three person households. The dwellings are conceived as houses for artisans and have spaces that can be used for arts and crafts.







House for an artisan

- cheap extra space
- easily accessible (deliveries / guests)
- robust space, can get dirty
- stand-alone space
- optional need for daylight
- optional relationship with home

House for an artisan

The open-air circulation of the beguinage enters the building and encircles the core of the main tower. This creates a deep space void of daylight. This clearance deep inside the whale that is the plinth creates opportunities. The leftover space has the potential to become a cheap, robust room that is ideal for an urban artisan to claim as their workshop.





Front door

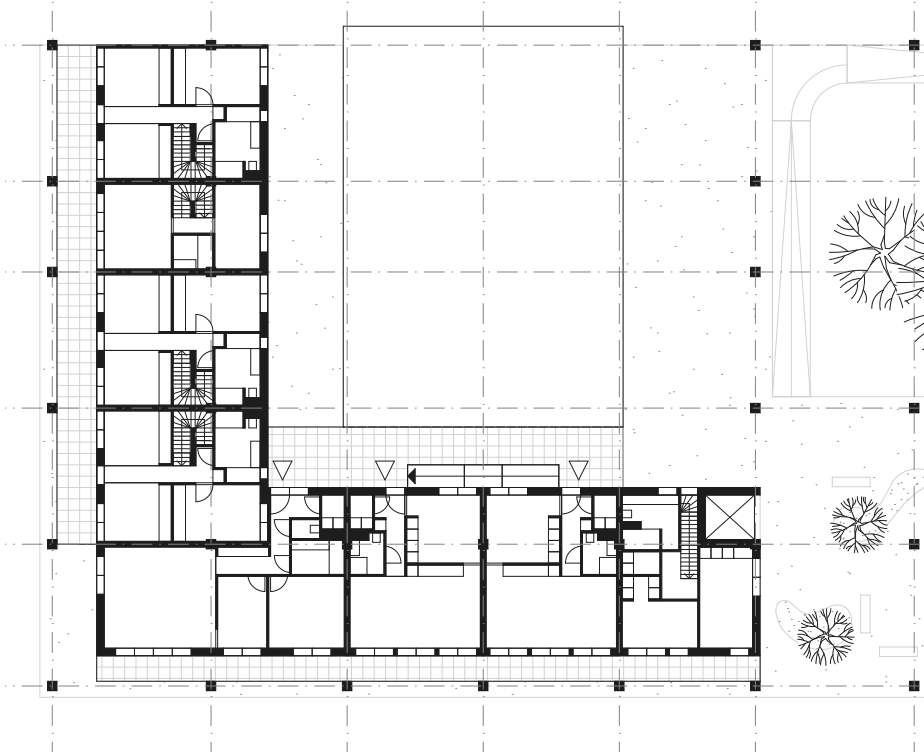
Back door



The front door – back door typology, like the beguinage, is closely attached to the collective spaces of the lively plinth. The typology is quite diverse and combines apartments and duplex apartments. Also in size, there is diversity, as dwellings with one up to four bedrooms can be found here.

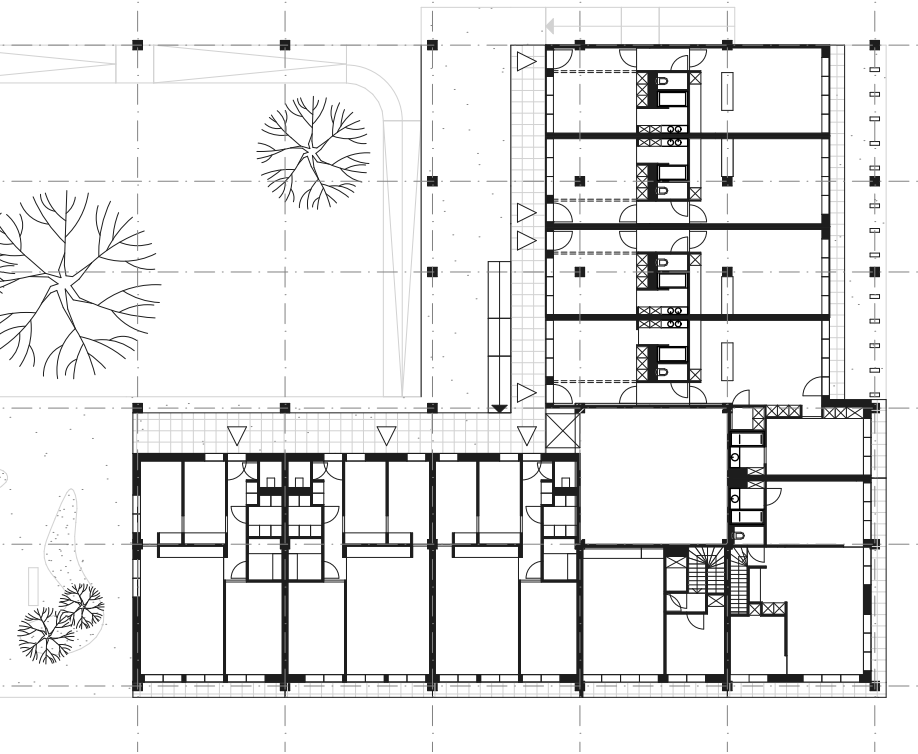
These dwelling have in common that they both orient themselves to the public domain (a front door) and to the collective domain (a back door). Behind the ‘front door’ is the living room. The front door is more of an area than just a doorway; it is a terrace that faces the public domain. The backdoor is reached via the collective spaces, where cycles can be stored and maintained, to give an example of the collective nature of this zone. Behind the backdoor lies a polyvalent space that can be used for all kinds of purposes; storage, working, playing. It could be the working space for an inhabitant with an enterprise, so that the private and the professional sphere can be separated during work hours, while they are joined in the evening hours and in the weekends.

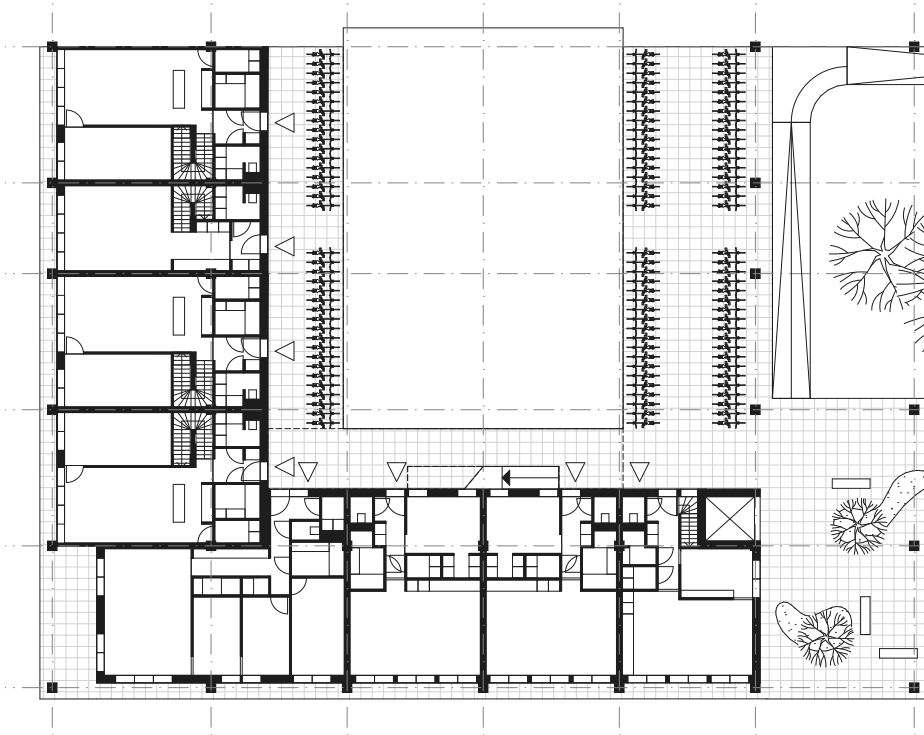
In the case of the duplex apartments, the most private area of the dwelling, the night hall with bathroom and sleeping rooms, is also most private; it is on another floor and can be reached with an internal staircase. In this way, nobody passes by your bedroom window on a collective gallery.



- 7 duplex
- 2 x 2 bedrooms
- 1 x 3 bedrooms
- 4 x 4 bedrooms
- 20 apartments
- 15 x 1 bedroom
- 1 x 2 bedrooms
- 4 x 3 bedrooms

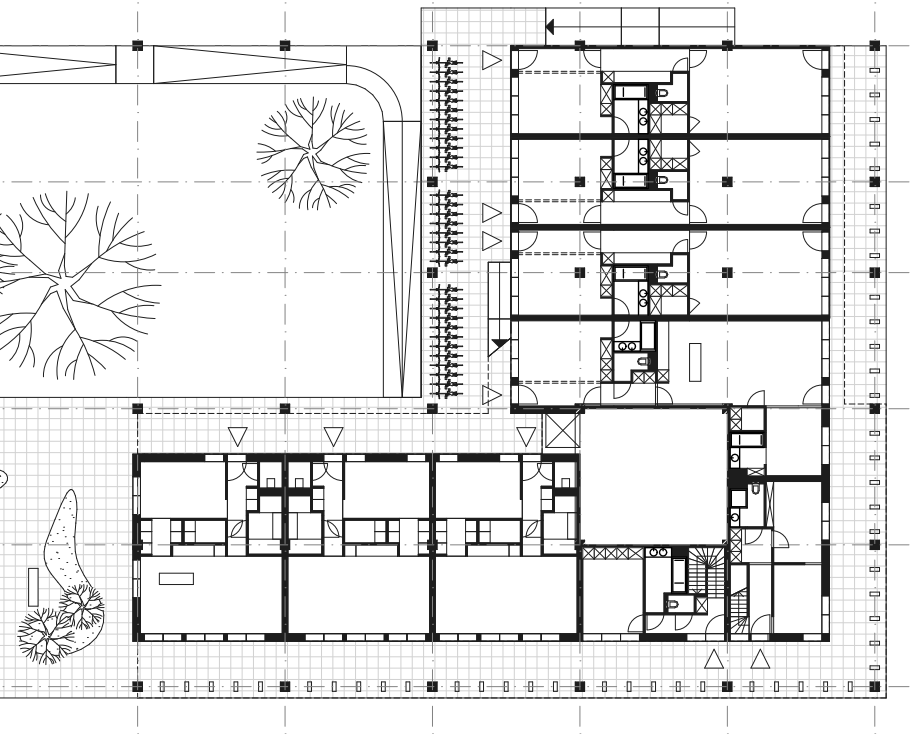
Ground floor





- 7 duplex
 - 2 x 2 bedrooms
 - 1 x 3 bedrooms
 - 4 x 4 bedrooms
- 20 apartments
 - 15 x 1 bedroom
 - 1 x 2 bedrooms
 - 4 x 3 bedrooms

Upper floor



4.

The tower



The Tower

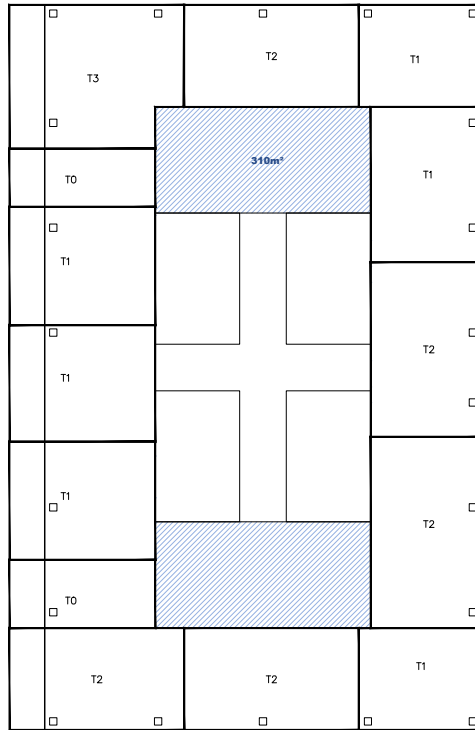
Towers are the face of the intrusive urbanism of the 20th Century, and especially in Brussels, modernist architecture has both been received with praise and with contempt. Many intrusive and large-scale projects ruptured existing urban fabrics and communities. This perception needs to be overcome when considering a tower as a residential environment.

In a positive sense, a tower is a valuable resource for offering solutions for providing affordable housing now that developable land is increasingly scarce. The Labo North posits as a hypothesis for future developments that the monofunctional is replaced by a multi-tenant model which is visible in the plinth of the large-scale buildings. Housing can mix with other amenities and functions. Attention is required to social and cultural dimension of living in a tower:

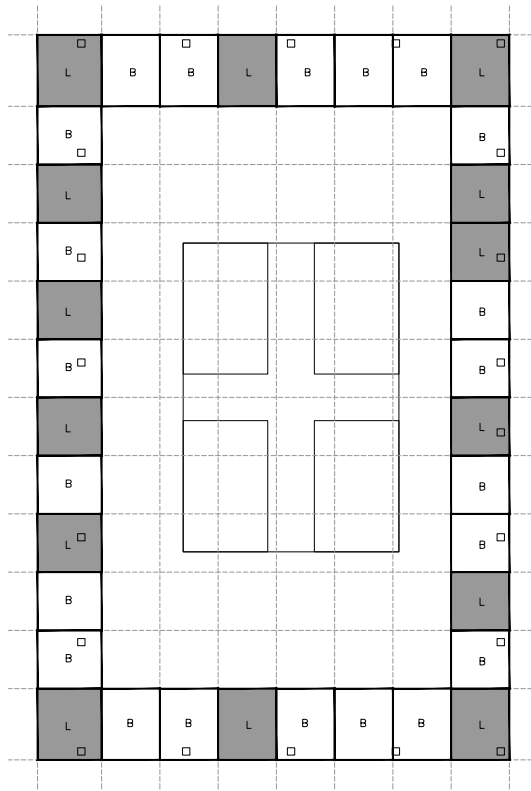
- Good quality landscaping and spaces for encounter
- Residents have self-control in shaping their home
- Residents have a say in (good) management and maintenance
- Residents invest in financial security/independency
- Access to public transport and accessible cycling/walking routes

Green at high levels (above 60m hardly has an impact on the local UHI effect at street level. In comparison to a traditional roof, a green roof offers a lower temperature directly over the roof.

A green mantle (green façade) also lowers the heat in the buildings: researchers report of a difference of up to 3,1°C during heat peaks. Green façade also effects sound levels: ca 2-5 dB noise reduction; intensive green roofs/parks up to ca 10 dB noise reduction. Hence, the benefits of greening the outdoor spaces on the tower rather benefit the housing quality (micro scale) than the battle against the UHI effects on the city (macro) scale.



The current tower measures 30 by 49,9 meters. It has a gross floor field of 1.500 m². The design foresees an extension of the floor field of about 2,5m to one side. That way, the typical floor plan in the tower is quite deep and has a surrounding façade of 165m. If we project, on a grid, living rooms (L) and 1-3 bedrooms (B) per apartment onto the floor plan, we get an idea of the number of traditional apartments that could fit (14 L = 14 apartments). We also get an idea of the space that doesn't have direct access to natural light, and which would serve other purposes. Considering that shared housing could be implemented, the drawing documents a theoretical maximum of collective space servicing the private quarters.



One step further, the rooms on the façade can be extended to whole, traditional apartments. In this drawing, the apartments fill up the space from the façade to the core, which measures 21,2 by 14,8 meters. If we assume the same depth for all apartments, the 'rest space' is reduced to a minimum of 310 m².

This exploration shows that the tower floor offers potential to differentiate this collective space in coherence with the apartments. The potential lies in the ways interesting forms of usage can be projected onto this space. In the following section, tower typologies are proposed that differentiate this collective space and that are organised in such a way to make connections between the façade (light, view, and air), the surface and the core (access and circulation). Hence, diversified clusters of dwellings and adjacent collective spaces are proposed.

The swiss cooperative

In Switzerland, we are used to living in cooperatives. Some were even founded just for women. More than a modern beguinage, they are a building concept to support women. Of course, the contractual agreements are as accurate as a Swiss clock, but if everyone sticks to them, then life in the Swiss cooperative of Brussels is almost as quiet and peaceful as in an Alpine meadow. We share washing machines. No dryers, but we do have a drying room facing south. Wasteful you might think, but it's nice sitting there sometimes with the drying laundry that smells like lavender. Of course, we recycle our waste. We compost the green waste. We have a nice communal herb garden, even a few bushes of small fruit. We also have one big kitchen, with Aga fire. There is always something simmering there, or something's baking in the oven. This is where we celebrate birthdays and other parties. Often, we eat together, to discuss the cooperative tasks. We have set up a music room together. Not everyone can afford to buy a piano. We rent one. On a monthly basis it costs all but nothing, and it is nice to hear music in the common rooms.

The Swiss Cooperative

The typology of the Swiss Cooperative combines, on a typical floor level of the tower, 16 dwelling units. The dwelling units are organized in rows of four, each row along one of the facades. They are organized in such a way that a system of three corridors comes into being as a collective space. Reaching from east to west, two corridors connect two opposite facades. They allow natural light to enter this collective space. The two corridors are connected to one another by a third corridor in the heart of the building, just in between the four central cores of the tower. The space that is left between the cores, the corridors, and the dwellings, and which is not lit by daylight directly, is used for collective services such as a laundry room, a storage space, and a shared kitchen. Such spaces could even become music rooms, well-insulated studios for short-stay, musical practice.

The dwellings units are between 50-54 m² net and are intended for inhabitation by 1-2 person households. One of the key assets is the outdoor space, which functions as a winter garden. Several options are imaginable for organising the spaces around this outdoor space, swapping the bedroom with the living room.

The Swiss cooperative typology is built on the concept of a close interaction between shared and private space. The housing collective 'Mehr als Wohnen', designed by Mirsolav Sik, illustrates this quality. Transparent boundaries between spaces (glazed doors with glazed panels) offer certain transparency that ensures liveliness. Some dwellings share an entrance space with storage room that serves as a steppingstone between the private and the collective realm. Furthermore, Sik's Mehr als Wohnen project illustrates how well-aligned materials and clean materialization make shared amenities legible in the interior.

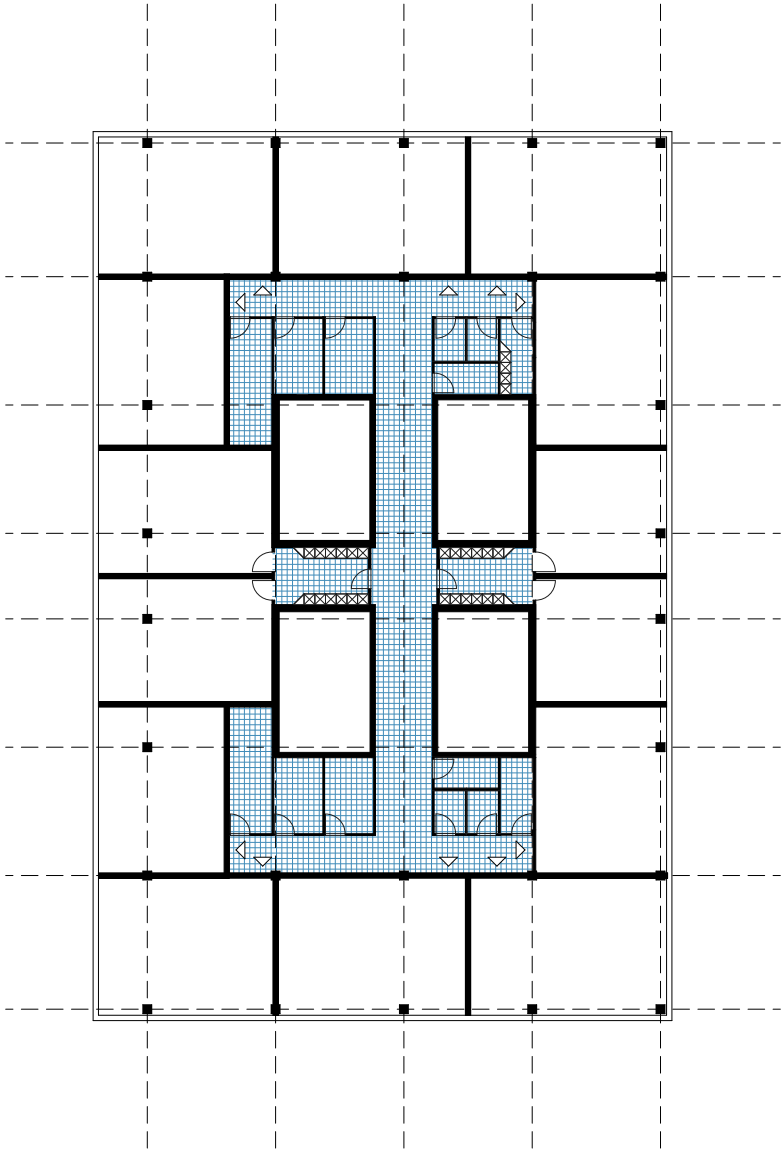




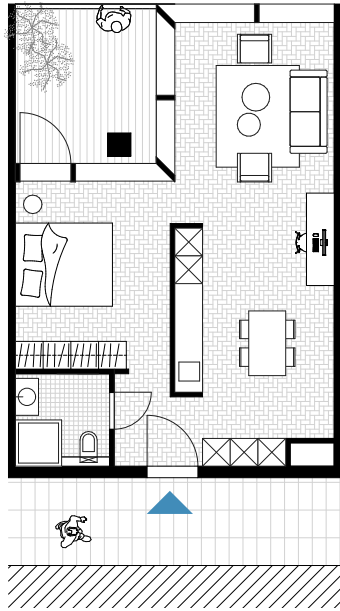
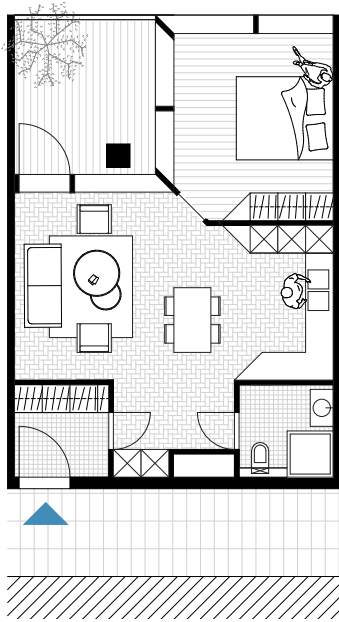


Architekturbüro Miroslav Šik, Mehr als wohnen, Zürich

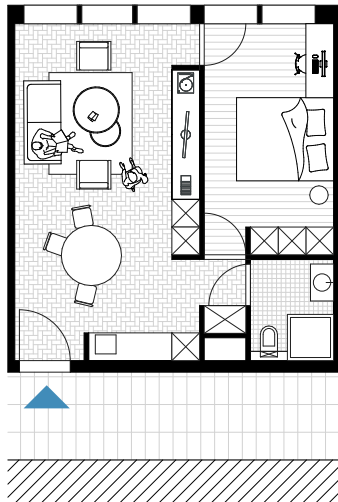
Build a basement in the sky to free space of the facade.



Typical housing plans



62 m² BRUT / 54 m² NET



56 m² BRUT / 50 m² NET



Summacumfemmer, Büro Juliane Greb, San Riemo



Auberge espagnole

We live in virtual communities, but as Brussels is a hub in the world, a place in between where we come from and where we go to, here on this floor, we want to stay for a while. But we don't like to live in a hotel anonymously. But is the spirit of our Erasmus-experience, we want to live together. To have a neighbour who feeds my cat when I'm on business trip. I want to meet my neighbour and have a chat and coffee while doing my laundry. I want to leave behind my books in silent 'library', where I can find some books, I never thought of to read. I live in my small nest, but splendid isolation is not my goal. I need the balance between, being on my own, and to find a neighbour at the coffee machine. It is nice to collect the leftovers of my kitchen and to make humus to fertilise our garden with herbs. This is better than b&b. Here, living is balanced out socially.

Being retired, the city is a good place to live, as all the facilities are nearby. But being retired it is nice to be involved in the life of young people. Taking care of kids after school. Making pancakes together. A big kitchen we share with the young families. And from time to time, the older kids, do some shopping for us. Or I invite them out to join me to the concert. In the library, I see my neighbour kids studying, while I read the newspapers. I can practise my language skills as there are German and Spanish magazines lingering around. We receive youngsters in our silence room, sometimes we use it as a meditation space, sometimes to do yoga or tai-chi. And in the morning, it is a perfect place to contemplate the sunrise over Brussels.



Hunziker Areal, Mehr als wohnen

Auberge Espagnole

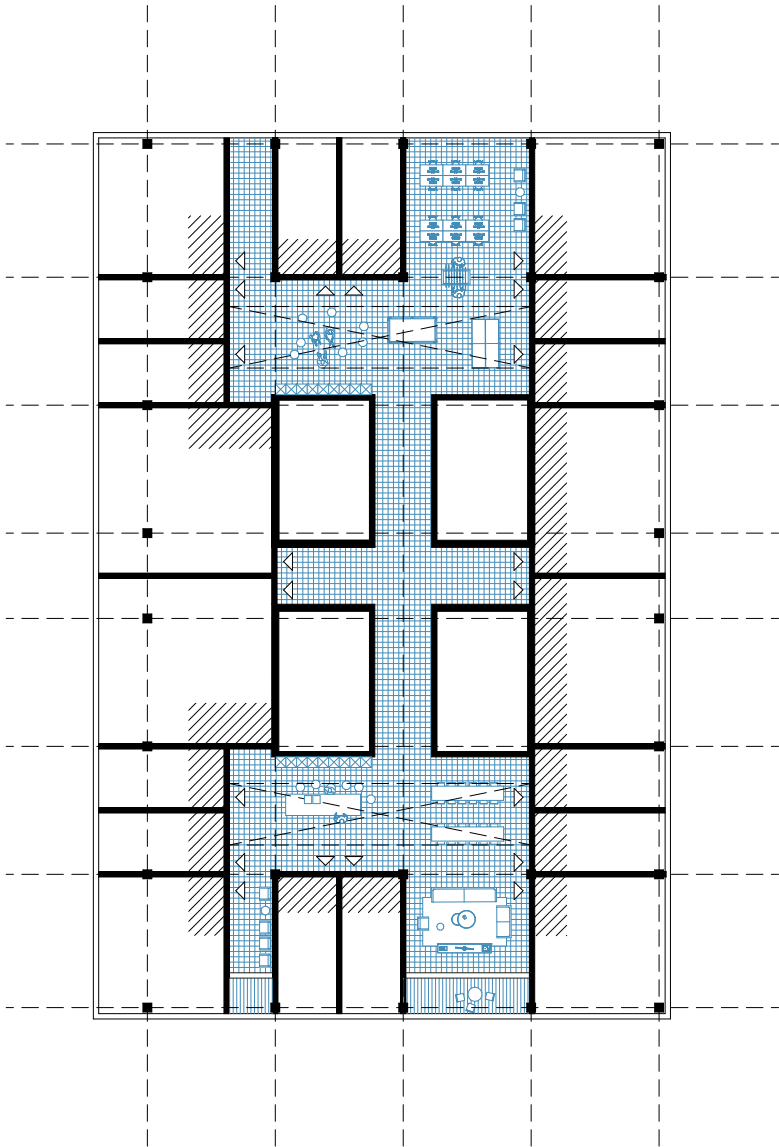
Cohousing can be identified by six common characteristics:

1. There is a participatory process underlying the foundation of a cohousing group;
2. This participatory process also is a prerequisite for the design of the residential environment. And the design facilitates the community;
3. A cohousing environment has extensive common facilities;
4. A complete management of the residential environment is in hands of the community;
5. The community has a non-hierarchical structure;
6. Participants have separate income sources.

How can this concept fit the tower building? Within the scope of this assignment, we can address the way design can facilitate a residential community and in which way it provides common facilities, be they indoor or outdoor.

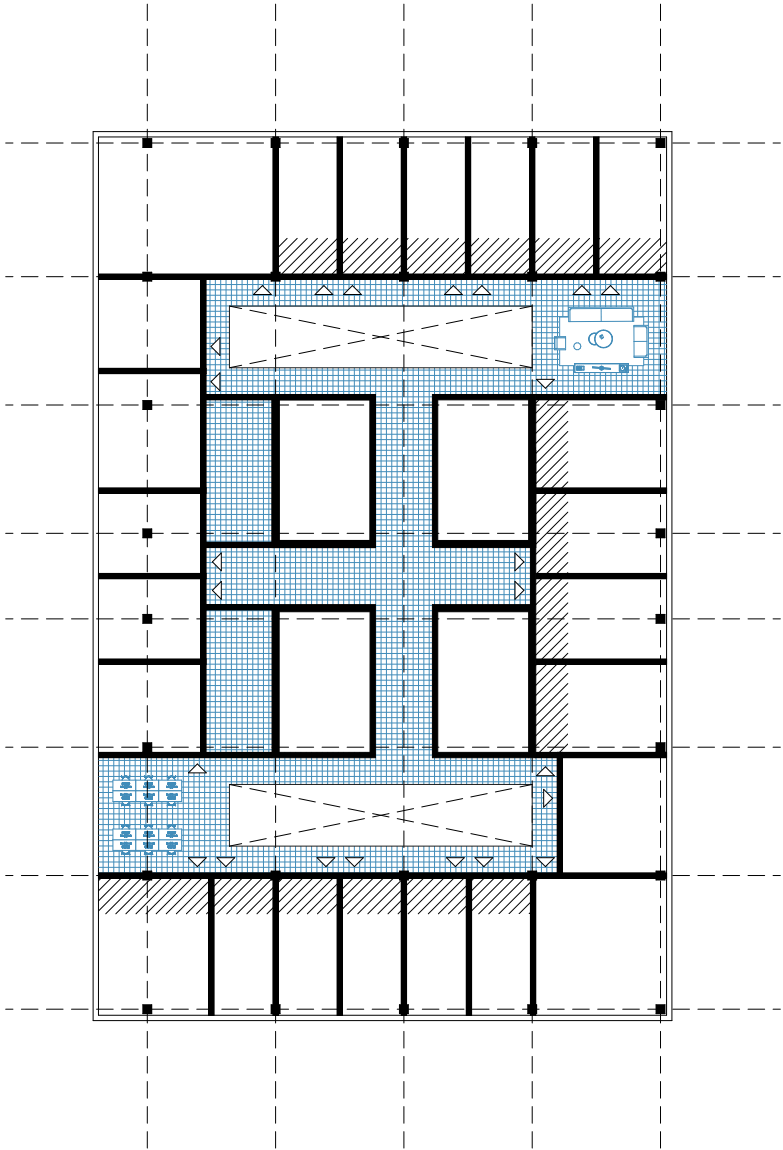
The 'Auberge Espagnole' is a concept of relatively small dwelling units, the most common units counting between 24 -30 m² net. The units are for 1-person households. Conceptually, they have a typological kinship to small residential units like student rooms or hotel rooms. In the light of modernity, they could even resemble capsule dwellings. The units are relatively deep and organized in three distinct zones. The zone right behind the façade has most light and has the living space: A room for sleeping, sitting, talking and desk work. In the middle zone, there is a bathroom and a small kitchen. Lastly, there is an entrance zone with some wardrobe space.

This entrance zone connects to the collective spaces. These collective spaces form a counterbalance to the compact dwelling units. It is possible to extend these collective spaces from the north to the south façade or from the east to the west façade. Either way, ample collective spaces are situated just north and south of

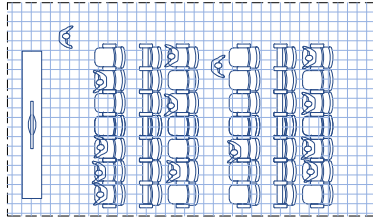


the shaft, receiving natural light. These spaces provide the social spaces, the spaces where residents meet and live together. The spaces cater to the daily needs: kitchen, dinner table, salon, study room, library. In addition, ample space without daylight is available. This can either be added to dwelling units, so that also larger units are offered. Or these spaces can truly enrich the housing quality by offering shared sports facilities, a sauna, a projection room.

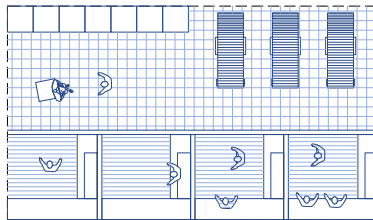
The configuration thus combines dwelling units and collective spaces of various qualities. The cores help in organizing the units in such a way that compartments can be implemented, to limit the clusters to 12 or less units. Equally, the clusters can connect to one another across floor levels. The collective spaces are situated above each other which allows the construction of voids. The voids could have staircases to make them lively or may be used for cultivating plants.



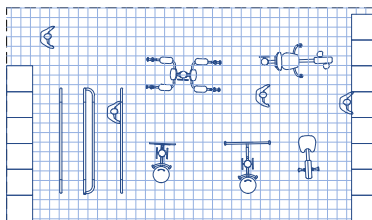
Different activities for the dark spaces



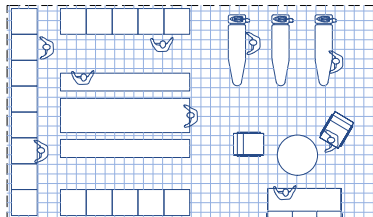
Projection room



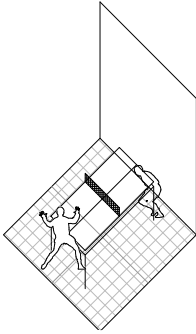
Sauna



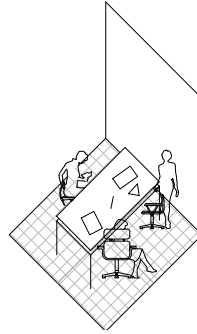
Fitness



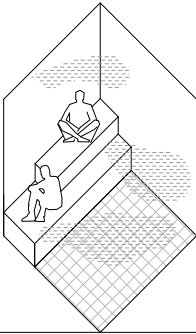
Laundry room



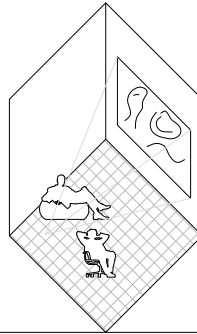
playground area



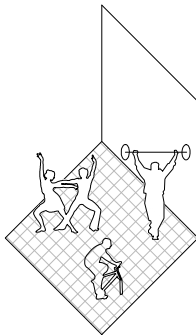
working area



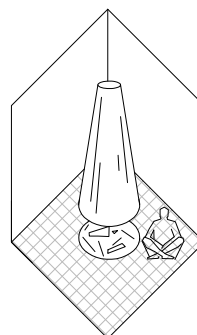
sauna



projection room

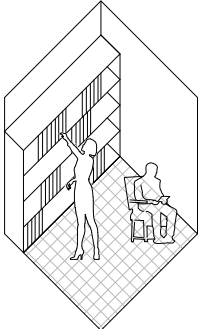


sport

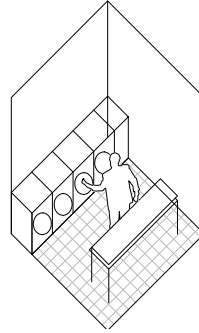


fire / communal oven

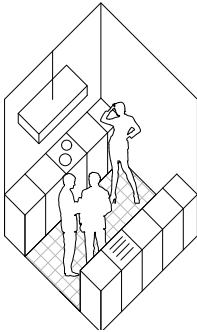
Transcendent commons



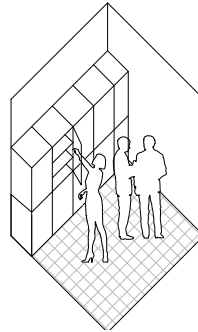
booking



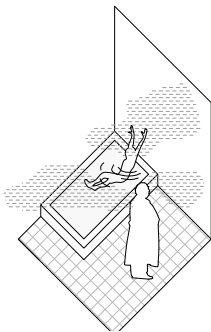
laundry



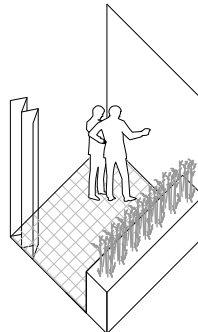
kitchen



storage

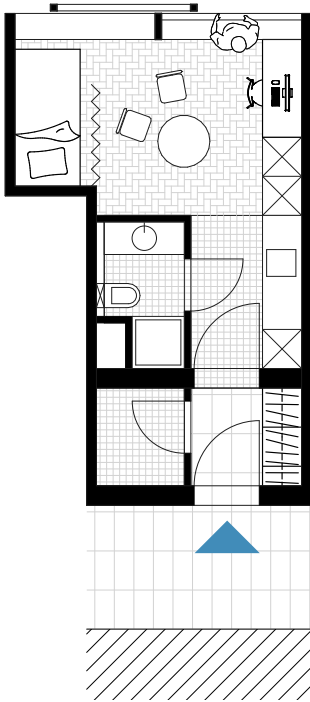


Sauna / onsen

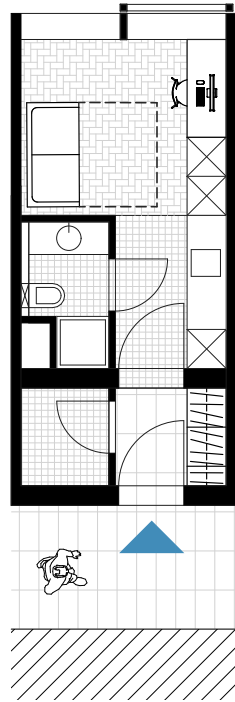


spice / grossery

Typical house plans.



38 m² BRUT / 30 m² NET



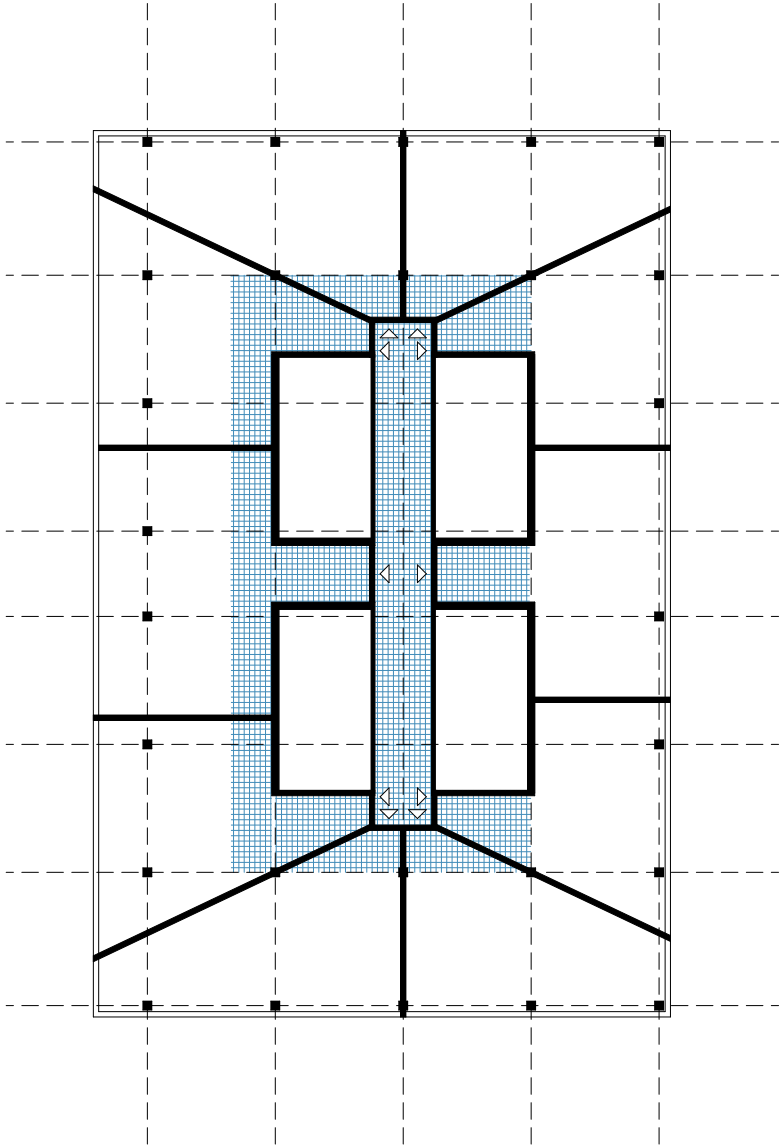
30 m² BRUT / 24 m² NET



Summacumfemmer, Büro Juliane Greb, San Riemo

Plug & Play

*Good day. In Japan, we are used to living small. In Belgium, people live spaciously. Even though the flats are big, here I miss the smell of tatami. I never thought I would find a building in Brussels where a whole floor is equipped with tatami houses, mats and sliding doors, and terraces all around. Awesome! It's obviously not only Japanese people living here, but Western people have taken custom to roll up their beds in the morning, and free up the space to live in them during the day. It's funny but some flats have some dark rooms. They are not used to that in the modern West, but us Japanese like that. Tanizaki wrote that wonderful little book about it, *In Praise of Shadows*. Bathing in semi-darkness, the toilet in a corner of shadow. I love that the floor also has an onsen, a real hot spring, where everyone can take a bath together. Much nicer than such a sterile, hospital-like shower. The integrated pond with Koi fish completes the whole. Even though the dwellings are small, the spaces between with small courtyard gardens breathe the atmosphere of Kyoto. The wood, the paper walls... the rice mats. And if you want, you can slide away all the panels and you have one big space. Zen!*



Plug & Play

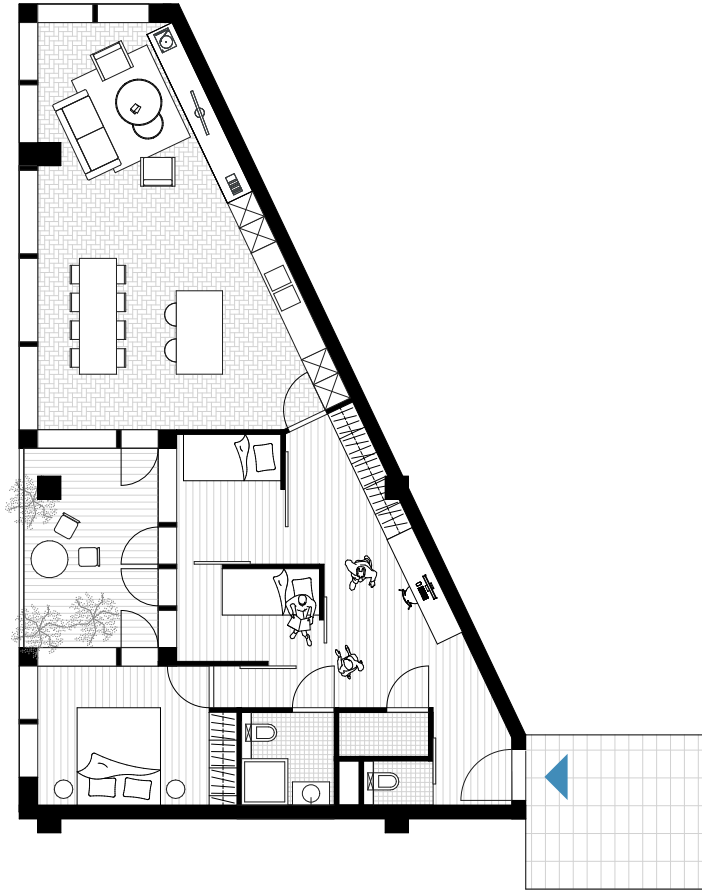
Housing a family, a household with children, poses challenges in the city. Many households make the move to suburbia in search of privacy, safety, and sufficient space. The compactness and density of the inhabited PXS tower provide completely different starting points for design. Urban housing for families should offer other complementary qualities, should not copy suburbia.

The 'Plug & Play' typology is the result of a search of how this 'otherness' can be given shape. In answer to the suburban world, it is based on the following features that are commonly found in strong collective housing projects. Firstly, the dwellings have compacted and sheltered private outdoor spaces, which are given shape as loggias. Secondly, it has functional and compact collective spaces, and generous collective courtyards. Thirdly, there is a clear distinction between private zones and collective zones – none of the outdoor spaces have visual relationships with each other, the collective courtyard and the loggias are very different in organization and accessibility.

Moreover, as the typology name also indicates, this dwelling typology offers a quick start for new inhabitants, but equally offers some room for interpretation, lending the typology some flexibility.

On a typical floor plan, the Plug & Play typology is facilitated by a minimum of corridor space, taking shape as two axes through the core of the building. These crossing corridors give access to 12 doors. The typical plan included illustrates that behind those doors lie 11 dwellings and one collective courtyard. Walls are placed diagonally to connect the entrance area to the facades, where the main living areas are situated. The living room has a direct connection to the façade, while more private living spaces – the bedrooms – are organized around the loggia. The diagonal wall, dividing the dwellings, provides relatively large entrance and circulation spaces. These can be used in a flexible manner, for example as an office space or a play area, if the sliding doors between the hallway and the (bed)rooms are opened.

Typical housing plan.



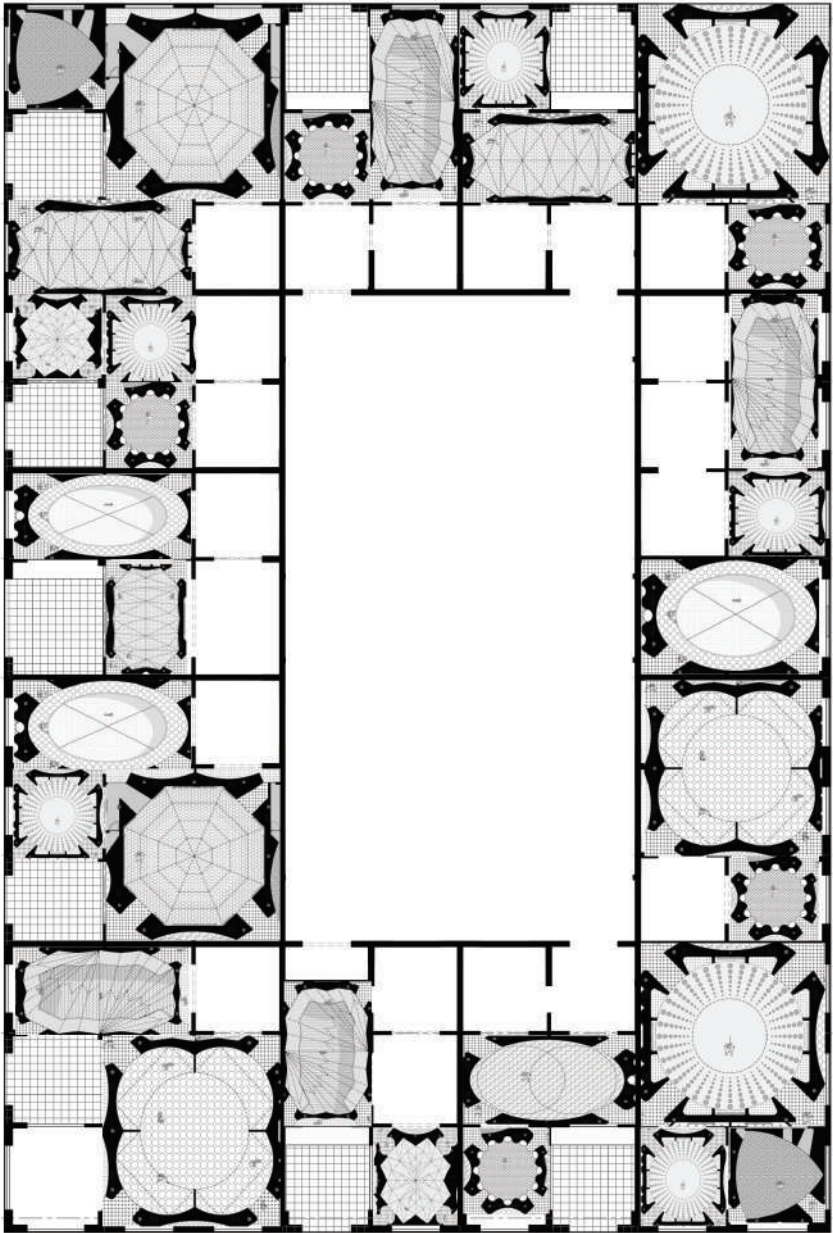
116 m² BRUT / 101 m² NET



Chayamadai Danchi Housing, Studio Rakkora, Osaka

The Palazzo

My house is my castle, where I can live with my collection of art. I used to collect cars, and I kept my favourite old timer. From time to time, I sit after the wheel and have a nap there, or I listen to my favourite music. But thanks to the random daylight, my apartment is the perfect threshold of my artworks. I thought of turning my house into an art gallery. Maybe I should buy also the apartment left and right of me, so I can enjoy the sun in 180°. My friends love to come over here for parties. My piano room fills the whole floor with live music.

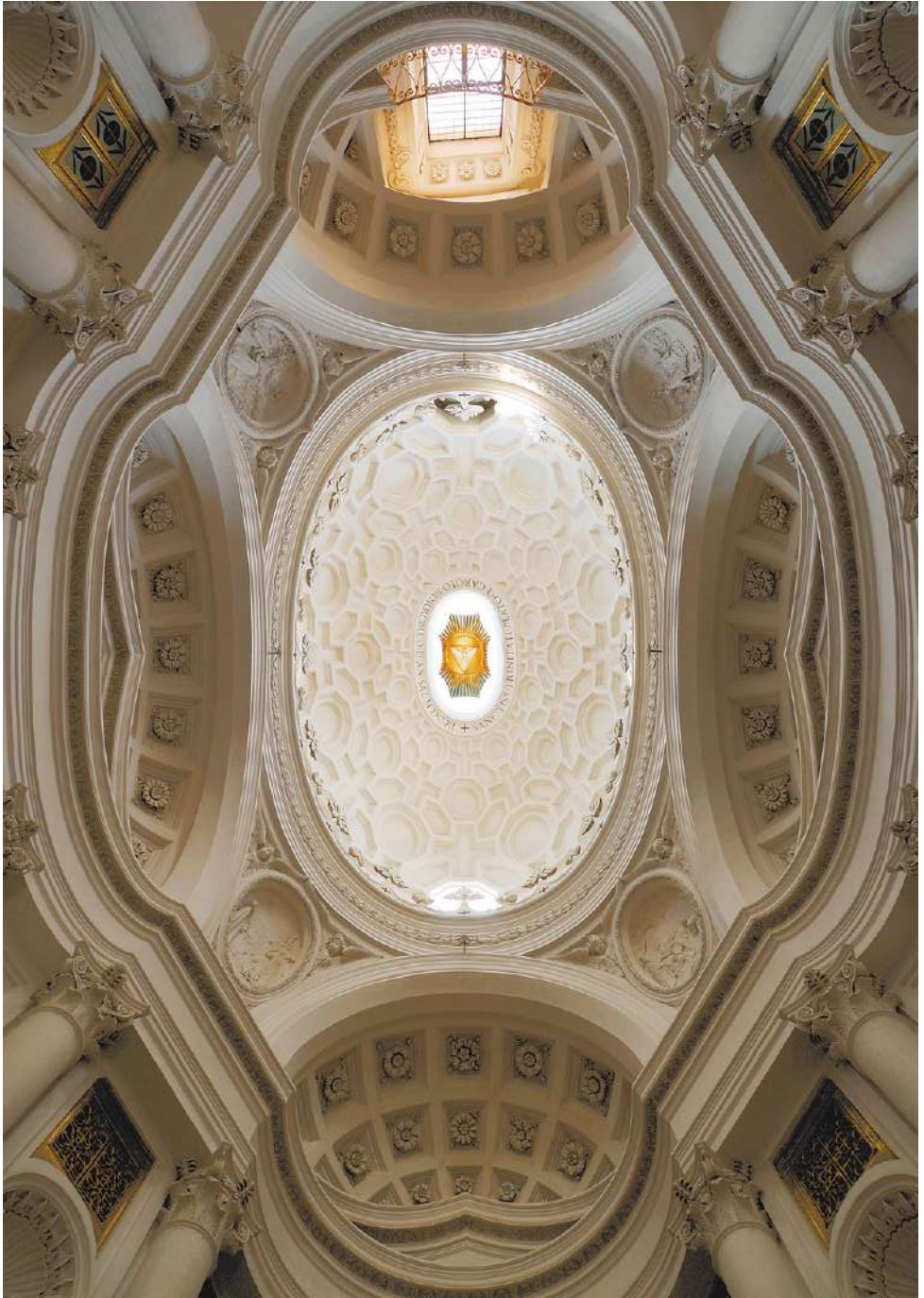


The Palazzo

Household composition in Belgium has become more diverse. Households also develop in a more diverse manner, and expandable/ flexible dwellings are needed to respond to the changing needs of such households. Each intervention in a dwelling goes together with demolition, transportation of and investment in new materials, while old materials are reduced to waste. Traditional forms of renovation and home expansion aren't suitable for tower living. Introducing circular building concepts from the outset potentially contributes could prevision and facilitate future developments of those people that prefer home adaptation to moving. Circular building concepts limit the environmental impact and foresee affordable scenarios for future transformation.

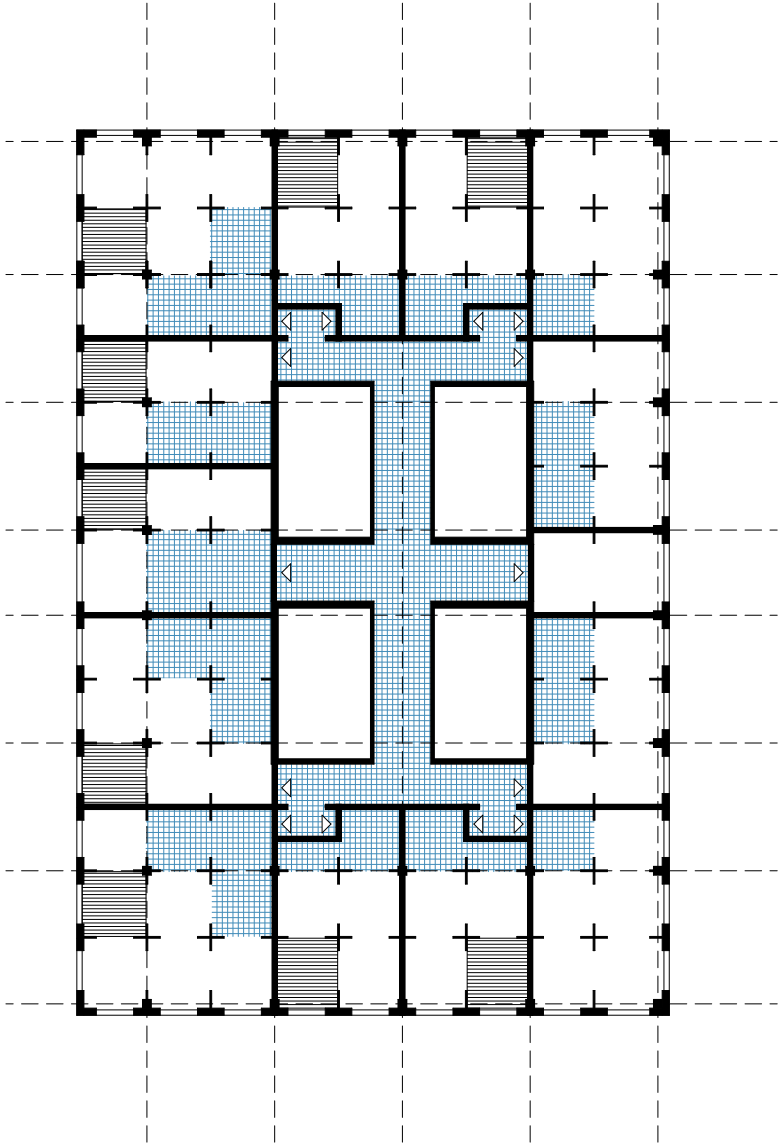
At the core of circular building is the distinction between separate building layers such as the load-bearing structure, building shell, interior elements, and installations. The palazzo typology provides a clear and visible distinction between structure and interior. The structure is based on a grid that subdivides the space in between the façade and the four cores into squares of approximately 3 by 3 meter. The structures of the façade and of the walls separating the dwelling units are fixed and define the spaces for living. The intersections of the dwellings are marked by two walls that form crosses in the plan: together with the square columns, they materialize the grid.

The units consequentially are very open in plan and can be appropriated and organized by the inhabitant. Typically, spaces that have less need for daylight will be near the core, while living quarters are near the façade. One of the quarters is used as an outdoor space. Grace to the open plan, daylight also can reach the quarters in the heart of the building. Access can be arranged using flexible separations, like sliding doors or curtains.

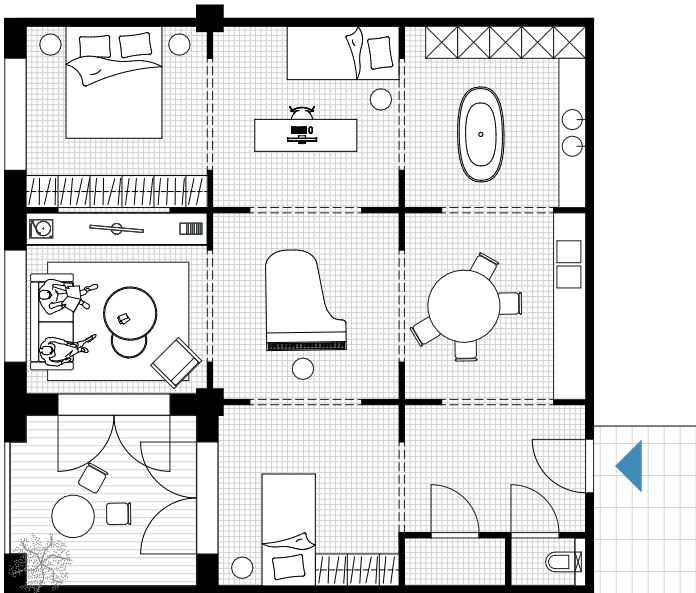




Dwellings in Cornellà, Peris+Toral arquitectes, Spain



Typical housing plan.



107 m² BRUT / 100 m² NET

Pagnol

Pagnol

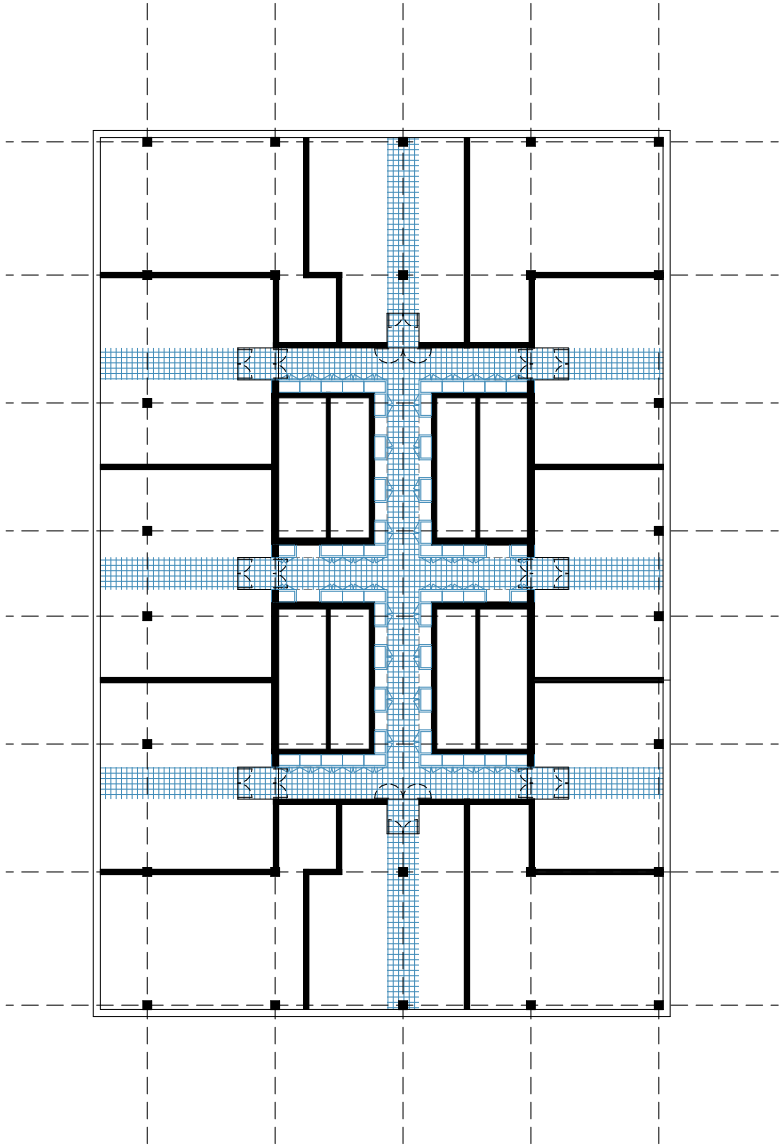
This is a typology that intends to create a zone within the dwelling that has a tight relationship with the adjoining collective spaces. The zone is inspired by the *porte cochère*. Intended as a gateway for coaches in town houses, the *porte cochère* is a space with two doors that arrange a gradational entrance to a house. The gradation can be manipulated by opening and closing the two doors on each end of the *porte cochère*. Its recognizable presence in the French (urban) landscape has resulted in the nickname Pagnol for this typology, after the French director Marcel Pagnol.

A typical floor with Pagnol dwellings is organized by zones that stretch from one *façade* to the opposing *façade*. In the heart of the building, these zones are collective spaces for circulation. The dwellings are separated from the collective zones by double doors. These doors, made out of transparent or translucent materials, allow light into the collective spaces. When both doors are open, a person standing in the collective space can look through the window in the *façade*. Behind the doors, there is a zone that is rather open and in close connection to the collective space. It is used for activities that could be within the sphere of the household or within the sphere of the collective: sitting, talking, eating, caregiving, watching tv, playing games, indoor gardening, and so on. If the doors are open, you can come in; if they are closed, the area is sealed off and is part of the private life of the household.

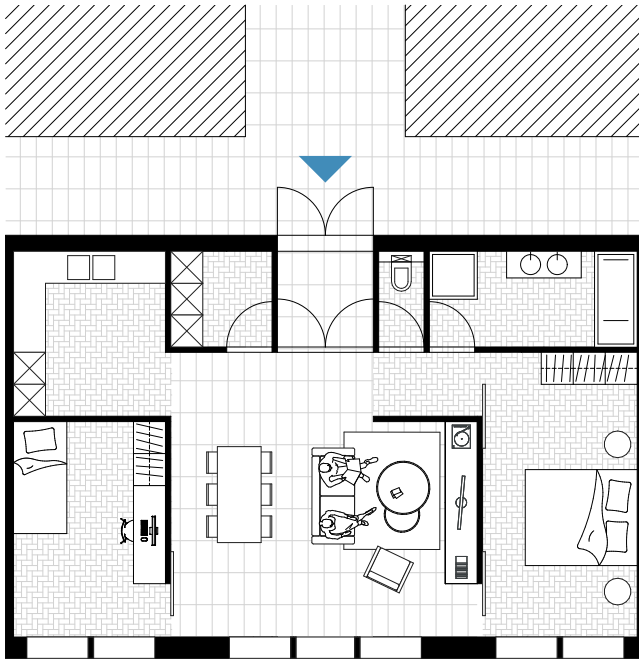
The most private and practical areas of the dwelling are out of sight: the bathroom, the sleeping area, and the kitchen. With interior elements, the distinction is made visible. Closets, sliding doors and wall panels help to form a flowing space. The materialization of the '*porte cochère*' zone is in line with the materialization of the collective spaces, so that this game of inclusion and protection can be read from the space.



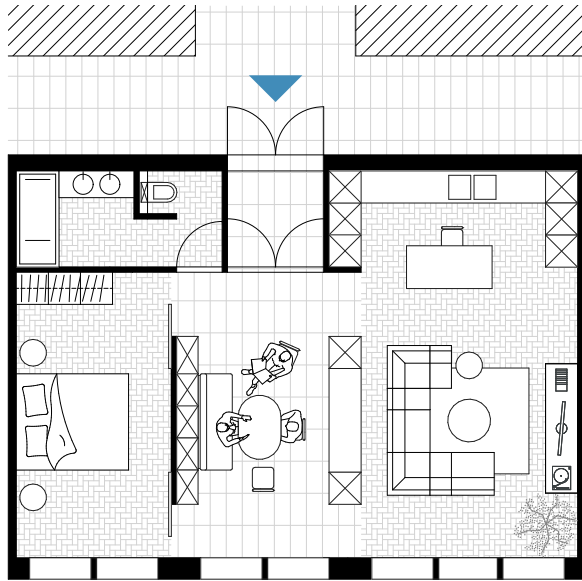
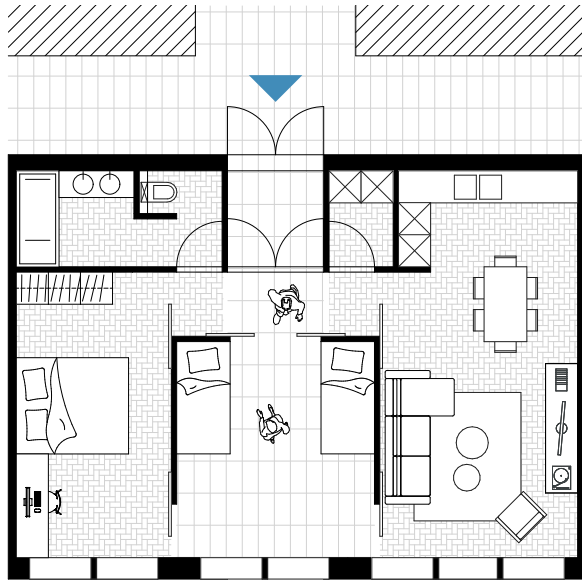


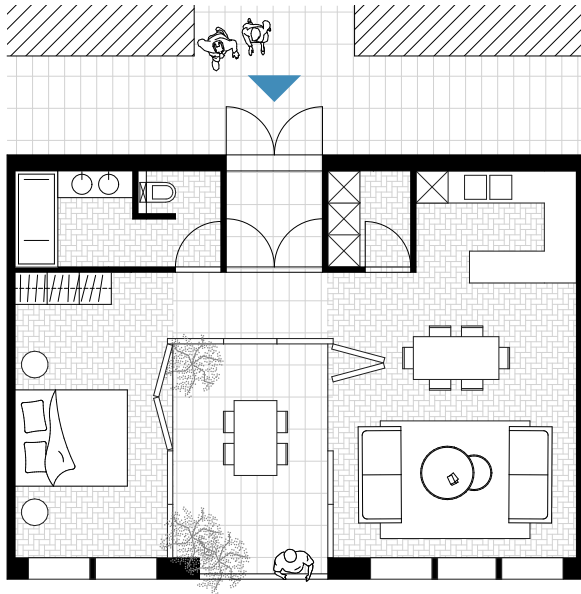
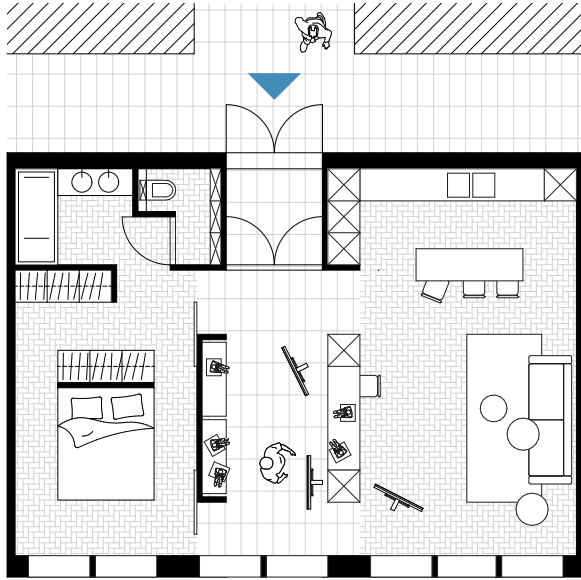


Typical housing plan.



82 m² BRUT / 76 m² NET





Bow Window

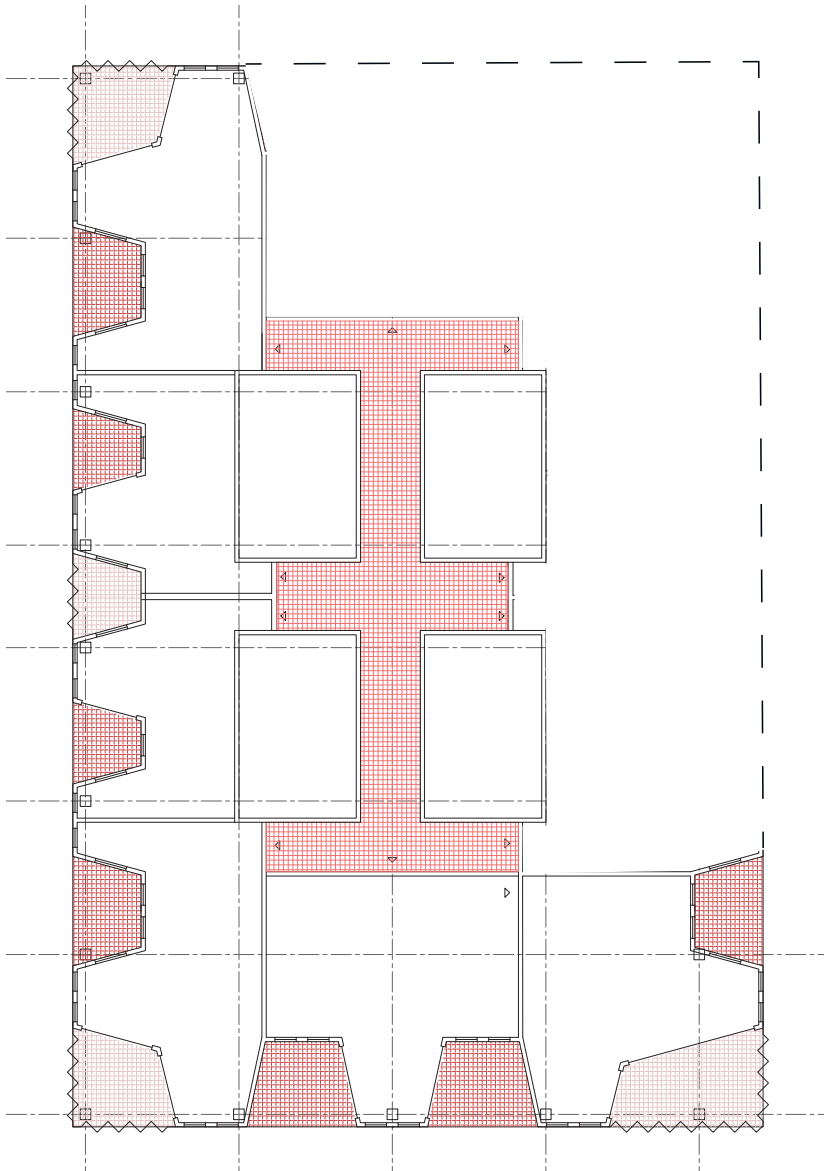
Bow window

Tower buildings, skyscrapers, are among the largest buildings that architects design. As Rem Koolhaas pointed out in *Delirious New York*, architects are challenged to sculpt the tower into a form that allows the entrance of light in the street level and in the building itself. The sculpting renders the tower into an urban figure with a base, a shaft and a crown. Hence, traditional design approaches from the European city are translated from smaller buildings to the large towers.

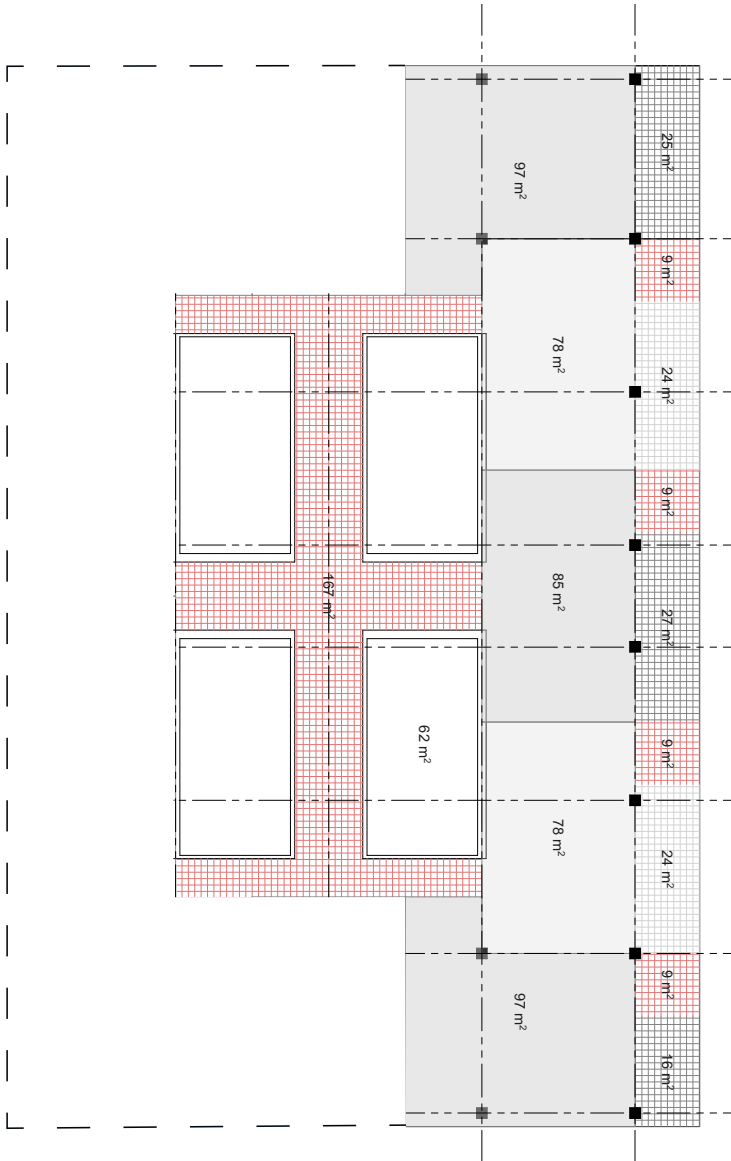
A meaningful manner of connecting the tower sculpture to the useability of the tower is to design a profiled façade. On the level of the building, a profiled façade helps to achieve a visually interesting outlook, grace to dynamic of light and shadows. Early 20th Century, Auguste and Gustave Perret used – at the time – novel building techniques to create such profiled facades in Parisian apartment buildings, like in their building on Rue Benjamin Franklin or the Immeuble Raynouard. Floor fields receded when moving up, and the typical floor plans were equipped with bow windows. The bow windows made the façade livelier. On the inside, the bow windows let the light into the dwelling.

The Bow window typology on a typical floor level is determined by a meandering façade that defines the bow windows for apartments. Between the bow windows, spaces are left for loggias and terraces. As a variation, the terraces can also be extended along an entire façade. The design architects can use this typology to sculpt the crown of the building and relate the sculpture to suitable dwellings.

South West facing housing.



Northeast facing housing.







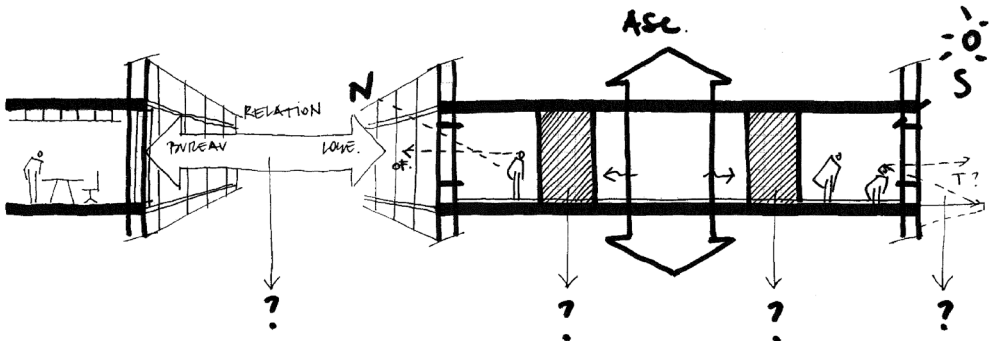
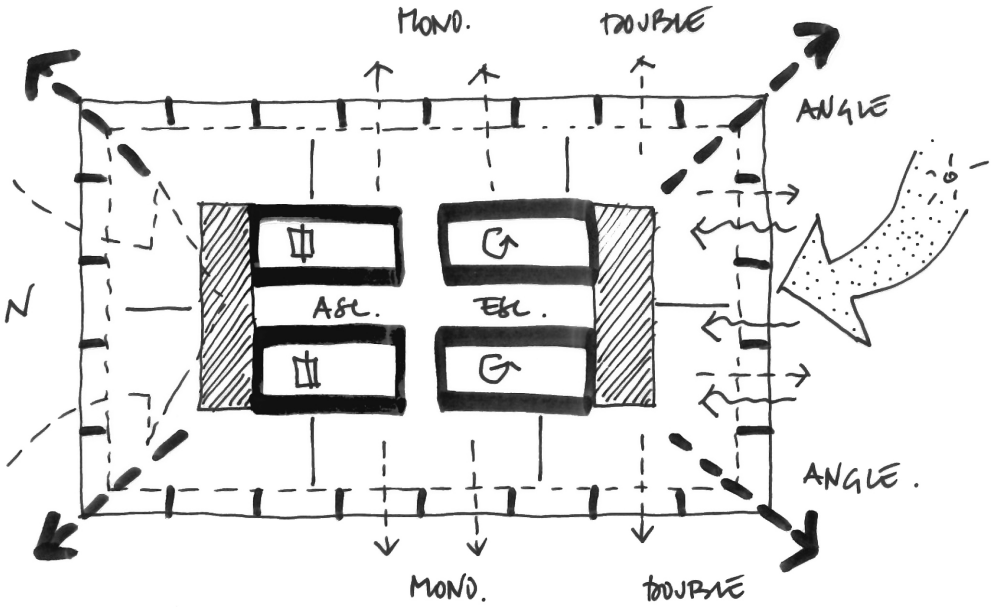
Typical housing plans.





5.

Making the link

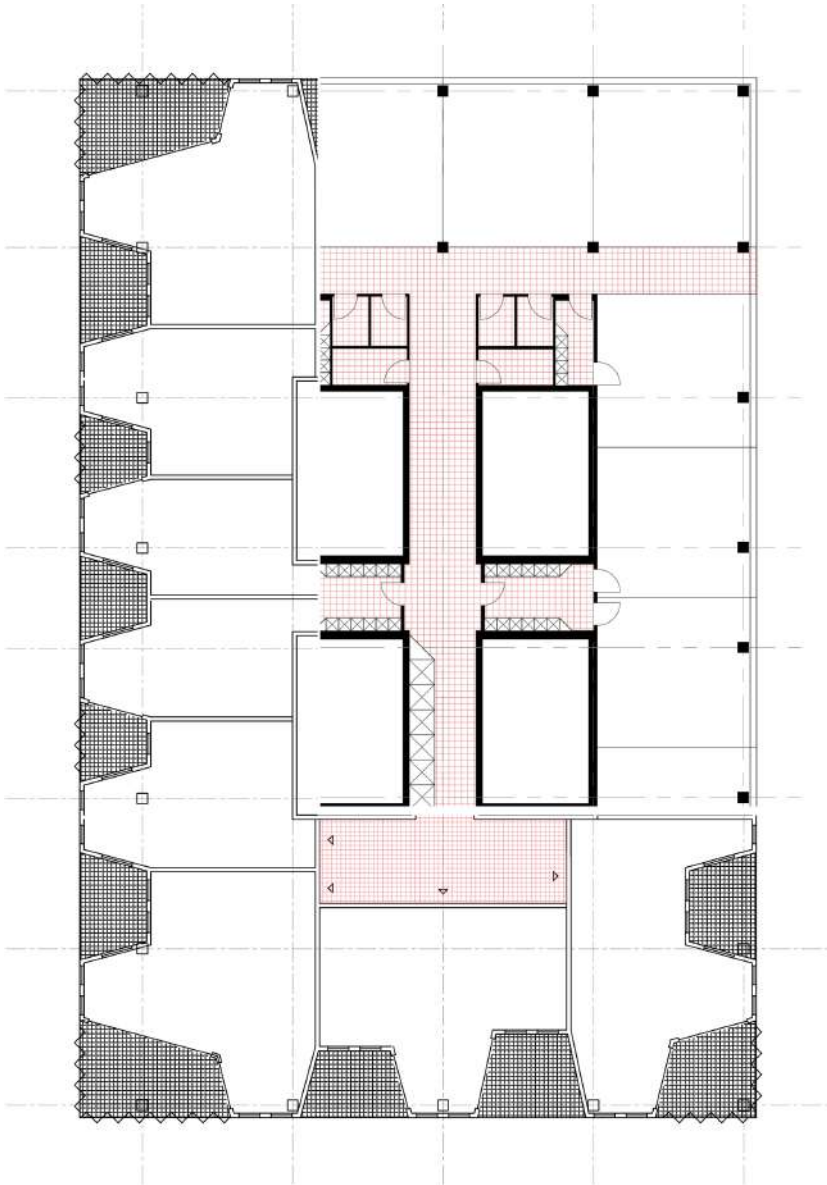


Mix & Match

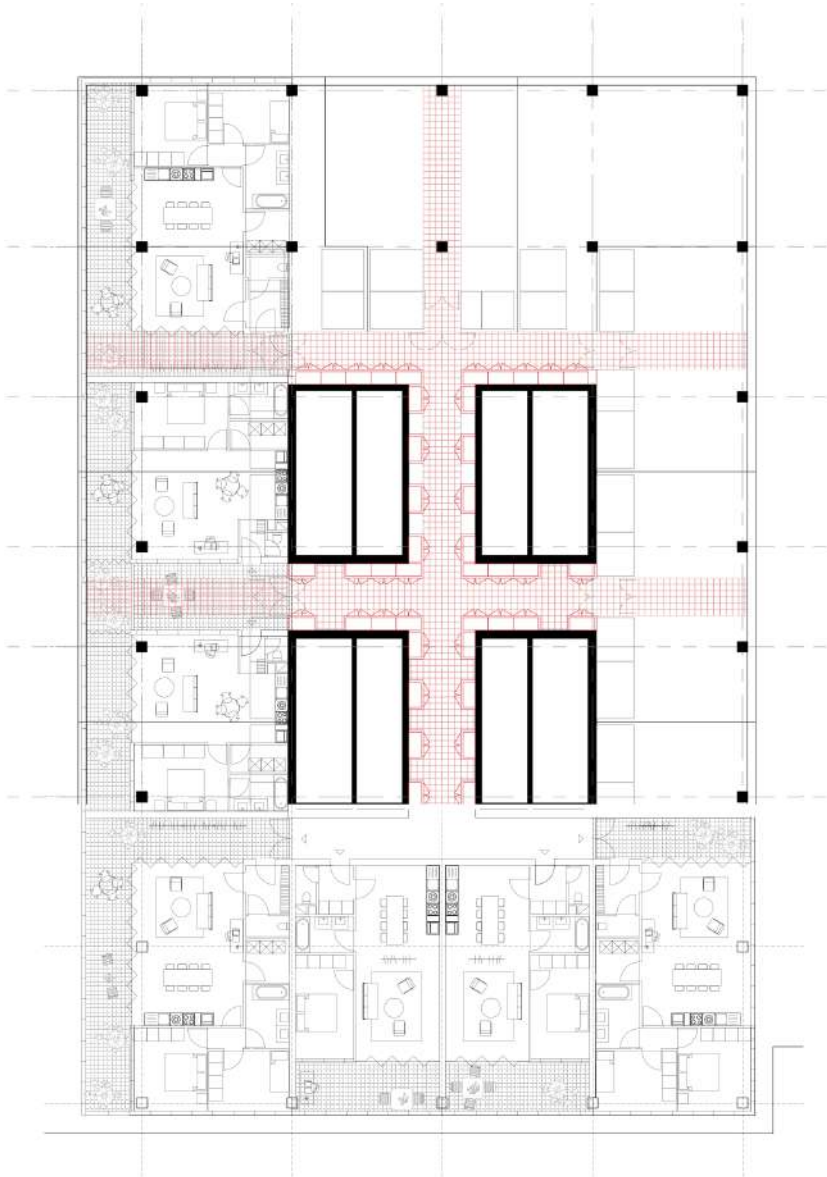
The PXS tower currently orients itself to all four directions in the same manner and with the same façade system. The preliminary redesign from which this research has started maintains this all-sided orientation. However, the situation that the tower will be inhabited requires an approach to provide good lighting, views, and privacy to all dwellings (think for example of the relationship that will exist between the dwellings in the tower that have a view toward the other tower that will remain in use as an office building). Considering the need to provide everyone with 'Good Living' conditions, The design architects should be able to mix and match the housing typologies and the shared spaces that support them to compose the residential tissue in the tower. This chapter demonstrates some samples of how floors can be composed out of the diverse housing types that were designed.

Using this method, the design architects can differentiate the facades towards all directions; can combine collective and private spaces to enliven the design and to optimize residential quality for all inhabitants.

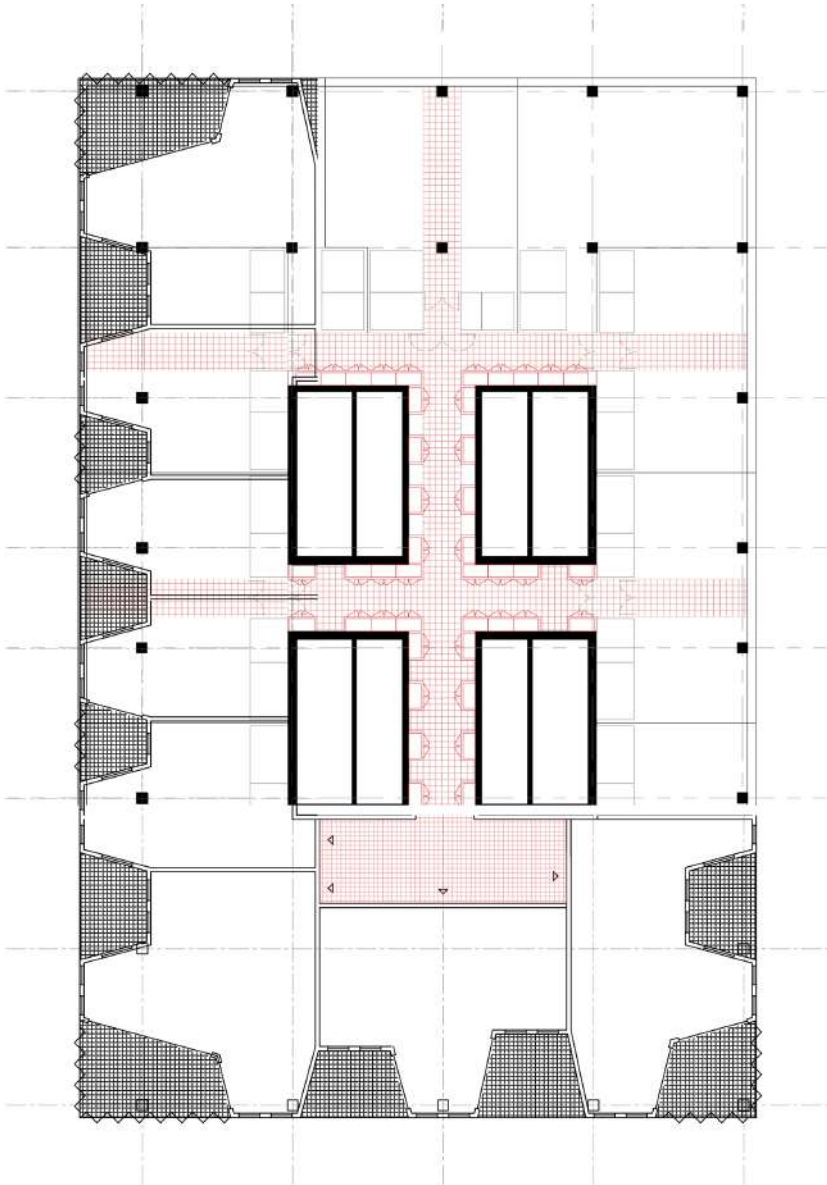
Bow window + Swiss cooperative



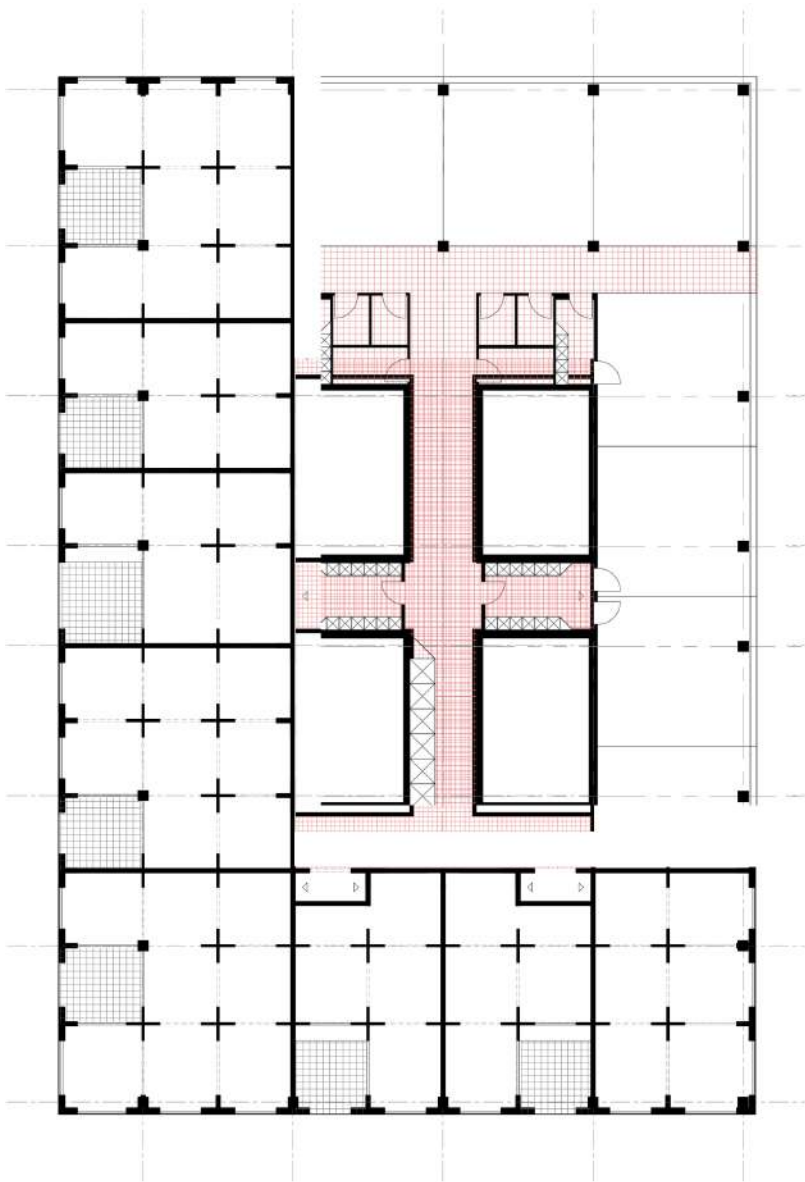
Duplex + Pagnol



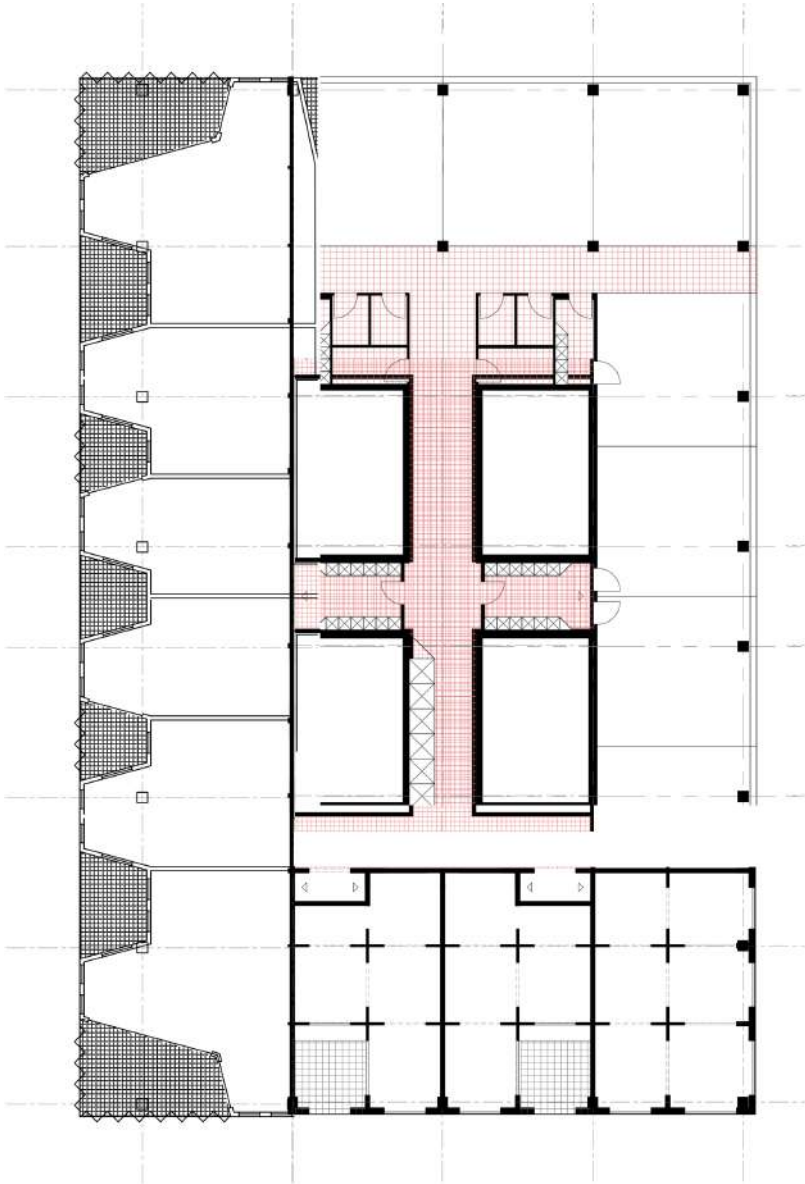
Bow window + Pagnol



Palazzo + Pagnol



Bow window + Pagnol + Palazzo





Scaling Up

Evaluation of the design research

The design research addressed the question how to implement innovative housing typologies in the plinth and in the tower, and how these dwellings could relate to public space and to shared or collective spaces. The typologies which were presented in the previous chapter are differentiated in the way they relate to collective spaces. Collective spaces and dwellings together give conditions for sharing spaces and meeting with neighbours. The design approaches the surplus space of the former office building by offering services and areas which enrich the daily life of inhabitants. They are open to appropriation and interpretation which is illustrated in drawing and in writing imaginable narratives about how people could live in the tower. The design research is organized as a design toolbox which the design architects can appropriate. The design approach potentially can be upscaled to other office buildings in Brussels.

To evaluate the design assumptions and the potential for upscaling, the concepts have been presented to and discussed with expert respondents in two meetings. The first meeting was organized on 30th May at Perspective.Brussels with project managers of team Territorial Strategy: Pierre Lemaire, Léone Drapeaud and Mathilde Berlinger. This meeting was organized to develop better understanding of the social dynamics and planning perspectives in the North Quarter and of the wider challenge of transforming office buildings to residential projects. The second meeting was 16th of June at Community Land Trust Brussels (CLTB) with project manager Anne-Laure Wibrin. This meeting was organized to develop better understanding of the way people organize themselves in collectives to answer their own need for housing, and to establish in how far collective housing groups could be interested in transforming office buildings for their own housing need. The meetings were prepared with topic lists and slide shows of the design research and took between 60-90 minutes. The results are discussed in relation to the three central topics culture and demography, multiple housing, beyond the dwelling as a product.



Culture and Demography

Team Territorial Strategy (TS) foresees that a significant part of the housing demand in Brussels can be answered in the North Quarter. This will take pressure off dense neighbourhoods, as in the business district, residential density is still rather low. On a 10 year horizon, multiple projects will make the quarter more lively. It will be crossed more often grace to the new tramline. New projects for the Maximilian Park and for Kanal – Centre Pompidou, will offer attractors to the Quarter. Today, it is a dead end, but it will become a more visible area with its own identity and attractors.

What occurs is a process of gentrification. TS emphasized that the North Quarter will always be a 'train station neighbourhood', which somewhat resists gentrification. An area with action, liveliness and surprise. It will never be a neat, quiet and smooth area. What must be prevented is that people who live there already will feel excluded from new amenities and spaces. To this end, public amenities that are widely accessible are needed to make a bridge between the new and the existing population.

A great challenge lies in the problem of perception of those who will come to live there. The upside is that new population comes in and will make the area, its public domain, livelier. At the same time, the reality of the neighbourhood as it is now will not just go away. There are issues with drugs use in the area. Refugees still camp in the Maximilian Park. People that want to move into the tower will need to be made aware of this condition, but often you see that a problem of perception arises with people moving into an area with such challenges. There is need for building mutual acceptance between newcomers and residents.



Can the complex offer existing residents something to their benefit? Educational or health facilities could bridge the gap. Also, the maintenance of connectivity in the neighbourhood is important.

If we scale up his transition, what is going on in the North Quarter, the neighbourhood will change fundamentally. TS sees the emergence of pockets in the urban tissue: The already existing pockets of inhabitation, such as Saint-Roch, have their own identity. A project like the PXS housing will add, in contrast, a pocket with a more metropolitan lifestyle. What needs to be prevented is that dichotomies come into existence between present and future inhabitants, segregation should be prevented. Community Land Trust Brussels (CLTB) sees office transformation also as an option for their clients. **These are people with small budgets that want to live close together. Perhaps they can also find place in a tower like the PXS. But CLTB warns for stigmatization if a group of people (lower income brackets, ethnically mixed) come and live there in a building which for the rest is about high-end living in a luxury environment.**

Multiple housing

TS agrees that a good mix of housing types is a key challenge. A high diversity of housing types, in this building, or in other buildings, makes integrates the whole into the city. Especially the plinth would also benefit from this. **In the viewpoint of CLTB, a floor level with well-defined collective spaces as is designed (Auberge Espagnole, Swiss Cooperative, Plug & Play) should be acquired by a group who wants to live there and of which the participants know each other. The concept that you sell should be highly defined so that people are aware of what they get. Or it should be so undetermined that the inhabitants can make an agreement on how to use it themselves.**

For TS, the statement that it is ‘communities’ that are being organized vertically in the tower, is not convincing. Collectivity is not pleasing to everybody, people choose themselves and you must be careful, as a designer, not to become a ‘social engineer’. It is true that an architect should define some spatial conditions for living together. TS draws comparison to cohousing projects where houses are combined with extra amenities. As an inhabitant, you have a fully equipped dwelling but also you have access to additional amenities. On the other hand, they see projects where additional collective space is included but notice that such spaces remain underused. Overall, the architecture should provide opportunities for activities in space, characterize certain spatial identities, which facilitate interpretation and appropriation (in a flexible manner).

CLTB equally stresses the importance of co-creation with the end-users. They usually work with small communities of people who know each other well, who want to live together as a collective, and select or define a specific spatial idea that suits their idea of living together. Especially the nature of shared spaces depends strongly on the way such a group wants to live together. If they chose – for example – a shared terrace for playing and sitting, they will use it as such, as this is their starting point and shared conviction. But if they don’t choose it but are given such a space, you will get different interpretations

of how it should be used. It's like neighbours in a street that must deal with each other's noise, the playing of children, and the desire for quietness. Neighbours can come to agreements about this, but sometimes also arguments and differences may occur. People make all sorts of claims on space that are not compatible.

Beyond the Dwellings as a product

The consideration of a dwelling being more than a product was discussed in terms of the surplus that can be offered, the additional qualities that facilitate contemporary activities. CLTB has the experience that there are great differences how vulnerable households and households that would make for a 'gentrification wave' use spaces. But there are programmes where people find each other across cultural and social divides. Think for example of cycling-oriented events. These can bring together fervent cyclists with people who still are learning to cycle, children who playfully learn riding the bike, and people that are skilled to fix bikes or have a hobby in fixing bikes. Another example is a 'neighbourhood cuisine', a place where people come to cook and eat together. In such a way, spaces could be imagined that help in the integration of different residential groups. A polyvalent space with an open door, for meeting and organizing events, open to all in a group, helps in making a collective work well. It should be closely linked to the dwellings. This can also have a shared kitchen or library.

For TS, the addition of green outdoor spaces, is relevant for contributing to climate change mitigation. This can be done collectively or individually, or in a mix of the two. It seems appealing that people have a say in their own green space, so that the building becomes lively, not a designed monolith. Hence, In the residential environment, there will certainly be some expression of individuality in decorating and arranging the home and the terrace. In shared spaces, this might be a collective gesture. It's a question how this will be managed and how this will affect maintenance. Will it be too expensive and complex in such a way?

Also in the viewpoint of CLTB, Generous circulation spaces like staircases or galleries could be useful. Designers and clients

Conclusions

Conclusion and recommendations

In this study, we have investigated innovative housing typologies for the PXS tower that is to become a residential tower. This investigation was founded on a vision for the redevelopment of the tower.

Our vision is that the two towers of the complex should be redesigned as two complementary towers: one office tower and one residential tower. Hence, we projected a vertical logic onto the residential tower, as opposed to a horizontal logic (the stacking of identical floors) for the office tower. The vertical logic considers the different orientations, the views, the place in the tower. It suggests differentiating the dwellings, the spaces in the tower, accordingly. Grace to this strategy, the plinth was acknowledged as an important connector between the tower and public space, and to the surrounding communities already inhabiting the North Quarter. Specific dwelling typologies were developed for the plinth and are geared at dealing with the transition from public, representative space to collective, rather informal space in close connection to the private areas of the dwellings. Furthermore, the vision foresees a differentiated stacking of typologies and collective spaces in the tower.

The differentiation of housing typologies in the tower was based on consideration of the expected diversity of inhabitants and of the importance of offering homes to small households. We explored the challenges of organizing serviced spaces and servicing residential spaces in a functional manner on a former office floor. The core of this challenge is to imagine what to do with the surplus spaces that are left between the surface of the housing types and the net space of the former office floors. In our viewpoint, these are spaces which can benefit the collective and which can provide an innovative, spatial luxury to living in the PXS tower. Across our residential typologies, the balance between private space and shared space is different. There are types which take in as much room as possible for the private dwelling, such as 'plug & play'. And there are typologies that leave as much as possible to the collective, while private quarters are kept small, such as the 'Auberge Espagnole'.



Hence, the set of residential typologies and their respective shared space systems function as a toolbox for the design architect. The toolbox can be used to implement vertical connections and shared spaces, to create micro-neighbourhoods with spaces for shared services, interaction, and encounter.

Beyond the PXS tower, the vision and the toolbox offer relevant insights to other projects that transform offices to housing. The result of this research also is an inventory of uncommon spaces, with uncommon lighting, access, and dimensions, that can be rethought to provide added value to the dwelling.

The life in the tower as we draw it, is strongly based on the notion of collective living. It is about sharing benefits and responsibilities; this seems a reasonable condition for providing the surplus spaces next to the dwellings. The evaluation of the design results with planning and housing experts pointed out that designers need to cooperate with end-users in defining such shared spaces for them to function well. It is our recommendation that the design process can give room to this dialogue, or that the final design leaves enough freedom for end-users to interpret and appropriate the living environment in a sustainable and cohesive manner.

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