

CITYFORWARD – ILOT 130

Design note

September 2024

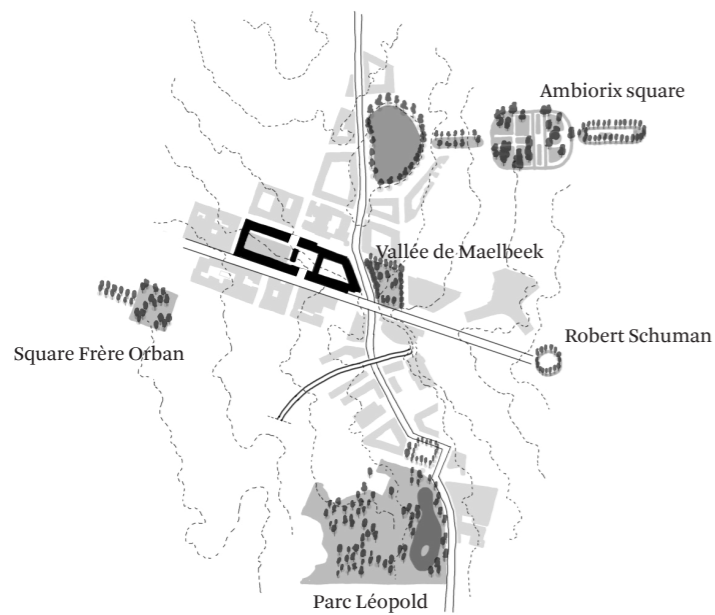
Caruso St John Architects
Bovenbouw Architectuur
Kollektif Landscape

OPENING UP THE CITY BLOCK

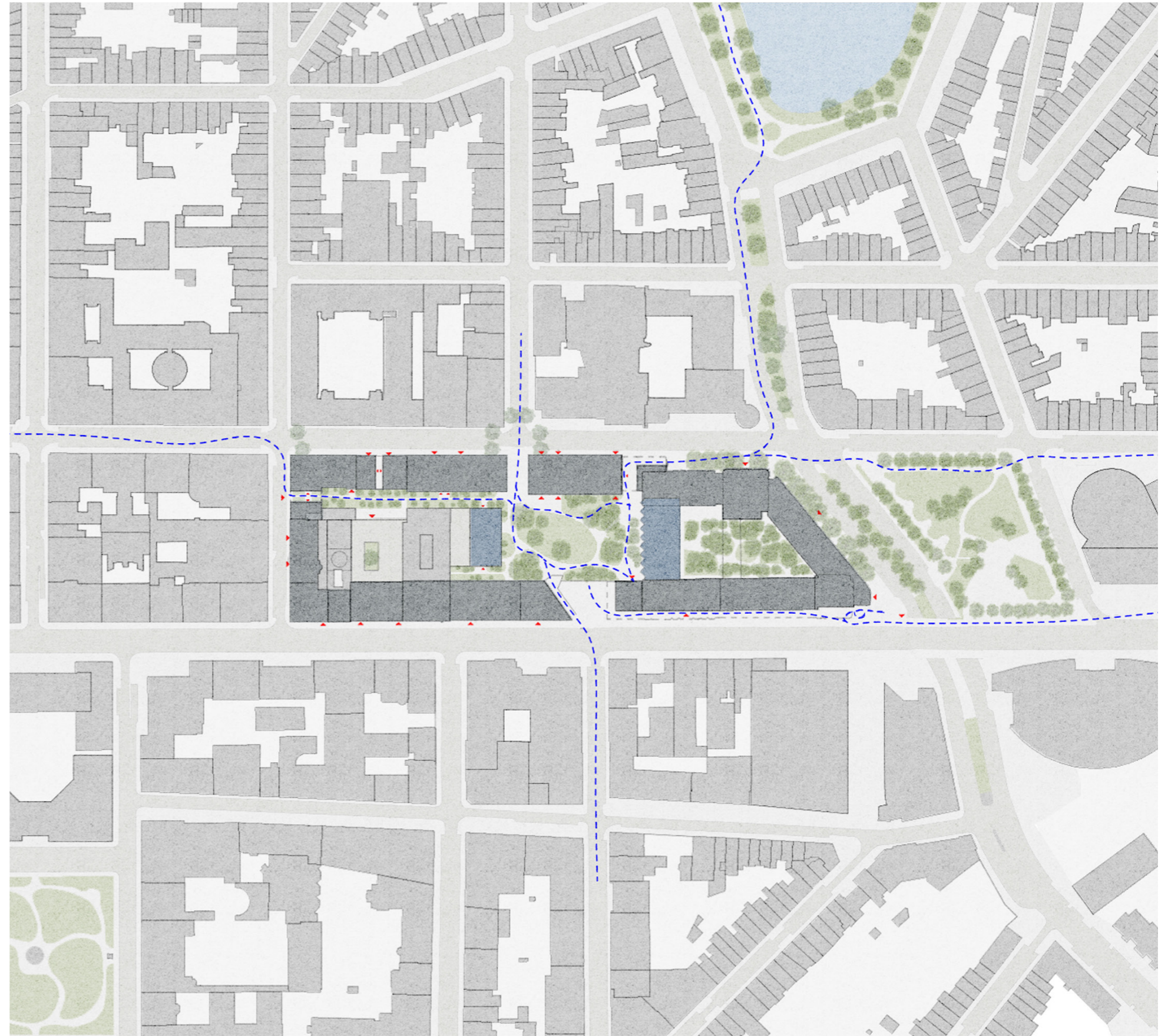
The Ilot 130 site today is an exceptionally large and monolithic city block whose length stands as a hard barrier along Rue de la Loi, obstructing north-south connections in this very central city quarter. Where the green boulevard of the Maelbeek Valley passes under the higher level of the Rue de la Loi axis, the Ilot 130 site obscures any natural pedestrian connection between these two levels.

These design proposals show how it is possible to open up the city block, to connect the northern and southern sides with generous public space that incorporates two metro station entrances. The formerly closed block is transformed into an open block, with a public garden at its centre. The rectangular form of the garden is defined by new buildings on the east and west sides. On the east side, a new wing of offices connects the large existing office building around a large courtyard. On the west side, a new housing building separates the garden from the series of sites that are outside the ownership of the Ilot 130 cluster. The garden between the new buildings is sheltered from the noisy streets by the existing buildings to the north and the south, and provides a focus around which a diverse quarter of offices, housing and public amenities can be convincingly made.

The existing mature trees are retained in the central garden, and the informal design of the landscape has been carefully considered to bring together the different approaches and routes that come into it and flow through it. The garden will be an important addition to the green spaces in this hard part of the city.



Urbanistic scheme showing the overlay of the orthogonal system of the Quartier Léopold and the more natural landscape of the Maelbeek valley beneath that. Stronger anchoring within this blue green network is a central ambition of the project.



Permeability in the Quartier Léopold: Connecting the Rue de Trèves in the south with Rue Philippe Le Bon in the north.



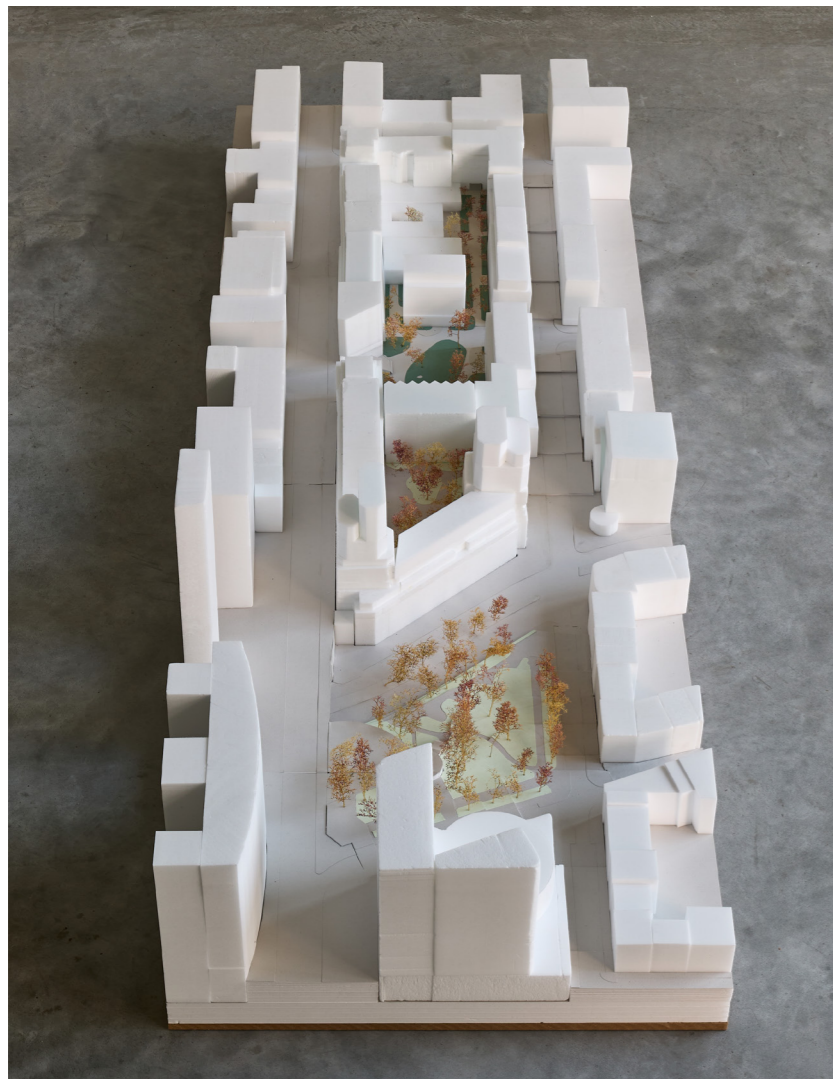
A SERIES OF GARDENS

The proposal makes pedestrian routes that lead from north to south, and from east to west, through the city block. In addition to the publicly accessible garden with its planting on full soil, we propose a dense green garden within the new courtyard of the office building on the east side. The office garden is made above the parking levels of the existing building, with a topography of shallow mounded soil. The two gardens are connected visually and physically by a tall orangerie that acts as a function space for events held in the office building.

On the west side, a new route east-west is made within the block like a London mews, to connect the side street on the west to the central garden. The mews provides access to smaller commercial sites within the block, as well as allowing a secondary access from the housing. The housing made within the existing buildings along Rue Joseph II has a southern aspect with balconies all along the mews, and along the length of the publicly accessible garden.



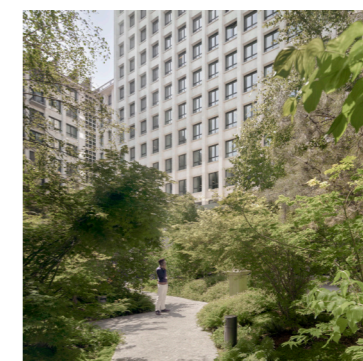
3 garden spaces restructuring the long block, with a large public garden as a centerpiece



Water playground Copenhagen (BOGL)



Teardrop park NY (MVVA)



Morland Paris (MDP)



Kanal Wijnegem (MDP)

A BREAKTHROUGH MOMENT

Today the Rue de la Loi is an uncomfortable and monotonous experience, whose poor qualities are a blight on the wider area around it. It is important to cut the obstruction of the block near the centre of its length. In this proposal, the breaking through gives a moment along the street that opens up a view to a generous space beyond. The view to the trees and the sunlit facades of the housing on the other side of the garden is a necessary relief to the brutality of this street. At the breakthrough point on the west side, the structure of an existing building is transformed into a new building with a sharp point, incorporating a generous stair and lift within its arcaded base, down to the garden. The existing building on the east side of the cut through is retained, with its exposed side face remade with windows and arcading at its base.

Between these two buildings is a large terrace overlooking the garden, where a special tree is planted. The sheltering arcades around the terrace at the breakthrough point make space for new uses at the street level. Along the eastern length of Rue de la Loi, a continuous arcade is also made to connect the breakthrough with the existing underground station and the vertical connection at the bridge.

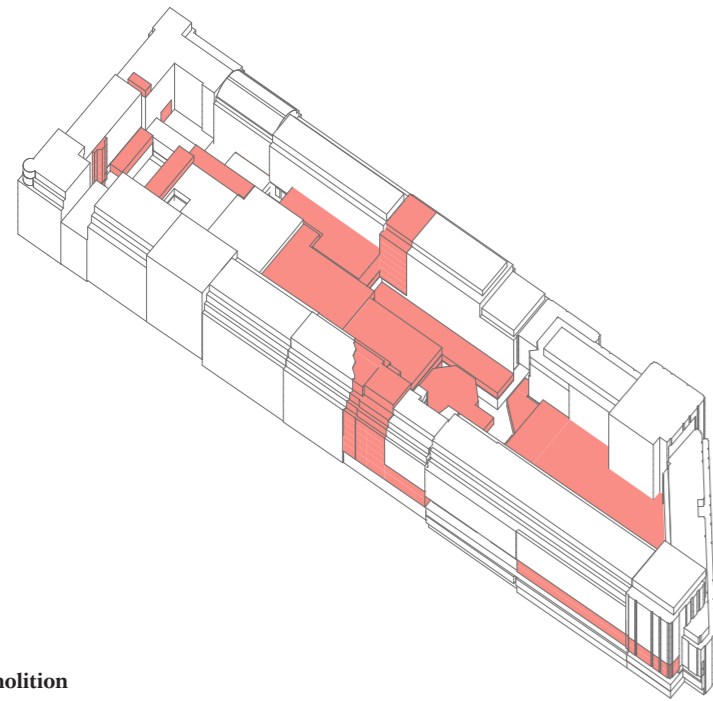


'Nolli' plan showing the alignment of the passages with the opposing streets.

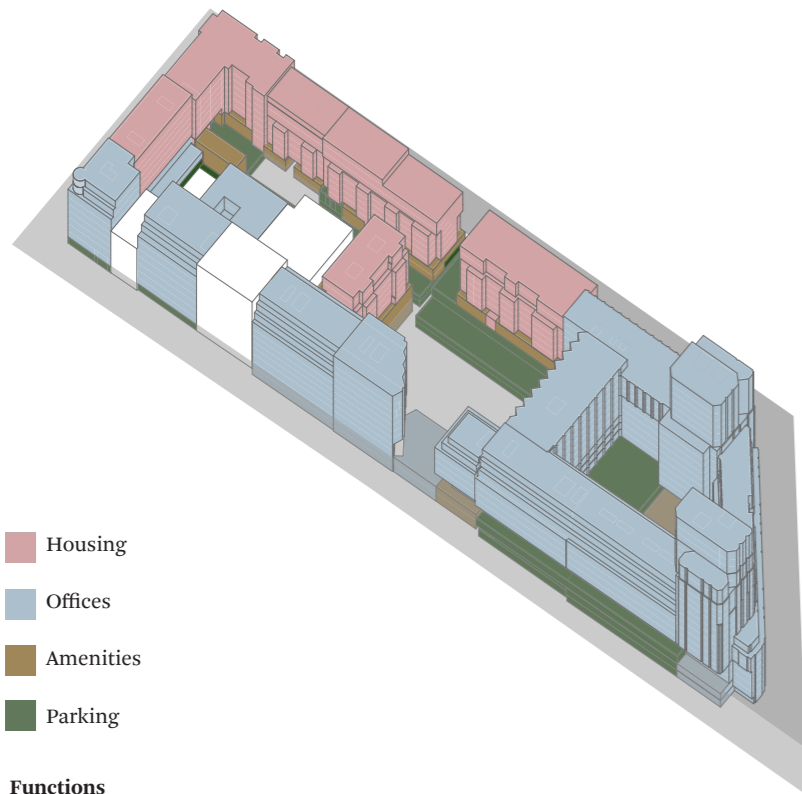


View from the Rue de Trèves across the Rue de la Loi. A balcony alongside Rue de la Loi looks down onto the central garden.

LIMITED DEMOLITION, STRATEGIC ADDITION



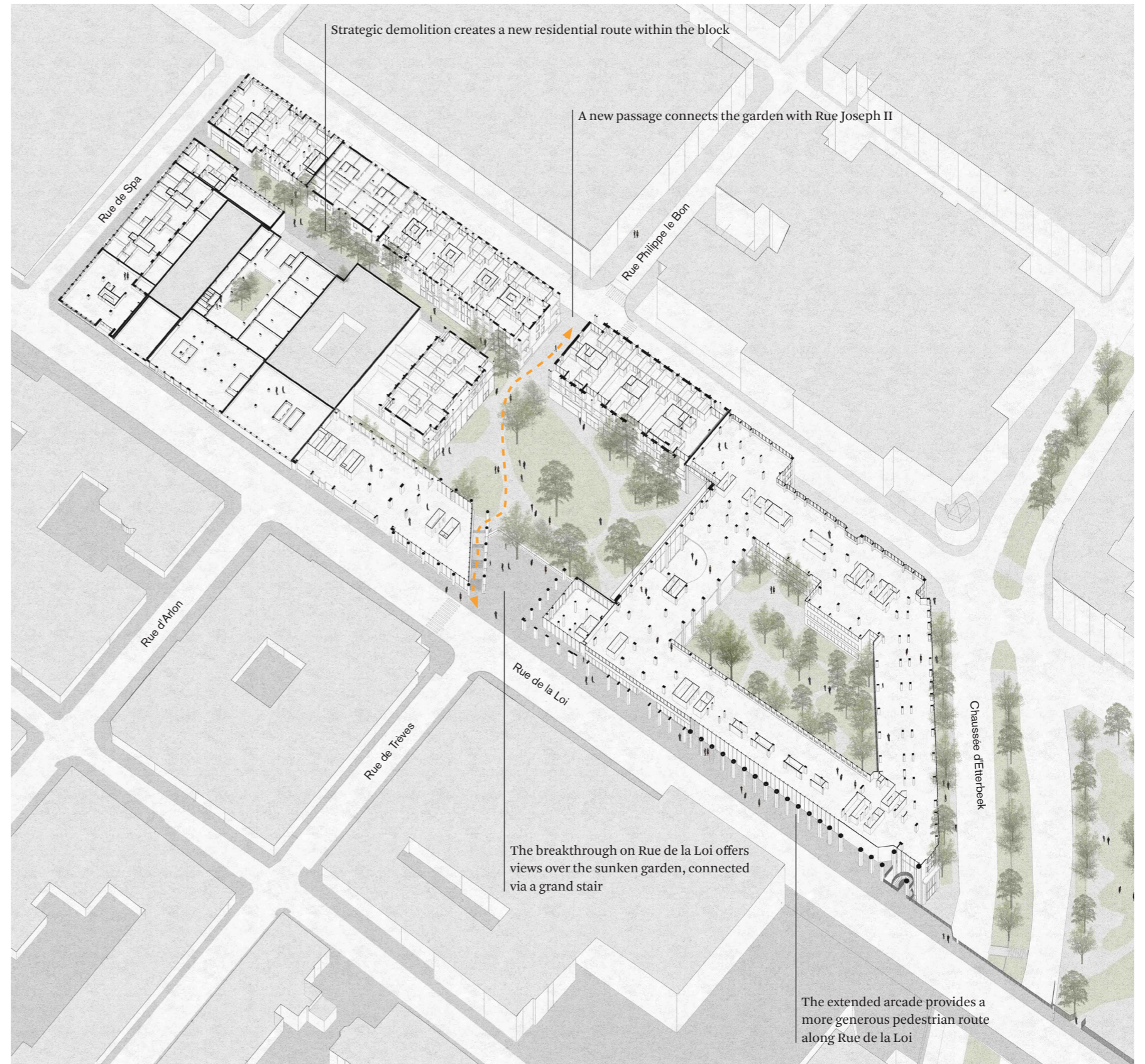
Demolition



- Housing
- Offices
- Amenities
- Parking

Functions

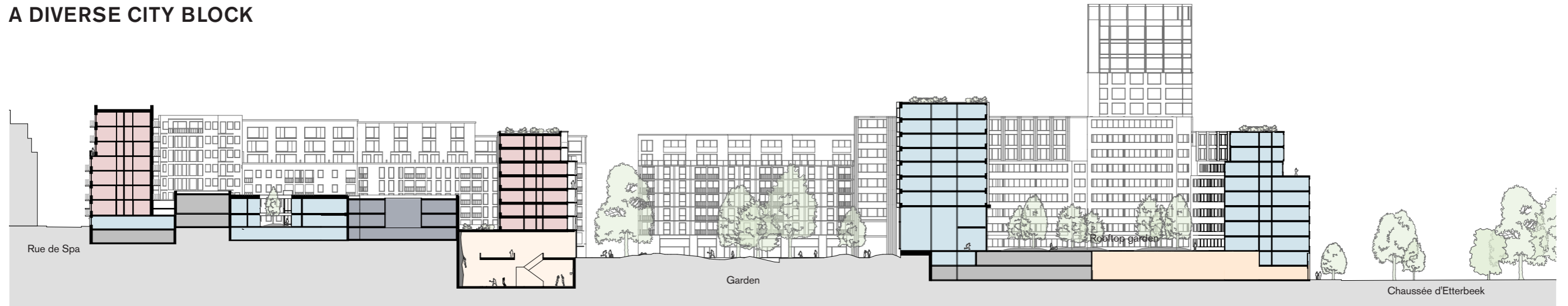
The design requires localised demolition within the centre of the block, and at the points where the cut-throughs are made. This demolition establishes the spaces for the central garden and the mews, as well as the north-south public route. In the courtyard of the head office building, one level of parking is also removed, to improve the quality of the lower office floors. Elsewhere, all existing building structures are retained, with different degrees of change. New construction is proposed at the centre of the block and on the roof levels of the head office building.



A series of strategic interventions connects the urban block with the surrounding area, while maintaining its qualities as an oasis in the city.



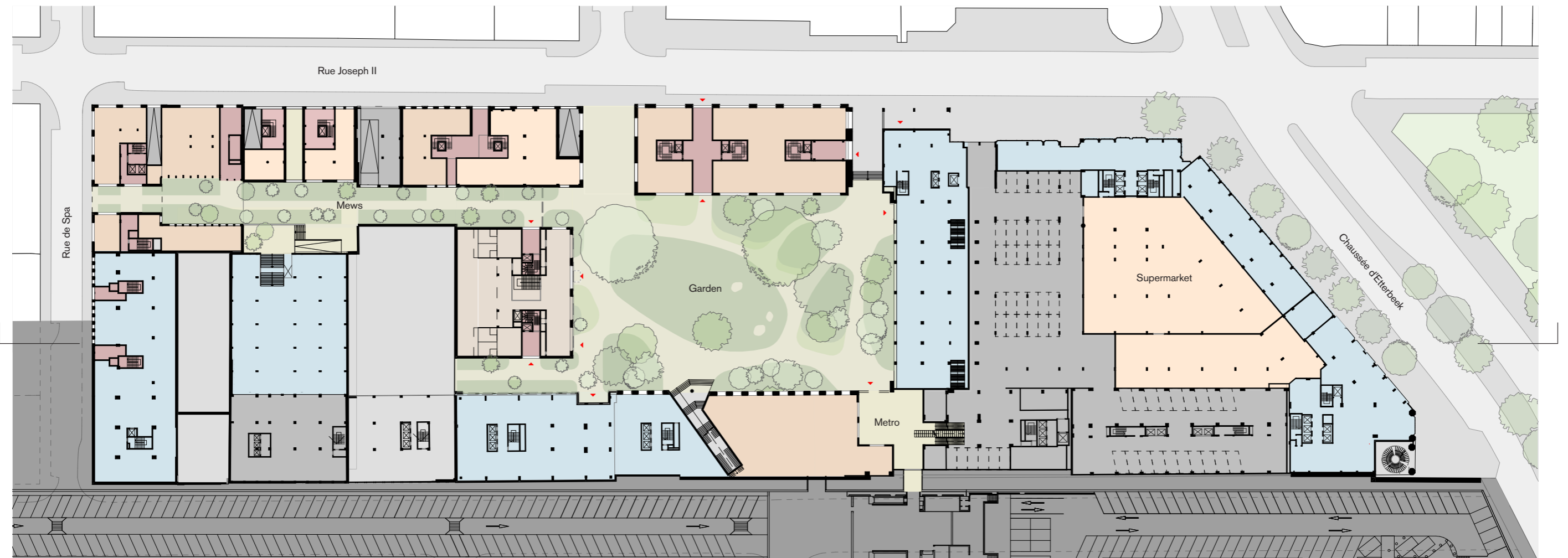
A DIVERSE CITY BLOCK



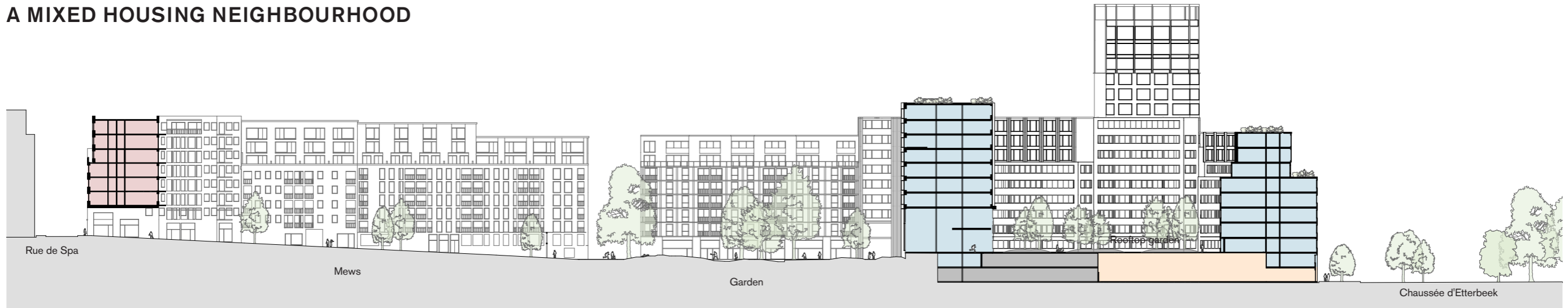
The interior of the city block is opened up and diversified. The large garden at the centre is level with the pavement of Joseph II at the junction with Rue Philippe le Bon, which is also the level at which the two large existing mature trees can be retained. Around the central garden are a wide mix of uses. At the east end of the block, new entrances and uses along the Chaussée D'Etterbeek occupy areas under the head office courtyard that were formerly parking.

- Housing entrances
- Offices
- Amenities
- Public amenities

Proposed Lower Site Plan



A MIXED HOUSING NEIGHBOURHOOD



Existing office buildings along Joseph II, at the north side of the site, are changed to become housing. The southern face of these housing buildings look onto the garden and the sloping ground of the mews. Along Rue de la Loi on the south side, the new very long arcade and the break-through change the street to a more pedestrian friendly environment.

- Housing (gradient):
- 1 bed flats and studios
 - 2 bed flats
 - 3 and 4 bed
 - Offices

Proposed Upper Site Plan

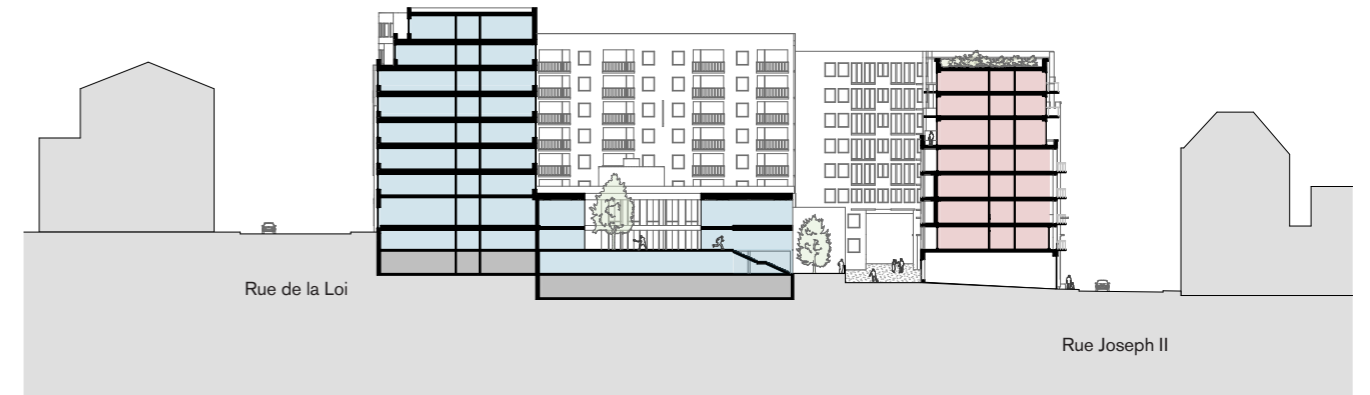


CONNECTING LEVELS BETWEEN THE NORTH AND SOUTH SIDES



The proposals remove construction from the centre of the block, to create publicly accessible spaces that make the steep topography of the site much more legible than it is today. The central garden is at a mid level along the length of the city block, level with Joseph II at the mid point of its length. The terrace at the break-through point on Rue de la Loi is 6m above the garden level, giving this point a grand overview of the new park. At the same time, the terrace and its balustrade blocks any direct sound path between the noisy road and the garden.

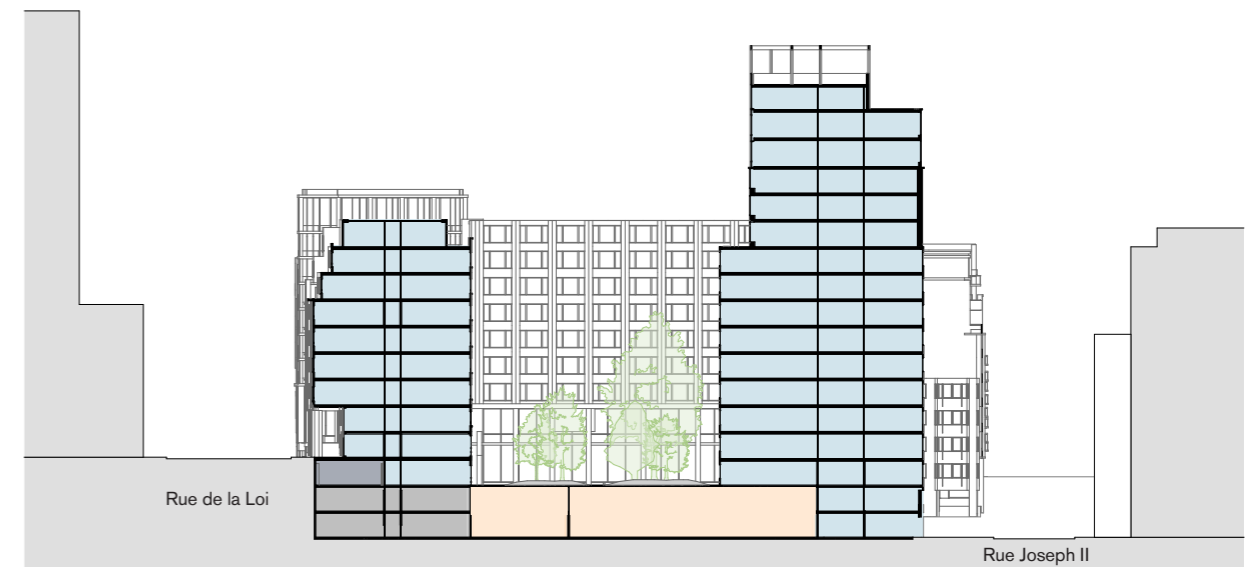
On the western end of the site, the natural ground level is also rising up to Rue de Spa. The new mews space runs along the south side of the housing on Joseph II. The mews has a gradient up from the garden level to the level of the Rue de Spa pavement. The mews is semi-private and gated, and offers the possibility for smaller buildings and ground floor units for studios or smaller offices, as well as for public facilities like a school or a kindergarten.



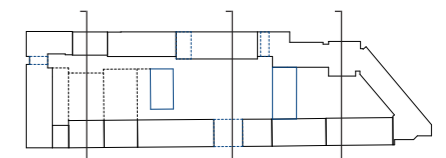
Proposed cross section through the mews and neighbouring building



Proposed cross section through the Rue de la Loi balcony and central garden



Cross section through the office courtyard



A NEW CITY CROWN

An important part of the project is the transformation of the head office building at its prominent location on the Chasse D'Etterbeek. The building today stands along this boulevard at the point where the public space widens to the Jardin de Maebeek. The currently underwhelming front face of the head office looks towards much taller towers in the European quarter. These proposals show how the existing office building could be transformed, giving it a memorable identity that reflects its prominent situation. Our proposals distance themselves from the anonymous glassy office towers. Instead, the design works with the latent qualities of the existing 1990s building, with its faceted stone cladding and unusual details, extending this architectural language upwards and shaping it into distinctive tower forms with a varied profile. Whether this building is finally used as a head office headquarters or is occupied by multiple tenants, the building should be neither anonymous nor too monumental. The proposals change the building from its current monotonous horizontality, making this end of the city block feel like the front.

The head office building is also changed at street level, by introducing new functions. A large supermarket is proposed along the Chasse D'Etterbeek, with a large market hall within the plinth of the head office. The main entrance to the head office is also moved from its current position at bridge level on the Rue de la Loi, down to the street level below. The prominent new entrance is positioned at the foot of the building's impressive new front. However, a large canopy still provides shelter to a side entrance on the level of Rue de la Loi.



Cathédrale Saints Michele et Gudule

LOI130 head building

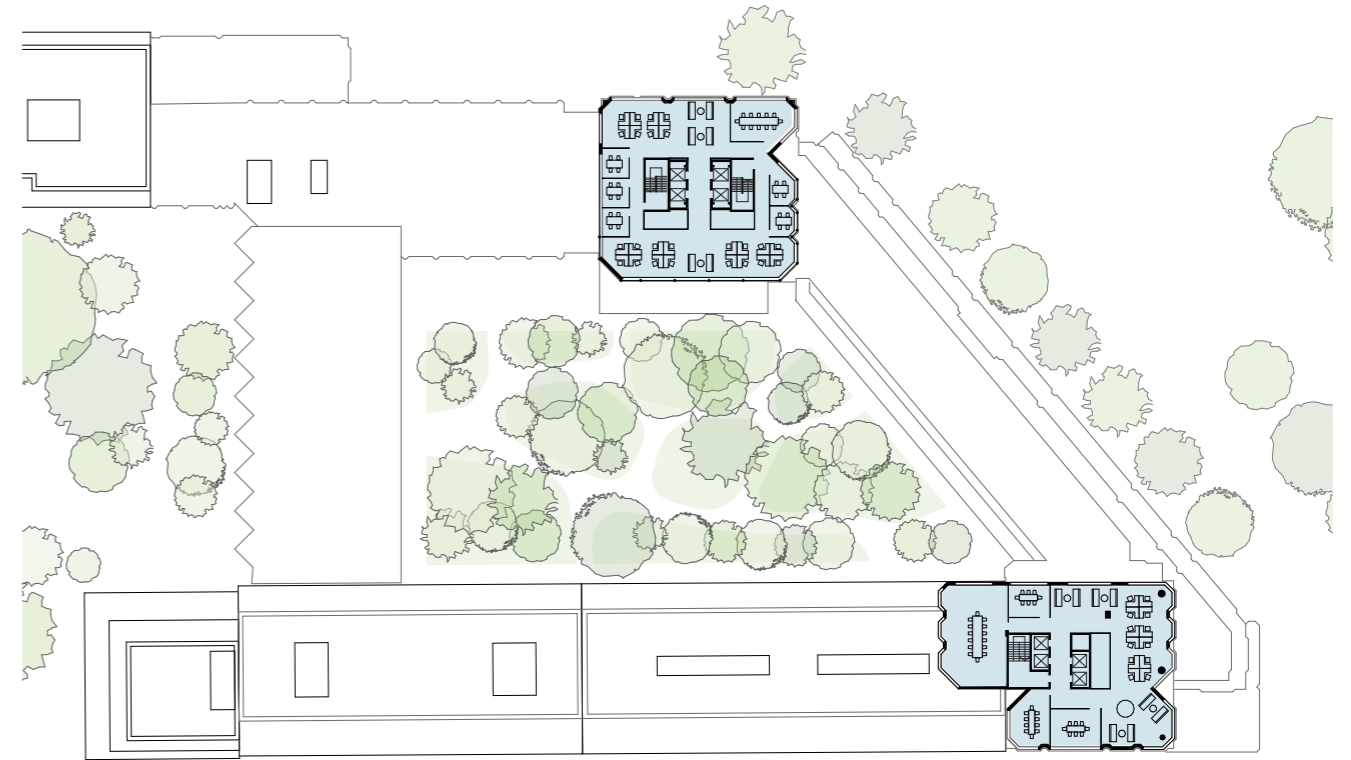
As you can see in this view from the top of the Cinquantenaire Archway the new tower volume doesn't block the view into the city and onto the Cathédrale Saints Michele et Gudule. From the ground level the view isn't obscured any more than it already was.



AN ORANGERIE OVERLOOKING THE GREEN HEART



On the west side of the head office building, a new wing of offices overlooks the central garden. At the ground floor, and raised slightly above the level of the garden, we propose a large conservatory room that acts as a window onto the green interior of the block. The orangerie is a function space for the office building that can also be hired by external users for conferences and events. The space connects the public garden with the office courtyard garden.

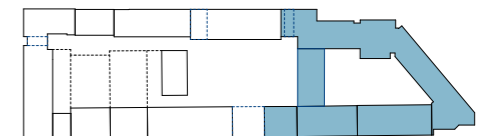


Offices Upper Floor Plan



Offices Ground Floor Plan

The new wing on the west side of the office building creates a ring of offices around a landscaped courtyard.



TURNING OFFICES INTO HOMES

The housing element of the project is located along the northern and western sides of the city block, away from the noisiest streets. There is also a new housing building in the centre of the block on the west side of the garden. The proposals show how a mix of flat types and sizes, from small studio flats up to large 3 bed flats, can be accommodated within the structure of the existing buildings. To achieve this successfully, the buildings will require stripping back to their concrete frames, before being reconstructed with suitable layouts and facades that achieve current regulation standards of construction. The existing technical spaces at roof level are rebuilt with lightweight cross-laminated timber construction, set back from the building line to provide generous terrace gardens.

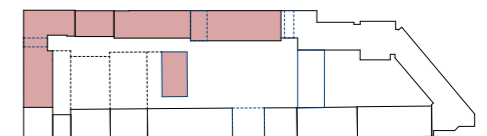
The proposed plans show how the office buildings along the northern edge, which have very deep floor plates, can be adapted to make varied plans of primarily 2 bed flats with a double aspect. The new housing building on the garden, and the existing buildings on Rue de Spa, provide flexible plans for smaller flat types due to their east-west orientation. Entrances to the housing along the perimeter of the block are always along the street side, with secondary connections to the garden and the mews. The mews is 8m wide, and will be a semi private space for the residents, with gates at either end. The different buildings along the rising slope of Joseph II, with their differing widths of frontage and various floor levels, will be designed as independent buildings, to give a more relaxed and residential character to this street.



The new passage connects Rue Philippe Le Bon to the garden. Rue Joseph II becomes an active residential street with amenity spaces and entrances at ground floor, and balconies and loggias above.

Housing ratio

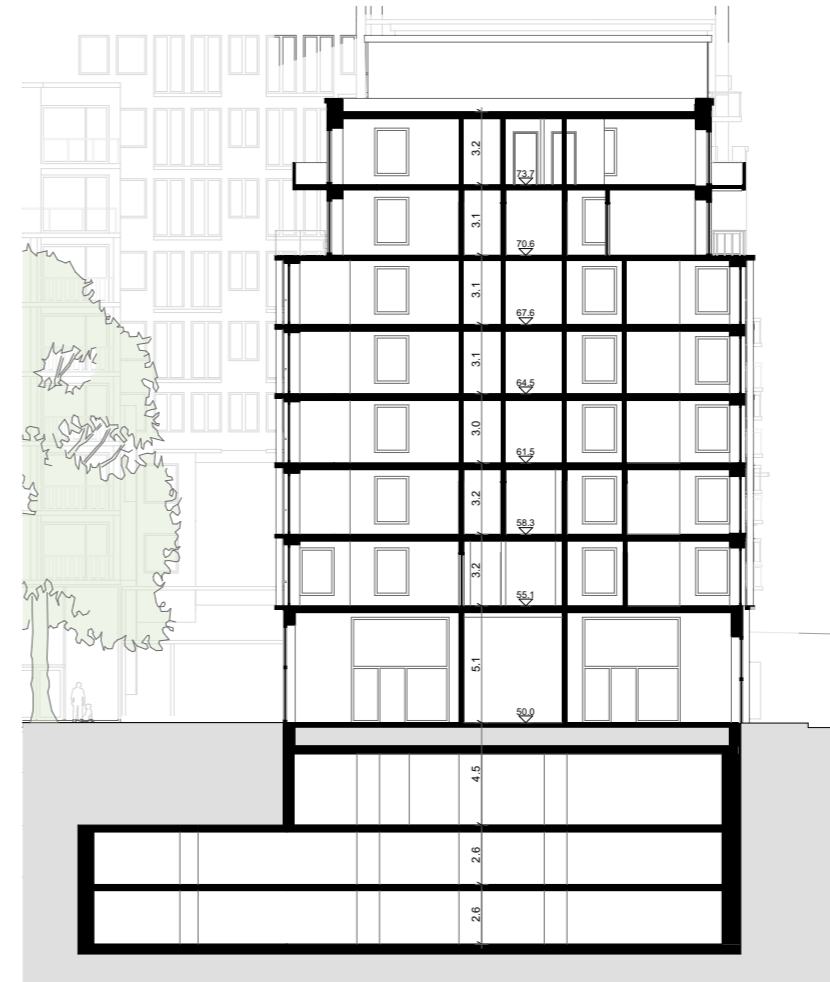
Type	n	%
Studios	49	17
1 bed	87	31
2 bed	118	42
3+ bed	28	10
total	282	



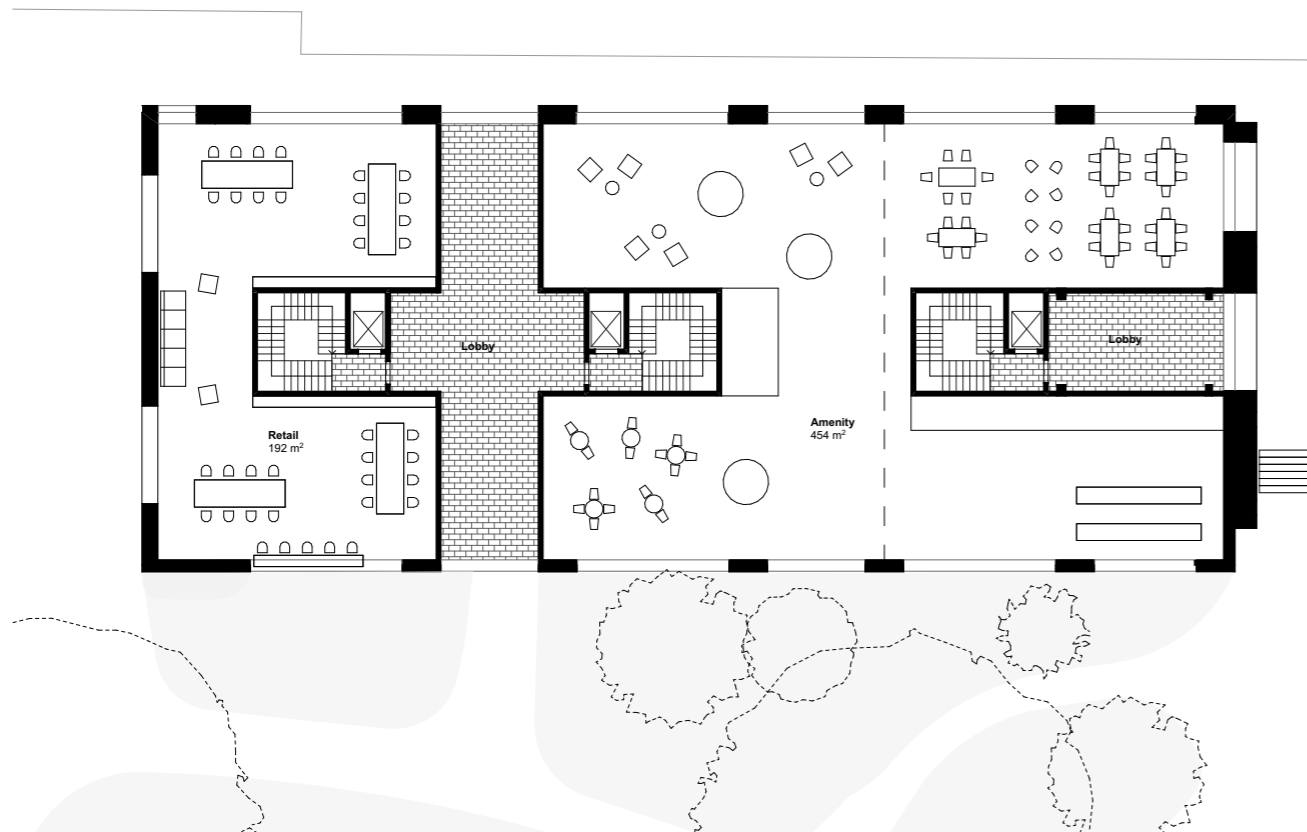
RENOVATION OF OFFICES INTO HOUSING



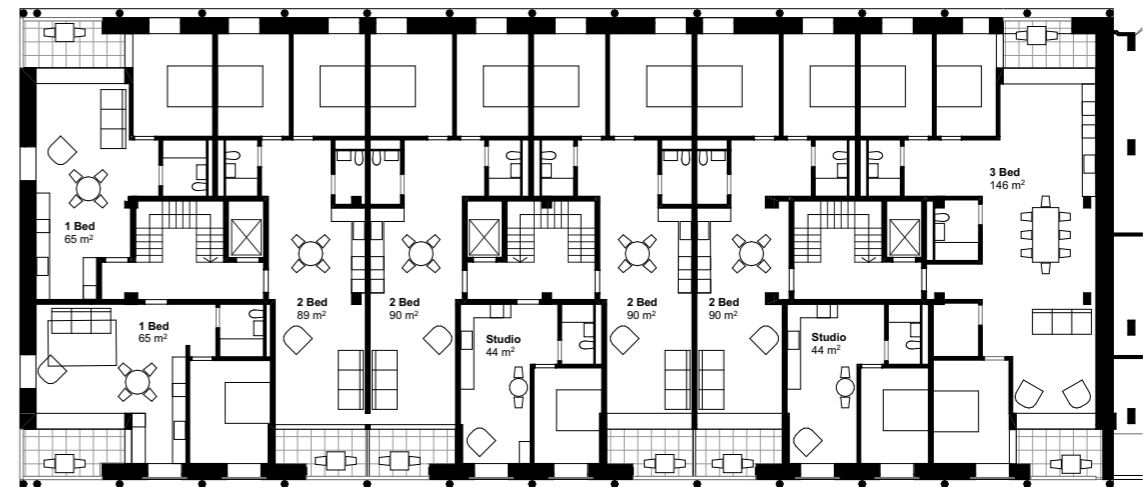
Garden Housing Elevation- J99



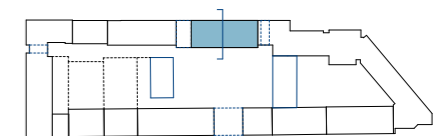
Garden Housing Cross Section- J99



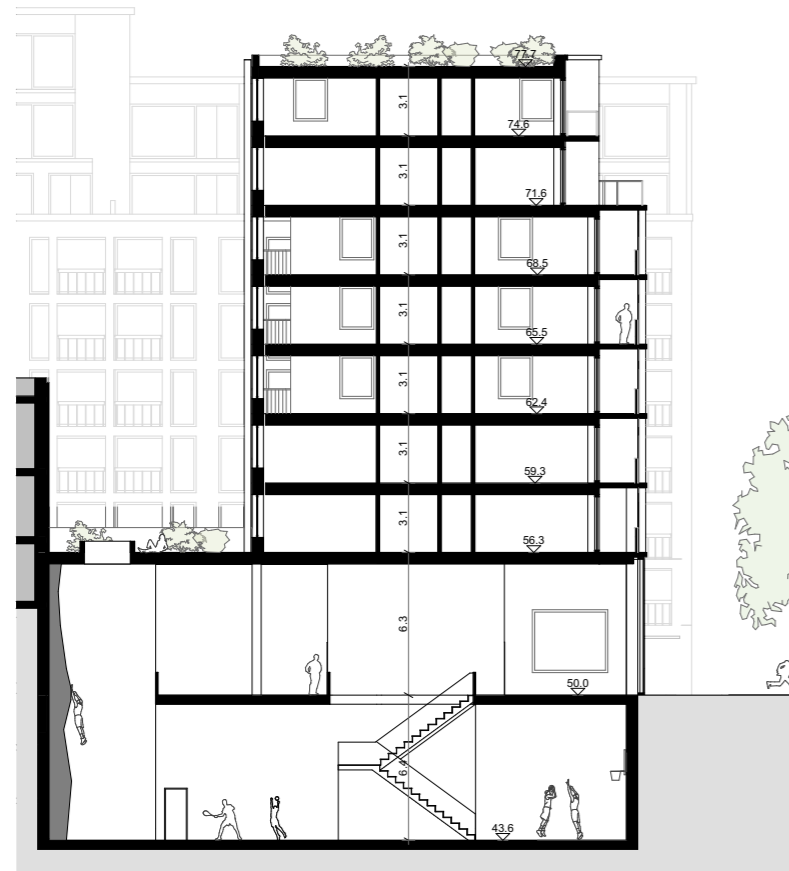
Garden Housing Ground Floor Plan - J99



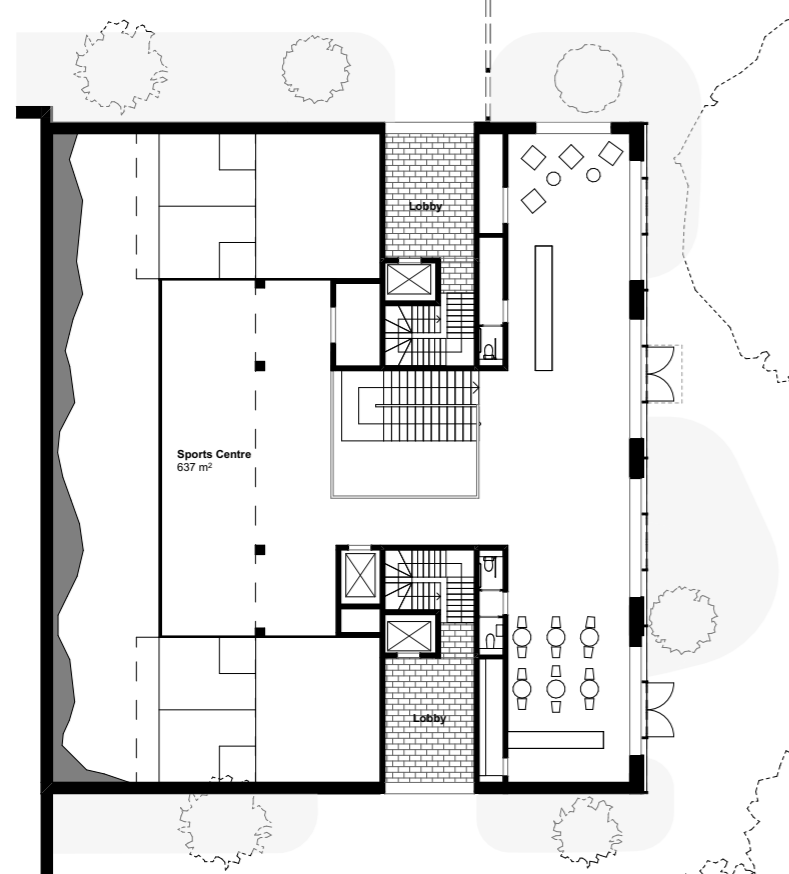
Garden Housing Typical Upper Floor Plan - J99



GARDEN LIVING - A NEW STRUCTURE



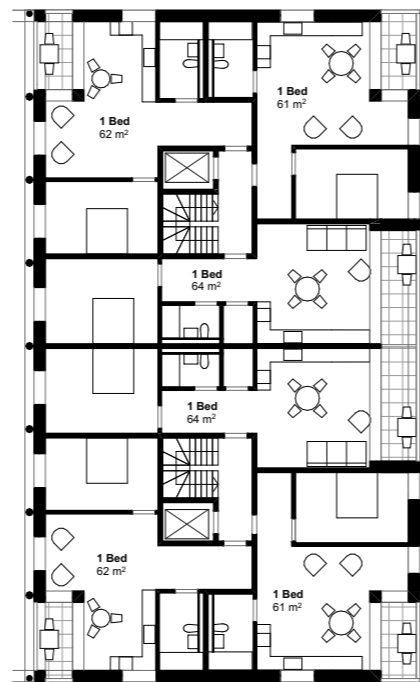
Garden Housing Ground Floor Plan



Garden Housing Cross Section



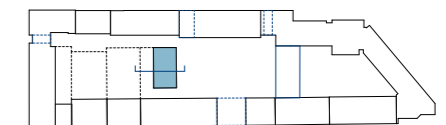
Garden Housing Typical Upper Floor Plan



Garden Housing Elevation



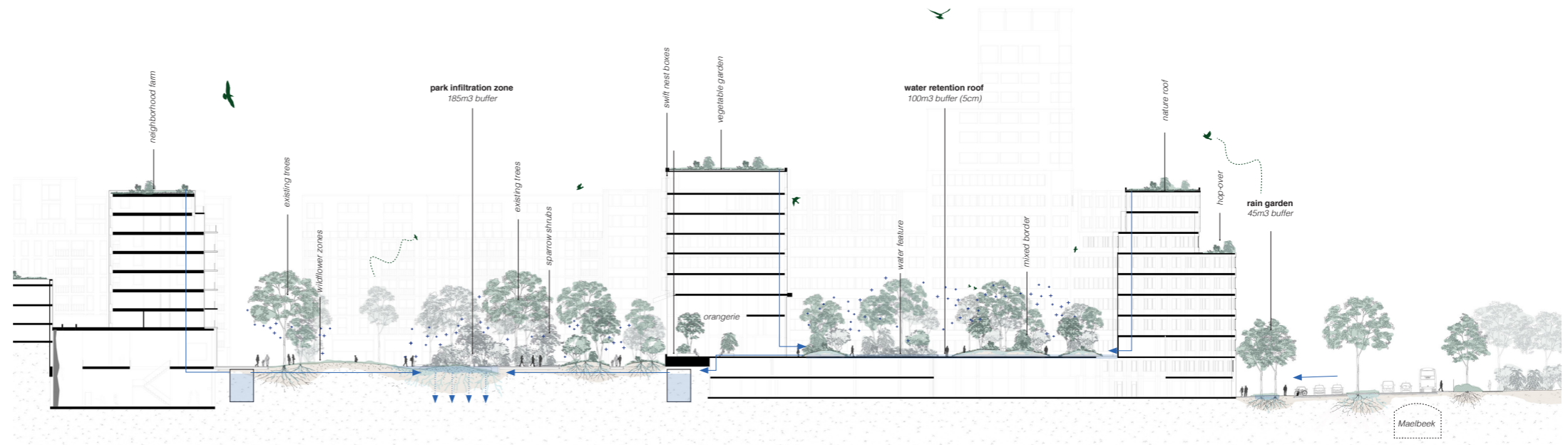
Reference image of family friendly apartments in the Im Gut housing project in Zurich by Peter Märkli.





Housing is located on the north and west sides of the garden. The housing will have loggias and balconies facing onto a peaceful site. On the upper floors these buildings are set back, where there are maisonettes with terrace gardens. The higher ground floor of these housing buildings offer spaces for public amenities or a café. In the new housing building on the left, a sports centre is proposed at the ground and first basement level.

THE RAINWATER PARK



Canopy courtyard

The central garden is designed as a green oasis in the mineral and busy European quarter, and this sunken and intimate space gives direct access to Maelbeek Metro station on two levels. Due to the demolition of several existing buildings, the entire garden is developed on full soil, while retaining two existing trees that give a parkland identity from day one. The garden is conceived as a rainwater park in which the storage, infiltration and delayed drainage of water is a central theme. The central lawn is surrounded with organic paths that follow the main walking routes. Natural and lush planting, with several large trees in the peripheral zones, provides a green framework with shade and buffering for adjacent functions.

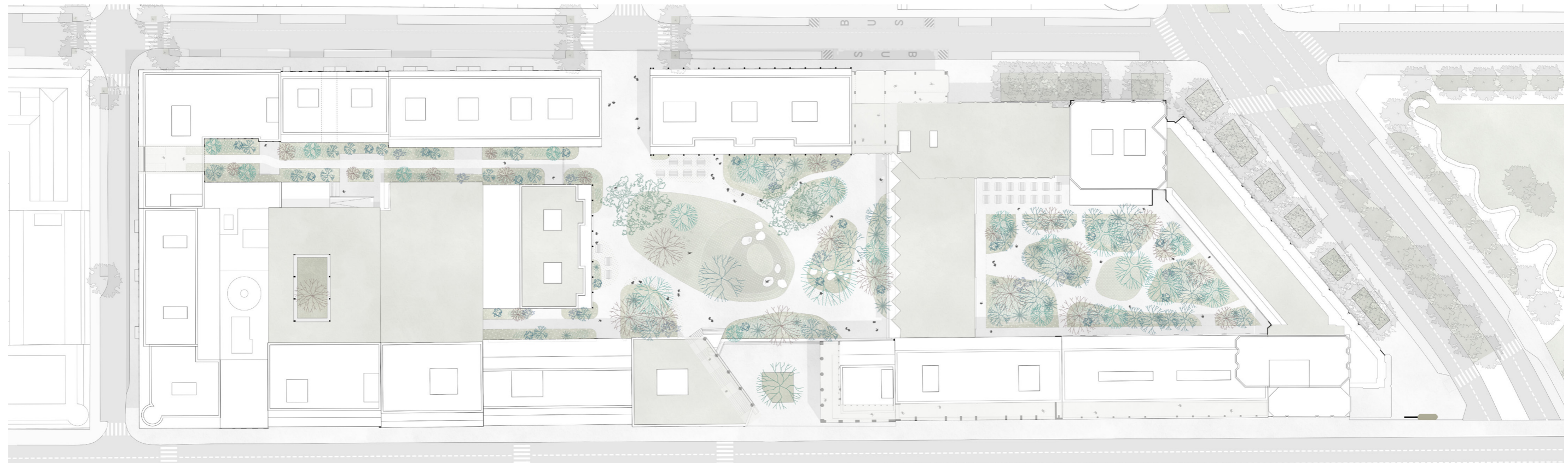
The office courtyard is a densely planted inner garden at the heart of the office complex. A south-facing terrace area forms an attractive and flexible outdoor terrace for employees' lunches and activities, while paths and intimate seating areas are ideal spots for phone calls or quiet conversations. Small mounds are introduced to provide sufficient substrate thickness for shrubs and smaller trees. The wide variety of mostly native planting, the presence of dense green areas, and the integration of fauna measures (flowering plants, insect hotels, nesting boxes) creates a lively garden with various benefits for biodiversity but also for the office workers overlooking this courtyard garden.

Sustainable water management

The project includes an integrated and ambitious stormwater concept. The central garden contains a large infiltration and buffer zone with a total capacity of 185m³, sufficient to allow the rain from all surrounding roofs to overflow here and be evacuated with delay. In addition, the office courtyard will be designed as a retention or polder roof. This means that a permanent water layer of 5cm can remain that can be gradually absorbed by the plants, while providing a total additional buffer volume of 100m³. In this way, an ambitious and coherent system is proposed that forms an integral part of the spatial proposal.

Integrated ecology

The development of a new contiguous garden in full soil offers unique opportunities to develop a lively soil that can provide a socle for non-human life. In particular, smaller songbirds can find suitable habitats here. Through diversity in planting, with a focus on native species, we can also attract smaller organisms such as butterflies and wild bees to the two courtyard gardens. The roofs will also be planted with maximum greenery, ensuring a variety of habitats across the site.



SURFACE OVERVIEW

	J79			J99			SPA3			T			LOI84			LOI86			LOI102			LOI130		
	O	H	A	O	H	A	O	H	A	O	H	A	O	H	A	O	H	A	O	H	A	O	H	A
16																							326	
15																							326	
14																							326	
13																							1038	
12																							932,6	
11																							1010	
10																							1010	
09																							1010	
08	433,5						292,3					464,4			471,9								2941	
07	479,2	396,9					320,1	1201				639,6			472			156,3					4203	
06	536,5	1113				788,1	362,9	1201			426,2	683			472			233,8					4884	
05	536,5	1112				788,2	362,9	1201			403,7	728,3			472			346,6					4987	
04	536,5	1202				904,1	362,9	1261			461	728,3			472			346,6					5123	
03	536,5	1247				904,1	362,9	1261			461	728,3			472			346,6					5399	
02	536,5	1247				904,1	362,9	1261			461	728,3			472			346,6					5580	
01	1253	1247				904,1	790,9	663,9			461	728,3			398,6			204,6					5138	
00	1253	1247				904,1	936,5	275,8	596,1		461	728,3			398,6			209,7					5030	
B1	753,1	255,9	822,8			227					95,2	698	728,3			807,1			248,4				4539	
B2			340,5			747						782,8	728,3			807			248,4				2177	
B3																							1086	
																							2063	

Offices	6854			0			4154				0		7613			5715			2191			57065	83592
Housing		9067			6324		8324			3230			0		0				0			0	26945
Shops/amenities			1163			747		596,1			1481				0						496,8		6547
Total GFA																							117084
Objective																							115000
Difference																							2084
Total NFA	6368	8250	1019	0	5879	645,6	3688	7583	501,4	0	2927	1365	7134	0	0	5279	0	0	1994	0	448,2	53629	108668
Total useful surface	5918	7161	1019	0	5141	645,6	3488	6789	501,4	0	2583	1322	6696	0	0	4844	0	0	1828	0	448,2	49675	100019

	first 105.000		external compensation		above 115.000	
	total	ratio	total	ratio	total	ratio
	72550	68,10%	10000	100%	1042	50%
	25903	25,66%			1042	50%
	6547	6,23%				
	105000		10000		2084	

OPTIMISATION RATIO (PARKING & TECHNICAL TURNED LETTABLE)

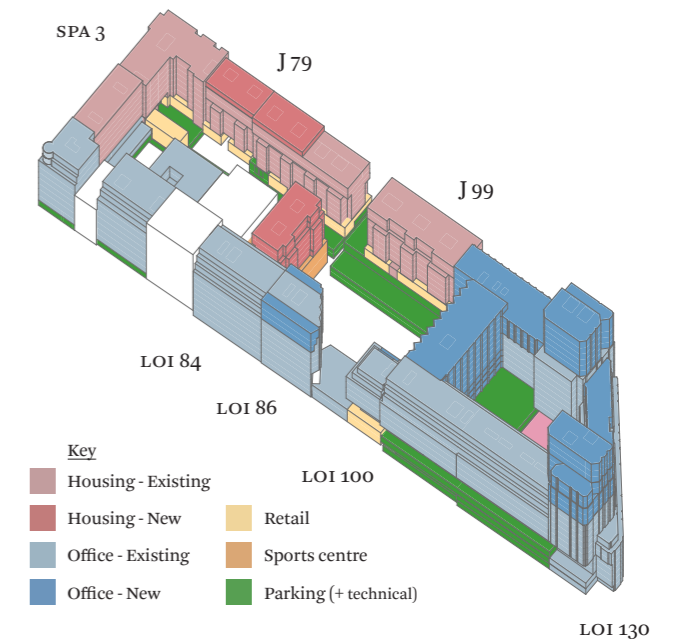
	J 79			LOI 84			LOI 86			LOI 102			LOI 130			
	O	H	A	O	H	A	O	H	A	O	H	A	O	H	A	
08																1601,4
06		502														
B1				728,3			398,6			408,4			248,4		1537	
B2				728,3			398,6			408,5			248,4			

	total	ratio	goal
Offices	5392,2	74,8%	70%
Housing	502,0	7,0%	25%
Shops/amenities	1313,7	18,2%	5%
Total optimisation	7207,9		

PUBLIC INTEREST/AMENITY RATIO

	J 79			J 99			LOI 86			LOI 102			LOI 130			SPA 3			T			
	RE	SC	SM	RE	SC	SM	RE	SC	SM	RE	SC	SM	RE	SC	SM	RE	SC	SM	RE	SC	SM	
00																						596,1
B1	822,8									408,5						248,4						
B2	340,5				747					408,4						248,4						698
B3																						2062,6
																						782,8

Retail	1163,3	747	816,9	496,8	596,1																	3820,1	51,9%	
Sportscentre																							1480,8	20,1%
Supermarket															2062,6								2062,6	28,0%
Total amenities																							7363,5	



FINDING VALUE IN THE EXISTING

There are a few key strategies that are central to our sustainability approach.

We demolish only where necessary, maintaining as much of the existing buildings as possible, while focusing on the great potential for on-site urban mining that this large site offers.

Where they continue to be used as office space, our proposal maintains most of the office building facades, upgrading their thermal performance by insulating internally. Where office buildings are converted to housing, and the energy demands are more strict, we propose to retain the existing structural frames but reconstruct the facades, repurposing stone cladding and other materials that are dismantled on site.

With the help of Drees + Sommer we calculated quantities and estimated the carbon footprint for 2 scenarios:

1. The current proposal, as outlined above (refer to diagram overleaf)
2. Demolition and reconstruction of the entirety of facades on site

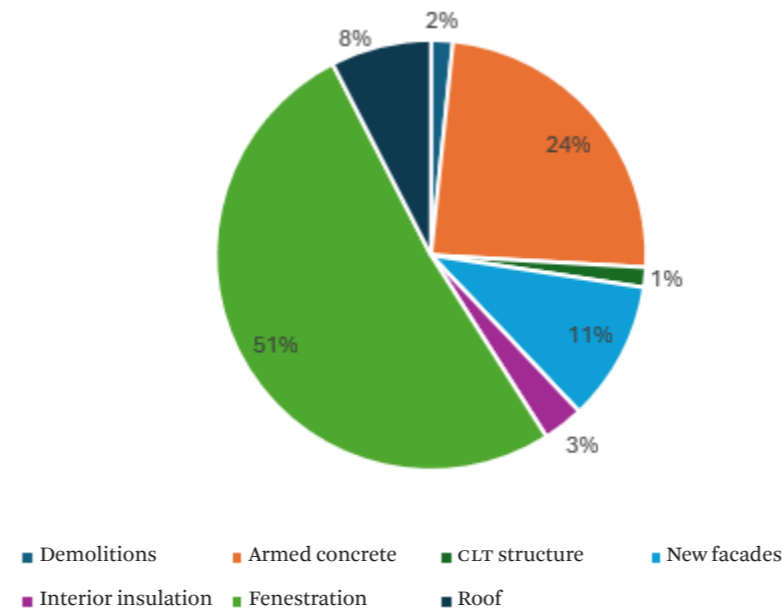
At this stage, in the calculation we only included the main materials of the structure, the facades and the roofs. The result below is expressed in kg CO₂/m² of gross surface of the project. The maintaining of the office facades and the reuse of stone cladding for new facades gives us a carbon saving of 8% compared with the second scenario.

This percentage may seem modest, but considering that in the two scenarios we maintain most of the structure, it still represents a significant improvement obtained simply with one architectural choice. Due to the size of the site the total CO₂ savings are considerable at around -890 tonsCO₂eq. If we only consider the upfront CO₂ the saving is -615 tonsCO₂eq.

		Carbon footprint (60 years lifecycle)	
		kg CO ₂ /m ²	improvement
1.	Project	87.93	-8.2%
2.	Facades Demolition	95.77	

		Upfront carbon footprint	
		kg CO ₂ /m ²	improvement
1.	Project	49.45	-9.9%
2.	Facades Demolition	54.88	

In addition, the replacement of all the windows is still needed to be able to meet the energy requirements - as you can see from the graph below, windows take 51% of the total carbon footprint of the project scenario. To alleviate this we propose to establish relationships with glazing and aluminum frame suppliers, to ensure circularity in the reuse of window components.

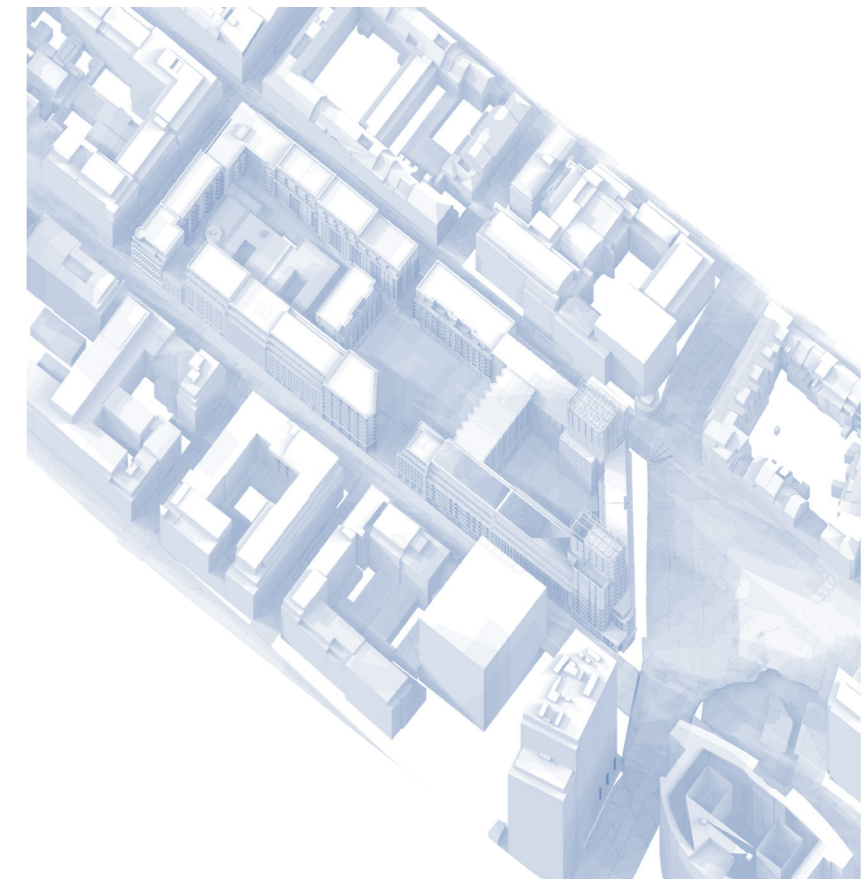
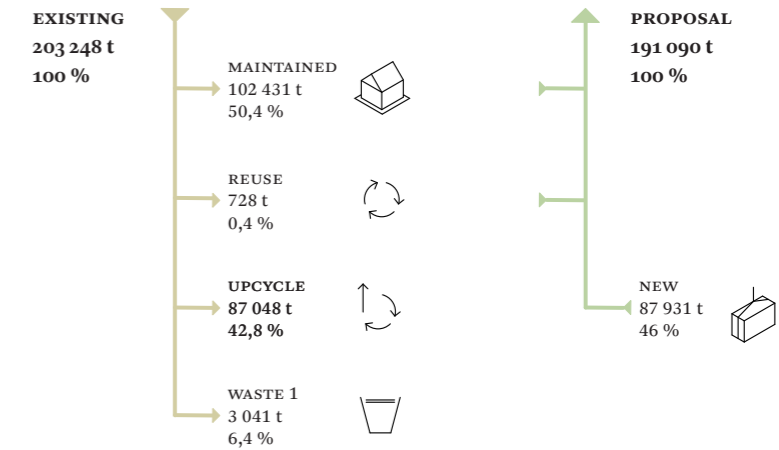
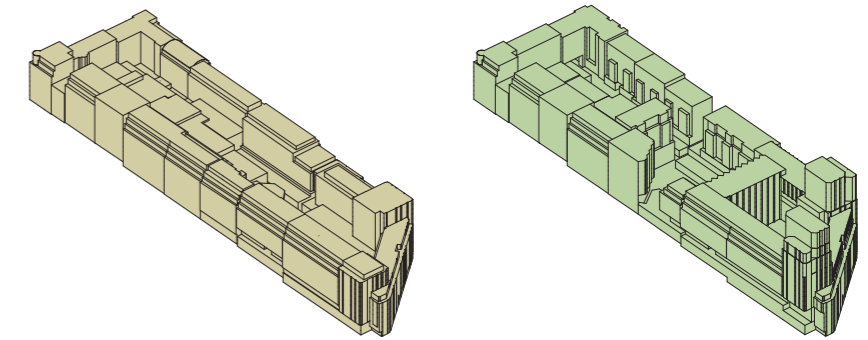


Some of the architectural choices that impact the calculation of the first scenario:

- Assuming a 25% loss of material, retrieved stone could be used to clad approx. 45% of the new facades.
- Cross laminated timber (CLT) is proposed as the structure for the rooftop residential extensions and the new garden block.
- Mineral wool insulation is to be used for the majority of the facades.
- The LOI130 building extensions are to be a concrete structure.
- For the new residential facades, we have worked towards a window-to-wall (wwr) ratio of 40% with triple glazed windows.
- For the new offices facades, wwr = 70% with double glazed windows.
- Interior insulation of the existing facades is assumed in EPS, with plasterboard finishes.
- Roof insulation is assumed as PIR.

The assumptions for the second scenario (complete facade demolition):

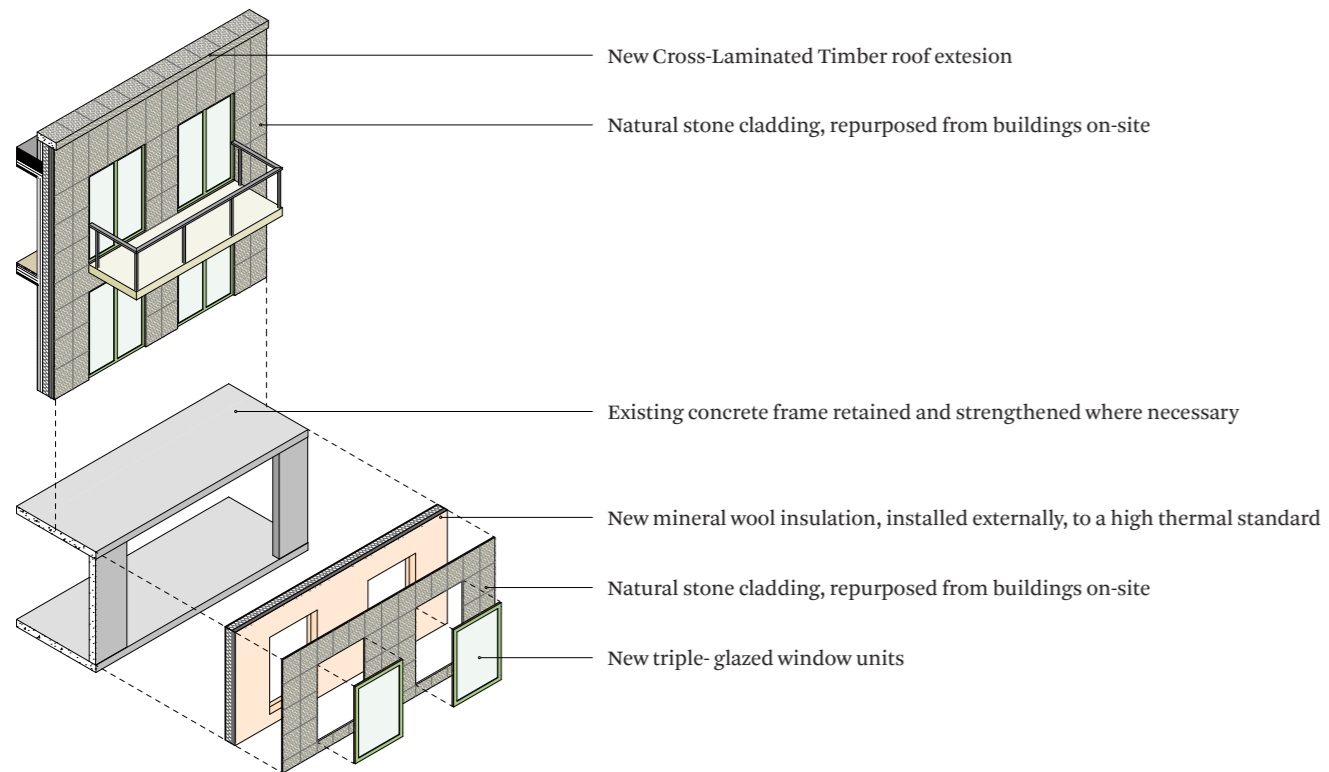
- All new facades are concrete blocks with insulation and cladding.
- wwr = 40% for residential and = 70% for the offices for all new facades.
- Rooftop extensions assumed in CLT structure, and concrete structure for the LOI130 building.
- An additional 15% armed concrete has been included, as reinforcements might be needed to secure the building structure once facades are dismantled.



Solar study showing the relatively limited effect of the new LOI130 tower volumes on the office courtyard. The breakthrough brings light into the central courtyard garden. All residential units along the mews have a good amount of sunlight throughout the day, with minimal overshadowing from neighbouring buildings.

A TOOLKIT OF FACADE STRATEGIES

HOUSING RENOVATION AND EXTENSION



LOT 130 OFFICE RENOVATION AND EXTENSION



The breakthrough in Rue de la Loi with the balcony and the covered staircase into the garden. The buildings either side of the breakthrough are evidence of our approach to sustainability and finding value in the existing built fabric. The building on the right is retained and refurbished, with a new arcade cut into its base, while the building on the left cut back, and its retained structure reclad with a new facade. This varied and considered approach to the existing buildings results in an exciting and diverse urban ensemble.