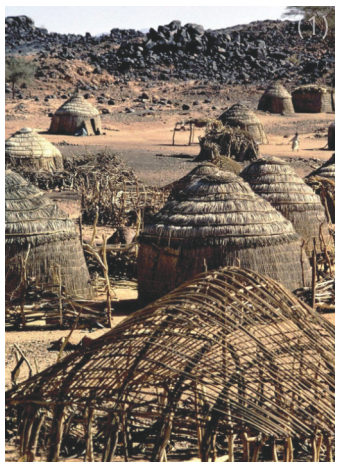
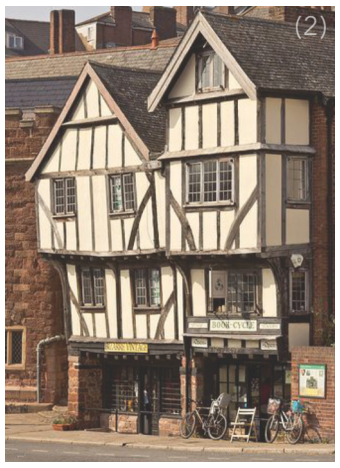
observations of modern high style architecture

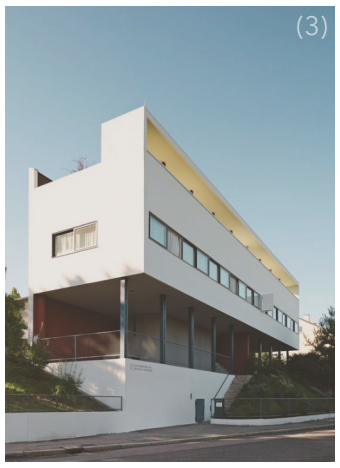
It is time for *new vernacular* buildings.



(1)"Africa Wallpaper Inspiration - Congo Africa Travel - Africa Logo Fonts - #AfricaDoSulCapeTown in 2020 | Africa Photography, Africa Animals, Africa People." Pinterest, nl.pinterest.com/pin/834995587152677628/?nic_v2=1a3Prtdq3. Accessed 18 Oct. 2020.



(2) "Tudor Half-Timbered Buildings in Exeter: Historic 15th Century Buildings in West Street Located in Exeter's West Quarter." Flickr, Keith Bowden, 21 July 2013, www.flickr.com/photos/keith_bowden_photos/9399142159/. Accessed 18 Oct. 2020.



(3) "Flickr." Flickr, Weißenhofsiedlung 4 | Felix Meyer | Flickr, www.flickr.com/photos/meyerfelix/10153539665/. Accessed 18 Oct. 2020.

	Primitive	Vernacular	Modern
Designer	No architect	No architect	Architect designer
User	Owner and developer	Owner and developer	Stranger and consumer
Level of technology	Low tech and hand made	Low tech and hand made	High tech
Aesthetics	Local aesthetics	Local aesthetics	Style, not local
Knowledge distribution	Everyone	Everyone, specialist bit more	Knowledge with the schooled

WHAT IS VERNACULAR?

Definition by Amos Rapoport

Amos Rapoport (born in 1929, Warsaw) is an architect, professor emeritus at the the University of Wisconsin Milwaukee and one of the founders of Environment-Behavior Studies.

According to Amos Rapoport, there are three types of societies: Primitive, vernacular and modern. Each of these societies operate in such a fundamental different way, that we cannot understand their architectural differences, only by comparing their appearance. We need to delve deeper into the characteristics of these societies to understand the differences.

For example, in primitive and local societies there is no such thing as an "architect". Where in modern buildings the user is a stranger and a consumer, with primitive and vernacular, the user is the owner and the developer himself. The technology level is also very different from low-tech and handmade to high-tech with fossil fueled machines. But, the most visible is the site-specific aesthetic of primitive and vernacular, as opposed to the anonymous stylistic formal language of modern architecture.

They are often thought to depend on chronology, but rather they depend on a way of life and a level of technology. However, it is common for a society to change from pre-industrial vernacular to modern. In Dutch society, we still see the results of these changes in our architectural heritage. In the Netherlands, the pre-industrial vernacular buildings have historical significance.

VERNACULAR = ATTRACTIVE

Why do I look at vernacular buildings? I do have a fascination for old buildings, I think they are magical and they have a certain deep nurturing and a seemingly intangible beauty, which I rarely see in contemporary buildings.

Technological progress over the past centuries has greatly improved our quality of life. However, when we look at historical centers with their vernacular buildings, we seem to prefer them to the modern ones. Looking at historic old centers and buildings around the world, they are the number one tourist attraction and a sought-after place to live.

A LOST WAY OF LIVING

The aesthetics of vernacular architecture goes beyond the cute variation of gables and bricks. There is an elusive layer of liveliness that is the result of a lost way of living. A way of life more connected with the elements and with our environment. The variation in the facades was a result of the different lives being lived. The users had the possibility to adapt the building to their needs and wishes. In the modern way of building in high style, however, a building is designed in its final form, it is an object, a work of art and we are not allowed to change it.

VERNACULAR = COMMODIFIED

The Amsterdam canal area and other historic local heritage are increasingly being commercialized. Not only have they become a sought after place to visit, they have become an icon, concept and identity. If we can't live there, we'll just hang a picture of these houses to remind us of this vernacular feeling.



(a) "Amsterdam, Amsterdam Houses, Travel." Pinterest, lomb.top, nl.pinterest.com/pin/687643436839242359/?nic_v2=1a3Prtdq3. Accessed 18 Oct. 2020.

Amsterdam (a)



(b) Bovenberg, Martin. "Cucina Italië Reizen, Rome Italië, Rome." Pinterest, nl.pinterest.com/pin/557461260423756243/?nic_v2=1a3Prtdq3. Accessed 18 Oct. 2020.

Rome (b)



(c) Brosen, Frederick. "Paris, La Friterie." Frederick Brosen, 2010, www.frederickbrosen.com/home-2/paris/. Accessed 18 Oct. 2020.

Paris (c)



Photograph by author, Delft. January-March, 2020.

THE BACK SIDE OF INDUSTRIALIZATION

With the industrialization and globalization, materials could suddenly come from anywhere. Building components became standardized due to mass-production (Salingaros, 2014). The buildings became more anonymous and less an expression of the place (Golden, 2012).

Society gradually discovers the negative sides of this industrial efficiency. With the upswing of sustainability awareness, we recognize that our 'throwaway society' is no longer acceptable (Chapman, 2015). We demolish recent buildings that seem to be fine and there is a growing number of vacant office buildings (Gemeente Amsterdam, 2013). At the same time, there is a shortage of housing, but supply and demand do not seem to match because of a lack of flexibility and attractiveness. To prevent future vacancy we need to focus on transforming these office areas into mixed urban areas instead of mono residential areas. In redevelopment, there are many considerations what to maintain and what to demolish. How few interventions can we do to achieve this intended quality? How can we reintroduce attractive vernacular qualities in existing office buildings to transform them into attractive, vibrant, multifunctional and resilient urban areas?

DESIGN STUDIO | SECOND LIFE

The government has a building portfolio
Rijksvastgoedbedrijf [Central Government Real Estate Agency] is part of the government with a large portfolio of governmental office buildings. In 2019 they presented a report with their goals regarding their stock. They signed the Paris Agreement in 2017. They now want to have a leading role in the field of sustainable buildings.

They want their building portfolio to be sustainable
They want to reduce their CO2 by 49% in 2030 and by 95% in 2050. Moreover, the Netherlands will be in a circular economy by 2050. This means that there is virtually no use of primary raw materials.

Collaboration with TU Delft
The TU Delft architecture chair of Architectural Engineering came up with the Second Life graduation studio. The chair chose a number of buildings from the government portfolio from which students could choose for a redevelopment case study in their graduation project.

Bigger relevance
The Netherlands have a large stock of vacant office buildings. We need strategies and (design) examples to deal with these types of office buildings. With our sustainability goals and the high demand for housing we have to find solutions to give existing buildings a second life. Unlike heritage, this redevelopment concerns the use of the building for the new function and not only the preservation of its architectural value.



"Google Maps." n.d. Google Maps. Accessed October 16, 2020. https://www.google.com/maps/@52.3876218.



Oldenhave, M. *De Knip - Plinth*. 9 Sept. 2019. Author's personal collection.

the office buildings and areas are not attractive.

The aesthetic problem in modern architecture is one of *repetitiveness*, *non-location specificity* and a *impersonal* character. Facades of buildings all over the world seem to be interchangeable. We don't know if we are in China or in France, they look the same.
We see the haste and efficiency in the facades. The repeating elements that fulfill their 'purpose', to hide. These repetitive city facades reflect how we feel and influence how we feel. They are the backdrop to our lives.

The functional problem in modern architecture is the "boxing mentality". The advanced level of separation of functions creates mono-functional spaces with a cold atmosphere.

We must focus on making areas and large buildings multifunctional to create a vibrant atmosphere. We must make 'change' part of the design. We cannot know what people want and need in the future with regards to the functions of the building.



Oldenhave, M. *De Knip Kingsfordweg 1, Sloterdijk, Amsterdam Front*. 9 Sept. 2019. Author's personal collection.

DESIGN ASSIGNMENT: REDEVELOPMENT

The building
The building is a large office building on the Kingsfordweg in Amsterdam with its back to the Amsterdam ring high way (A10), close to the Sloterdijk Station. It is called 'het boekhuis' [the book house], and 'de Knip' [part of a wallet], because it would look like the taxpayer's open wallet.
It is an iconic building consisting of a plinth with arcade, a tower and a garage. The tower is shaped like an open book. It is 85 meters high, with 20 floors and a plinth of 3 floors. The facade consists of dark natural stone and mirror glass.

Why this building
I'm from Amsterdam and I have known the building since I was little from passing it by on the highway. When I went through the given options of the studio, I saw no immediate solution for this building. This aroused my curiosity. It felt like the biggest challenge to me and that's why I chose it.

The architect
De Knip was designed by the Dutch architect Abe Bonnema in 1991 and opened in 1994. Bonnema was born in 1926 and studied architecture in Delft. After his studies he started an architectural firm in Leeuwarden in the province of Friesland. At the beginning of his career, he mainly designs residential complexes, but the last 20 years he has mainly built office buildings. He was a functionalist. He saw the building as an utilitarian object that had to answer the questions of the user, and the form would follow this function. With this he followed in the tradition of Louis Sullivan with his cornerstone 'form ever follows function'.
Modernism was also based on this philosophy but became a bigger than only a style for architecture and design (like functionalism). Modernism detached itself from relying on this principle and became a style that identified with cleanness, sleek lines and a lack of ornamentation.
Although the tower looks like an open book, it is said that this is the result of a functional solution that had to do with wind and shading.

Current occupants
The building was designed for publishing house Reed Elsevier. However, the publishing house never moved in. Instead the Dutch ministry of real estate became the owner and leased it to the national tax and customs administration.

Tax office activities
Once every ten years a company gets inspected by the tax office. The accountants are looking through the books to see if everything is by law and to see if all the taxes are rightfully paid. The tax activities are done by computers. Citizens fill in their data online and their costs are automatically calculated. This is supposedly faster, the only problem is that if something goes wrong it is very difficult to correct the misconduct. The processors are located in Apeldoorn, in Sloterdijk, it is mainly people's work.

Tax office health & aims
The internal structure of the Tax Administration is a mess. It is very stressful to work at the tax authorities, and especially now because there are too few employees. They are looking for 1000 new employees! The tax office got a bad stigma of being impersonal. They want to change this by re-introducing the human scale. They want to put the citizen central.

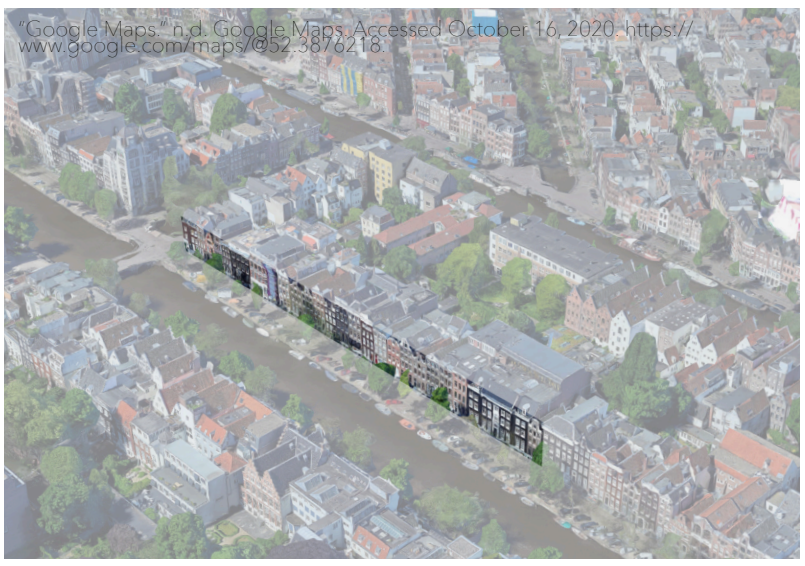
Custom office activities
The custom office takes samples and monitors the in and outgoing merchandise. That's why they have a lab. Because the custom office is in the plinth, the facade is very closed off, which makes the building unfriendly and secretive.

Customs and tax office
Since a long time the custom and tax office are stationed together. However they don't interact professionally because their work related activities are too different.

Programmatic intervention
The customs office will be relocated and the tax office will stay in the tower. The plinth building will be mixed use.

RESEARCH.

How can we *learn from* the ***aesthetic*** qualities of *historic vernacular* façades for *office building redevelopment*?



Keizersgracht 122-172a, Historic centre, Amsterdam |1620



Kingsfordweg 1, Sloterdijk, Amsterdam | 1994

comparing two facades from two different societies

To learn from the qualities of vernacular facades to improve this office building I researched the aesthetic qualities of the Amsterdam canal houses. I made a comparison between the 160 meter wide facade of this office building and 160 meter width of adjacent canal houses. In the context of office redevelopment the interventions we can employ are limited. Changing the buildings expression often comes down to a façade design because the building volume and the building line are more or less fixed.
This was qualitative research through a facade comparison, interpreted through logical argumentation, theory literature and historical literature.
We need this abstract interpretation to avoid copying a particular image instead of creating a contemporary interpretation.
These abstract interpretations resulted in the design parameters shown below.



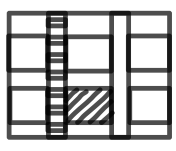
We learn from the aesthetic qualities of historic vernacular façades for office building redevelopment..

by comparing the qualities of the façades, regarding...

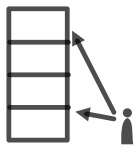
- the **affordance** of liveliness and
- the **expression** of liveliness

and translating them into **abstracts concepts and parameters** than can be used in the design process

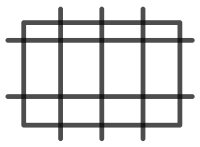
pattern in pattern



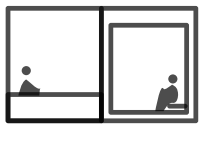
distance and detail



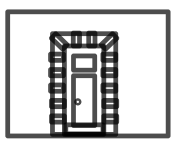
simple rules



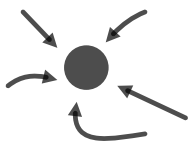
useful variation



function emphasis



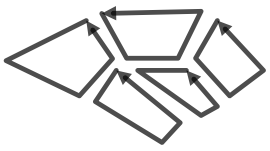
relating to a center



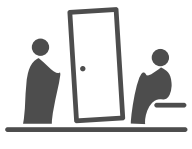
visual orientation



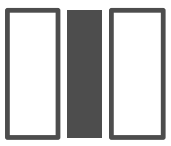
closed urban structure



recreational entrance



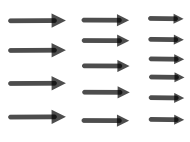
intermediate transition area



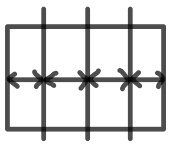
mixed functions

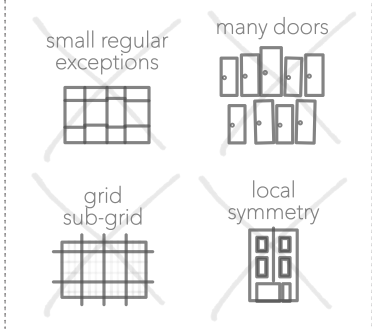


smoothly from public/private



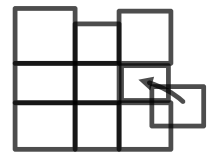
small plots





I was unable to use these four parameters that emerged from the research because they were too specific or too general.

room for change



COMPOSITION

In the composition group we have parameters related to the visual end result.
Pattern in pattern
It is important to see that a pattern is enclosed within a pattern. This means that as we come closer, we see different patterns.
This is also related to distance and detail. Because we don't need a very detailed facade if we don't come close to it.
It is important to have simple underlying rules. You can always make it more complicated by adding variations and exceptions.

FUNCTION AND COMPOSITION

When we introduce variation, it is important to make it useful variation. We should avoid creating variation for the sake of variation because the end result will look artificial.
Another important way of connecting the function to the visuals is by emphasizing the function through the aesthetics: function emphasis

HIERARCHY

Hierarchy is very important and is often lacking in modern buildings. It is important to relate to a centre, both visual and functional. Is is the basis for creating a lively area. If there is no centre nearby to relate to, one can create a centre.
Visual orientation is an important visual aspect to help orient the pedestrian. It show where the centre is through compositional methods.
A closed urban structure is a simple, yet effective way to help create orientation and hierarchy.

TRANSITION

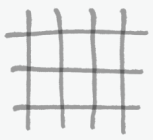
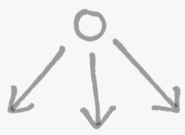
For the transition from inside to outside, it is important to have an intermediation transition area. When there is an entrance, it is important to create a recreational entrance where people can meet spontaneously.

FUNCTION

The function is strongly related to the liveliness of the building and the facade. If there are smaller plots there is already more liveliness. When there is a mix of functions, there will be more liveliness at different times of the day and it will attract people from the rest of the city
However, there must be a smooth transition from public to private to really create liveliness. This is important in public and private areas. You must prevent people from closing off their windows and gardens.

ADAPTABILITY

Adaptability allows the building to remain lively over time.
If there is room for change over time, the layering of the various wishes and requirements will provide an extra liveliness. We should no longer see buildings as a fixed work of art, and more as a sculpture formed by its users over time.

	modern	vernacular	new vernacular challenges
Aesthetics	**monotonous**  - repetitive - dead	**nurturing**  - natural variation - lively	creating liveliness & making location specific and personal facades
Function	**dead plinth**  - repetitive - mono-functional - inactive	**liveliness**  - natural variation - multi-functional - lively	making change in use and preferences possible
Technique	**dominating nature**  - a lot of waste - use of toxic material - change is a hazard	**in harmony with nature**  - no waste - non toxic materials - change when needed	using biodegradable* materials and dry mounting techniques

NEW VERNACULAR IS THE BEST OF BOTH WORLDS

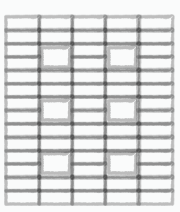
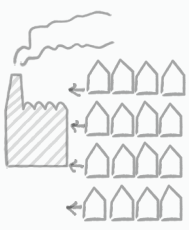
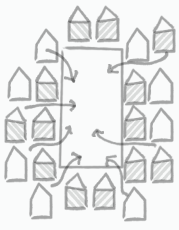
Through this research I discovered three major differences between modern and vernacular buildings in terms of aesthetics, function and technique. These insights resulted in three objectives.

Aesthetics
The modern aesthetics are very repetitive and monotonous, because of the high level of standardization, versus the handmade natural low-tech variation of vernacular aesthetics.

Function
Modern buildings are very mono-functional and have no hierarchy. Vernacular areas, on the other hand, are multifunctional and have a direction because they relate to a centre.

Technique
Modern society is dominating over nature, exhausts nature and creates a lot of waste and toxins. Vernacular societies are in balance with nature. There is no waste or no toxin production and change is self-evident.

**Biodegradable materials can become part of the ecosystem again when we no longer need them. We should not focus on waste reuse, because this only worsens the unbalanced relationship that we have we material use. And we should not focus on reusable elements because they will result in more standardized and monotonous architecture.*

	modern		vernacular		*new vernacular*
aesthetics	 - little variation - standardization - self centered - closed final form - no functional emphasis - one pattern	&	 - natural variation - hand made - relation to a center - open ended - functional emphasis - pattern in pattern	>	 - useful variation - computer made - relation to a center - room for change - functional emphasis - pattern in pattern
function	 - mono-functional - no center - separation working and living - heavy industry outside of city - low density - open urban blocks	&	 - multi-functional - one center - mix of working and living - heavy industry inside of city - high density - closed urban blocks	>	 - multi-functional - multiple centers - mix of working and living - heavy industry outside of city - high density - closed urban blocks
technique	 - laborer - fossil fueled high tech machines - large factory - global production - one times use materials - (toxic) waste production	&	 - carpenter - low-tech basic tools - workshop - local production - compostable material use - no waste production	>	 - specialist/architect - computer-controlled - workshop + small factory - local production (a.m.a.p.) - biodegradable material use - no waste production

the building is always ready to change

Since we want the function to be open, we need to create a design that takes into account several possible functions. That's why I took three different scenarios and looked at their different requirements.
There are certain solutions that are simple and result in a one-time intervention. Such as adding separate shafts and adding separate circulation. But there are also conflicting needs that require a flexible solution.
This creates challenges for the design. The facade must be open and closed, divided into two rooms and function as one space, and have a balcony and no balcony.

	currently	**housing**	**restaurant**	**reception hall**
shafts	*singular shaft*	separated shafts	separated shafts	(singular shaft)
circulation	*integrated circulation*	separated circulation	separated circulation	(integrated circulation)
spaces	*big open space*	multiple rooms	one room	open space
openness facade	*closed facade*	semi-open facade	open facade	closed facade
outside space	*none*	balcony	no balcony	loggia

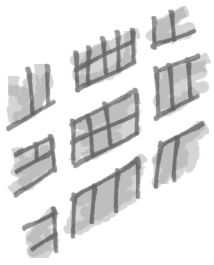
fixed solution

flexible solution

combining different scenarios to create more possibilities

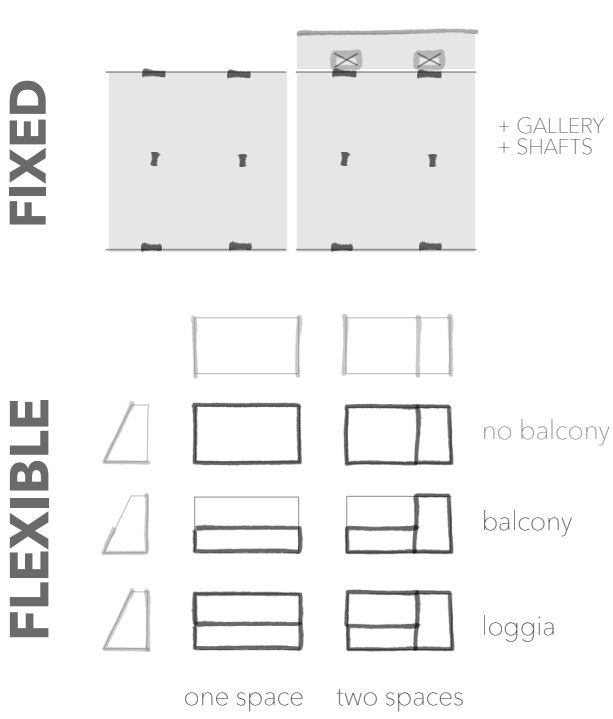


FRAME
fixed
protection
closed

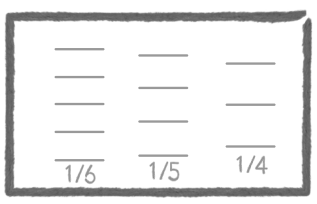


INFILL
flexible
interaction
open

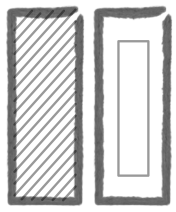
To make the facade as flexible as possible but with as few interventions as possible, the facade is divided into two parts. The ***frame*** and the ***infill***. The frame protects the construction and the infill is the interaction with the outside. The filling becomes more flexible and adjustable and the frame more fixed and facilitating.



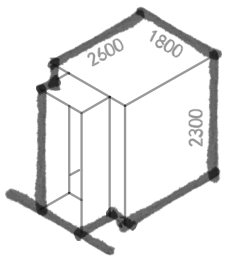
INFILL RULES



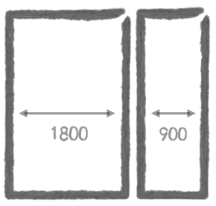
vertical division options



closed/open panels



elements fits in elevator



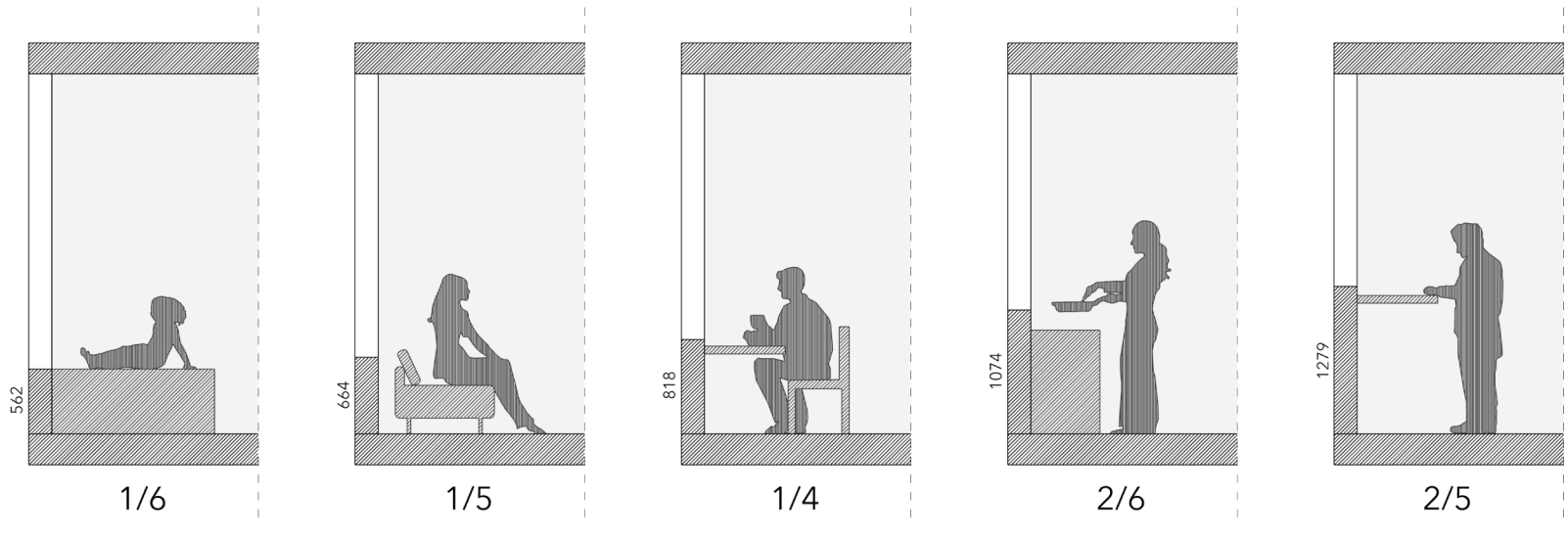
two frame sizes

The three different options for dividing the panels of the infill should allow a wide variety of indoor-outdoor interaction. Below are examples of these different interactions.

The choice of a window or a closed part makes it possible to change the privacy and light as needed. The closed part is made of white painted wood.

To make adjusting the facade as easy as possible, the elements are no larger than 2.6m. In this way, everything can be moved via the lift and no crane needs to be used.

There are two sizes for the window frames. The width of the infill is 6x0.9m. This results in a possibility of 13 configurations. The various panels can be placed within this.



many different inside-outside interactions possible

INFILL CATALOGUE





***useful variation* versus 'variation for the sake of variation'**

Photograph by author, Rijswijk. November 8, 2019.

Creating variety with a useful aspect is the key to expressing liveliness. In the image above, we see facades that have 'variety for variety', resulting in a static rather than a lively expression.



Klaprozenweg (1)



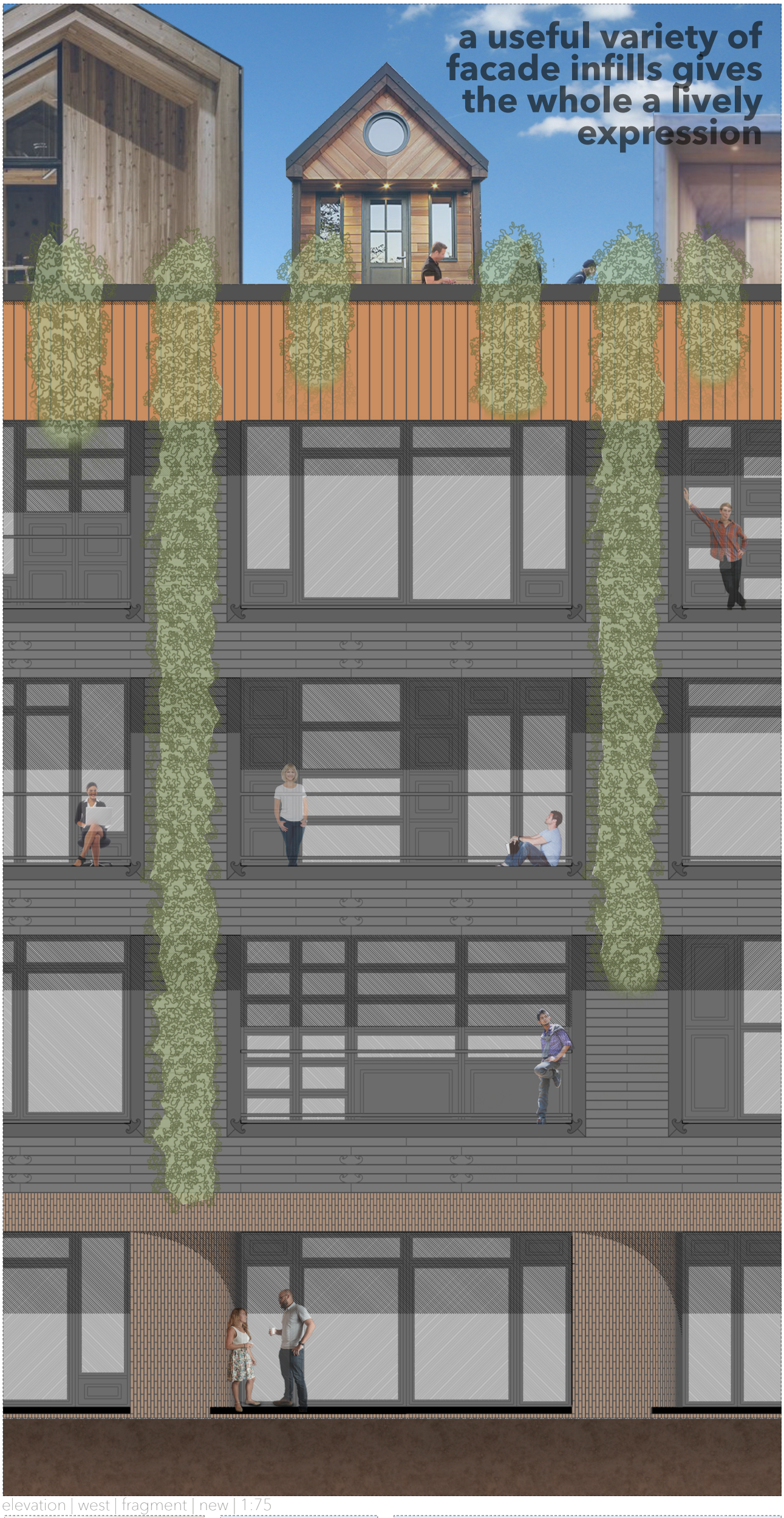
Blok 59 (2)

***useful variation* versus 'being original'**

(1) Funda.nl. (2019). Retrieved from https://www.funda.nl/koop/verkocht/amsterdam/appartement-40077475- klaprozenweg-49-b2/

(2) Woning Blok59 IJburg Amsterdam - EH-ARCHITECTS (n.d.). Retrieved from http://www.eh- architects.nl/project/woning-blok59-ijburg-amsterdam/

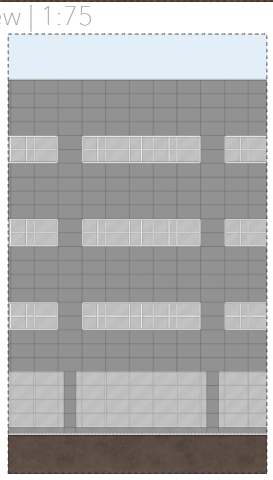
Being original is one of the main obsessions of modern societies, resulting in a disjointed final assembly. Originality is frowned upon in vernacular societies because it opposes authority.



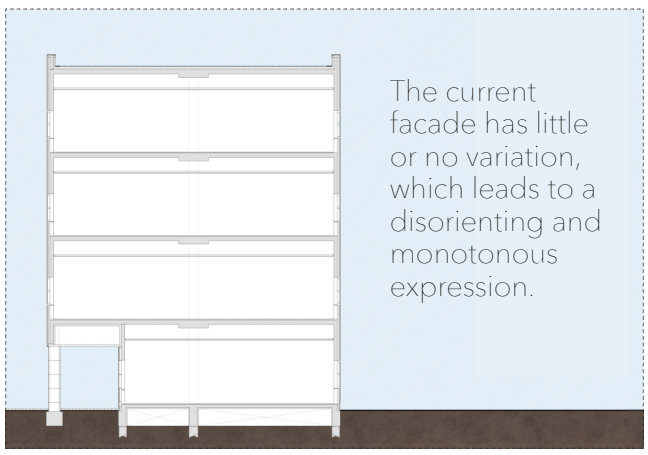
elevation | west | fragment | new | 1:75



facade photo | 2020

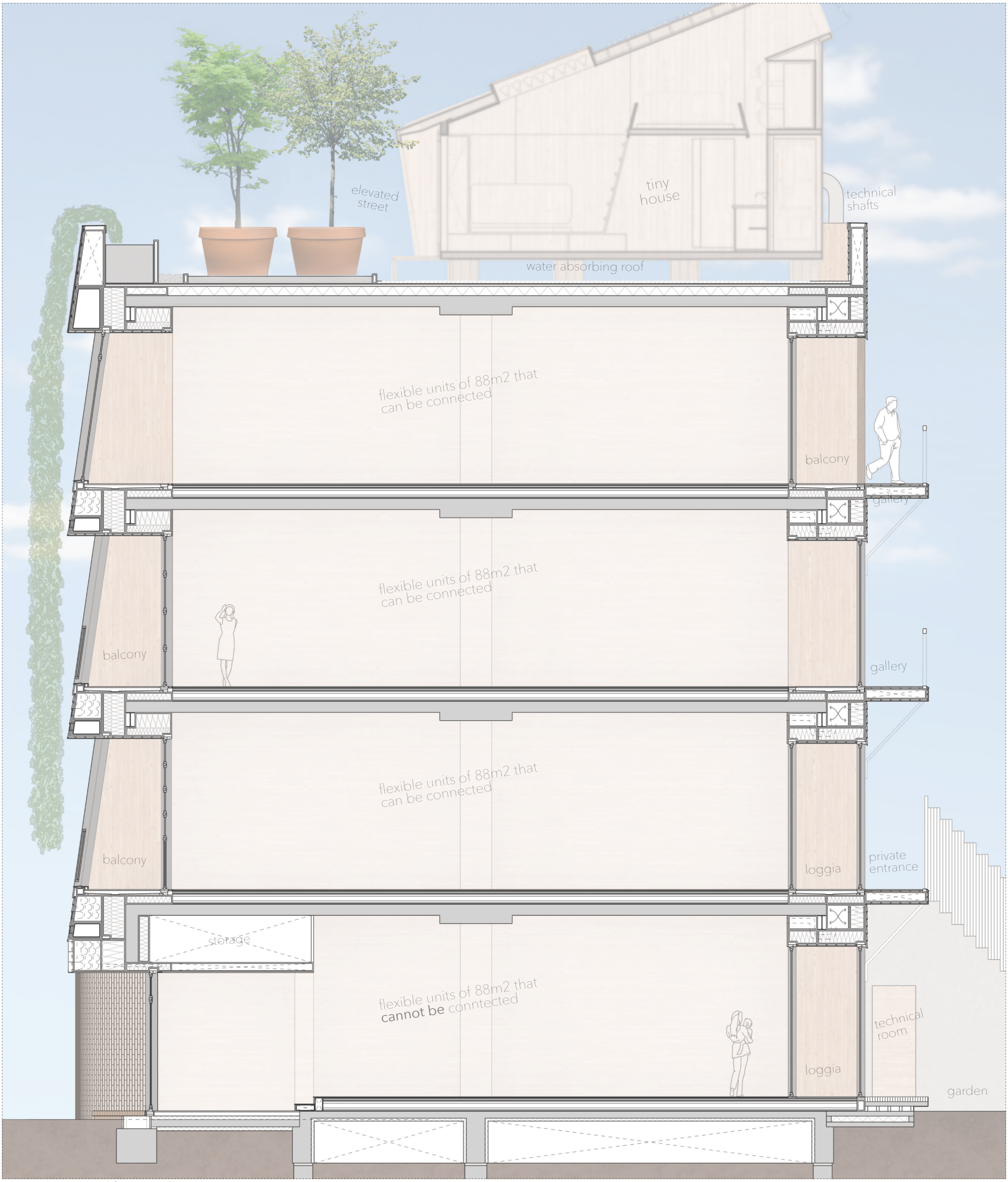


elevation | west | old | 1:200

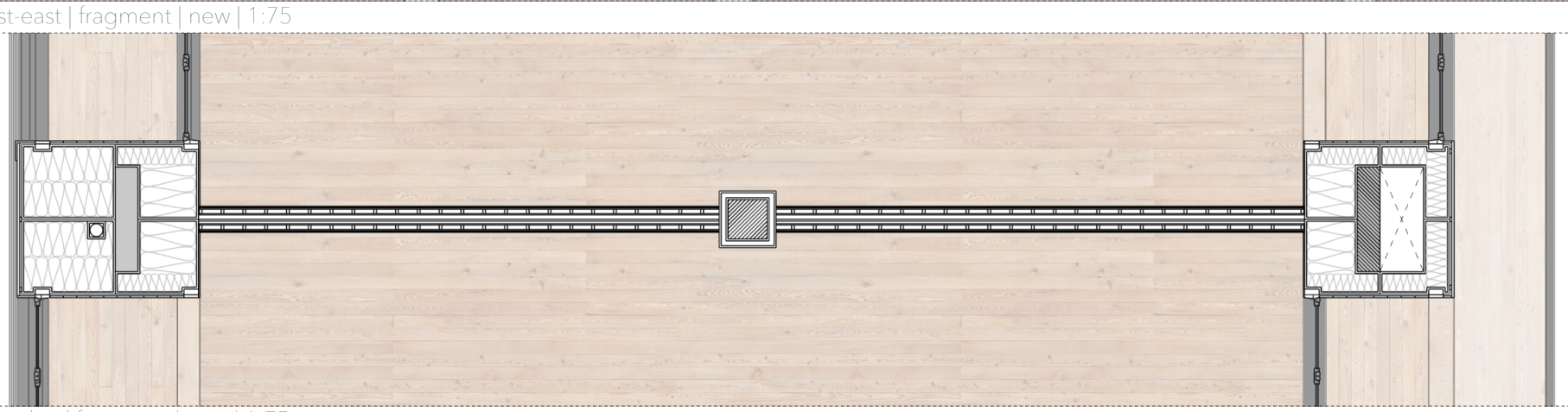


section | west to east | old| 1:200

The current facade has little or no variation, which leads to a disorienting and monotonous expression.

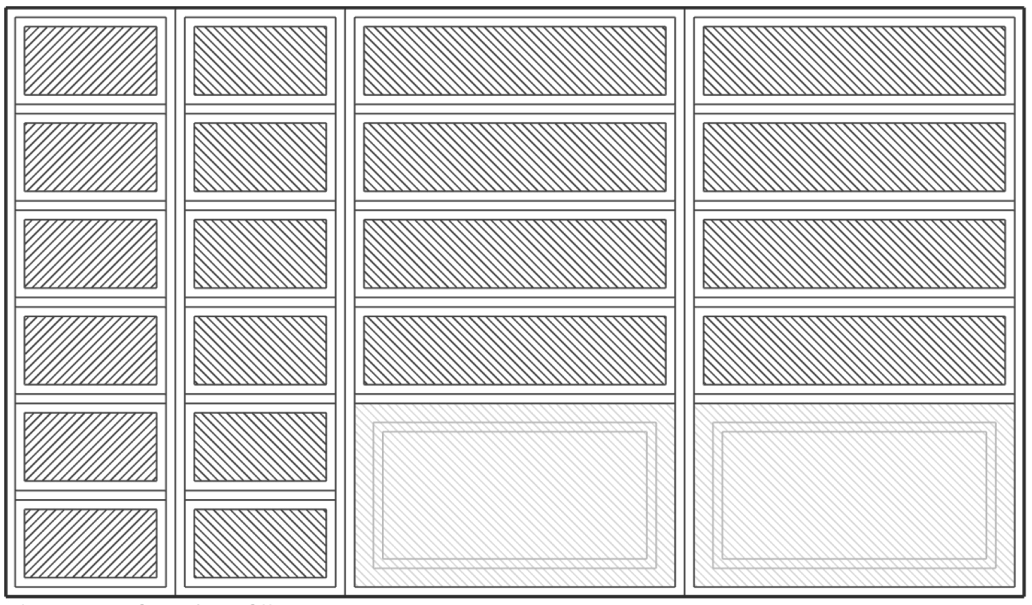


section | west-east | fragment | new | 1:75



section | floorplan | fragment | new | 1:75

Apartment

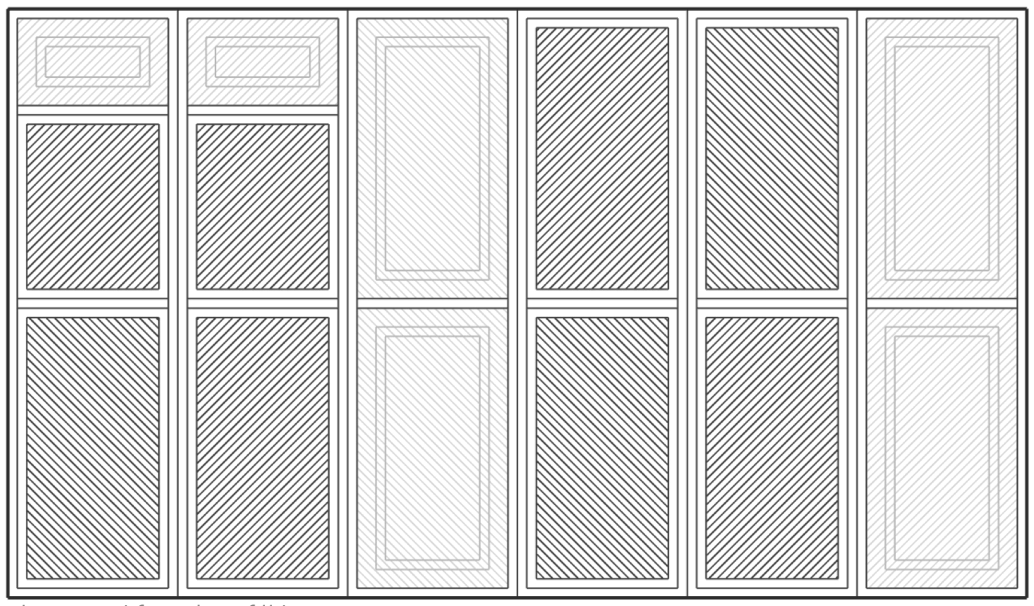


elevation | facade infill | apartment



impression | interior | apartment

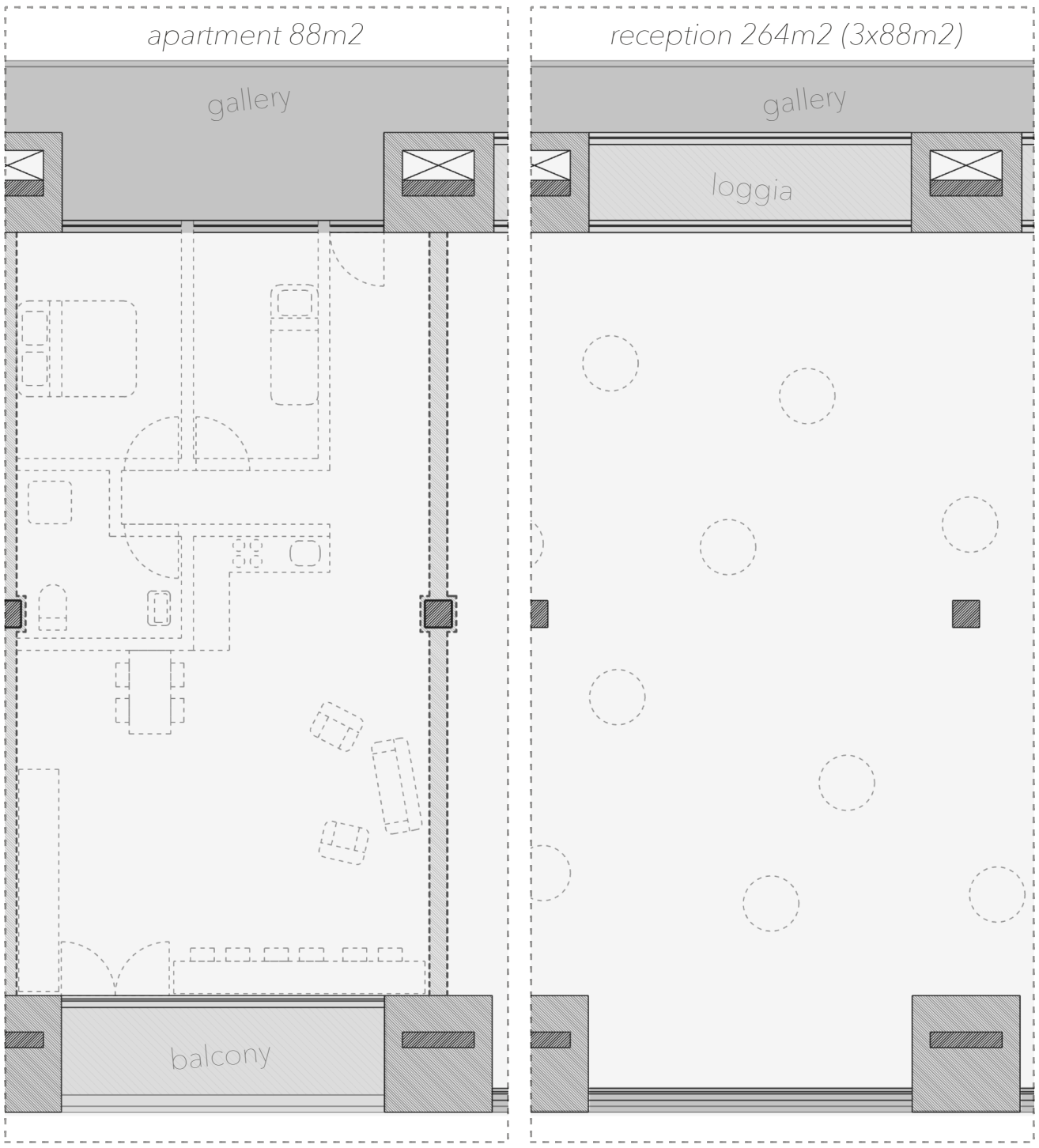
Reception



elevation | facade infill | reception



impression | interior | reception



floor plan | unit | 1:100 | scenario: apartment

floor plan | unit | 1:100 | scenario: reception

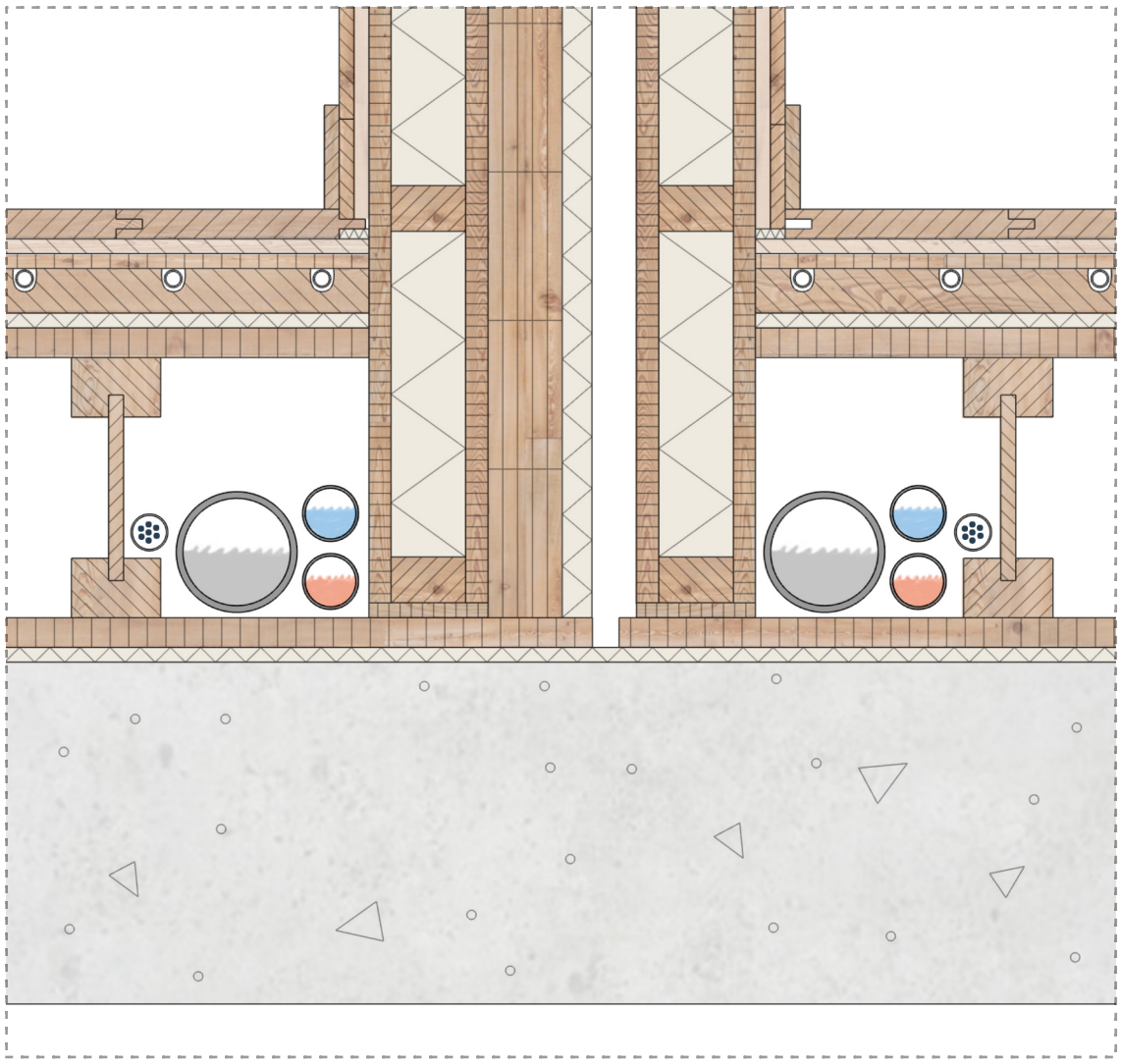
changing three-room apartment in reception hall

Here we see how a house of 88m2 can be turned into a reception hall of 264m2.

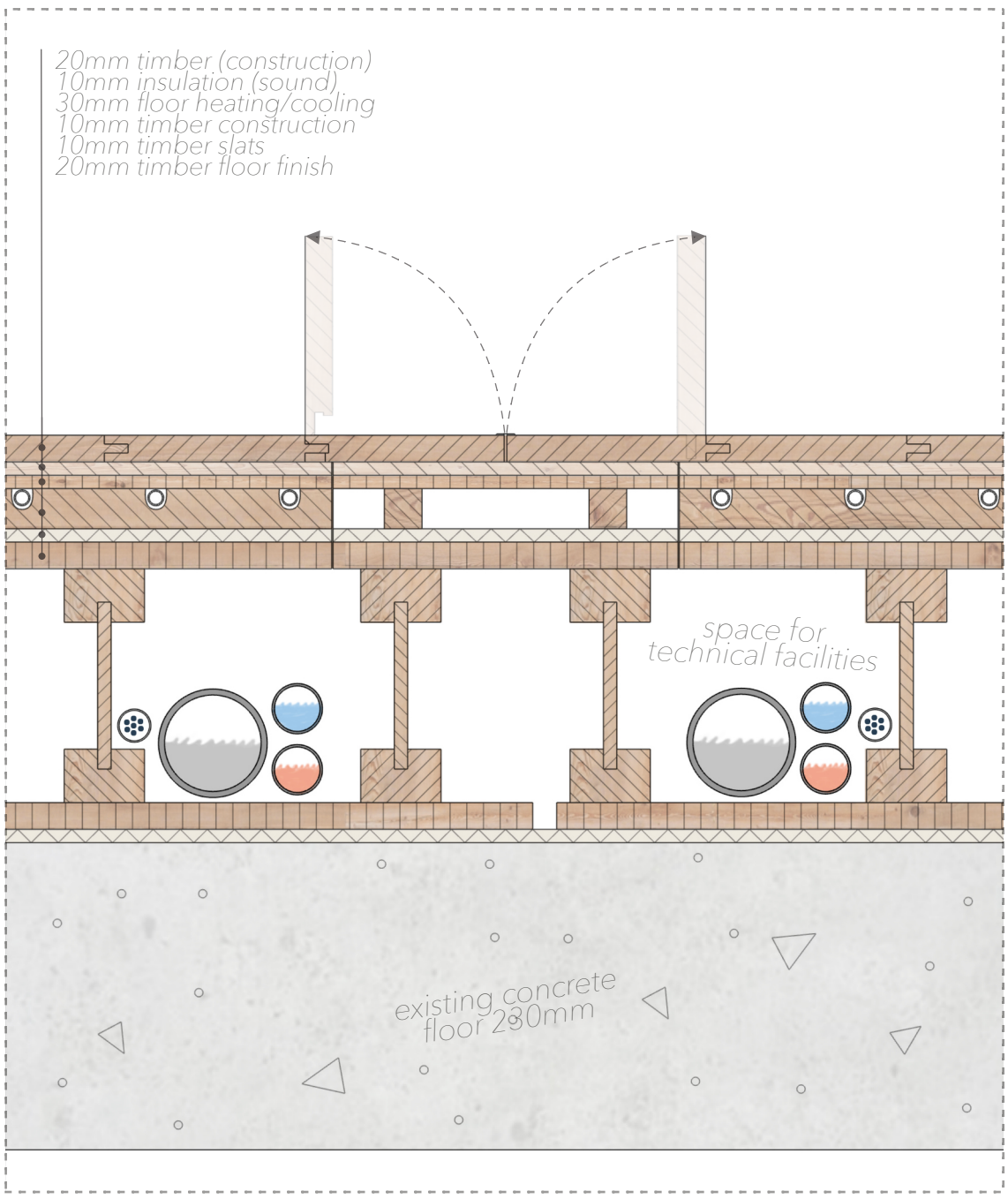
Not only can the filling itself change, but also the location of the filling from the inner edge to the outer edge of the boxes.
By unscrewing only two elements the window frame can be taken out and by unscrewing two other elements they can be placed in the other part. And by installing or removing the unit partition wall, the new requirements are met.

The balcony can change from inside to outside because the detailing is sufficient for an outdoor function.
Because the facade frame goes around the construction, an intermittent zone with a depth of 1m50 is created. This is exactly the minimum size of a balcony. For example, adding or removing the balcony has no consequences for the interior and the detailing.





floor detail 1:5 | with unit separating wall



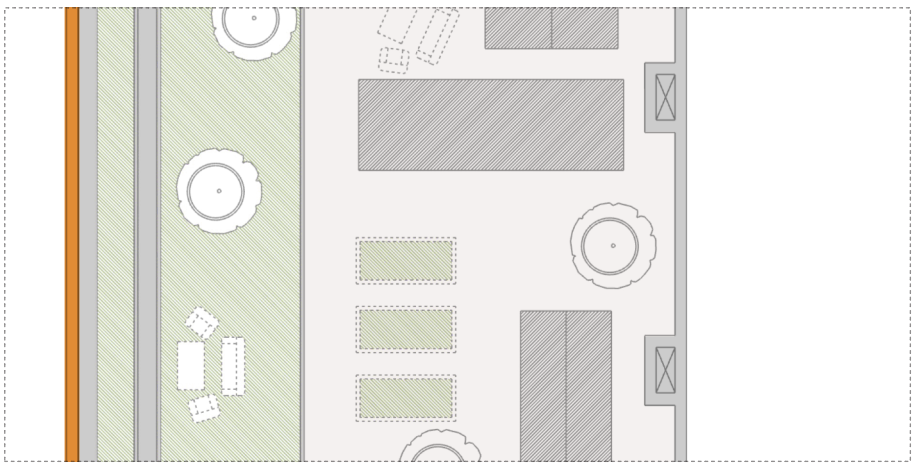
floor detail 1:5 | without wall

Easily adding or removing unit separating wall.

Every 7.2 meters there is a possibility to add a unit partition wall that is fire, insulating and sound proof. In this way, making the sizes of the units smaller or larger is no problem. The units are 12x7.2 meters in size, which equates to approximately 88m2. The floors are relatively high because all technical elements are hidden in the floor. In this way, adding or removing a wall does not affect the technical installations.

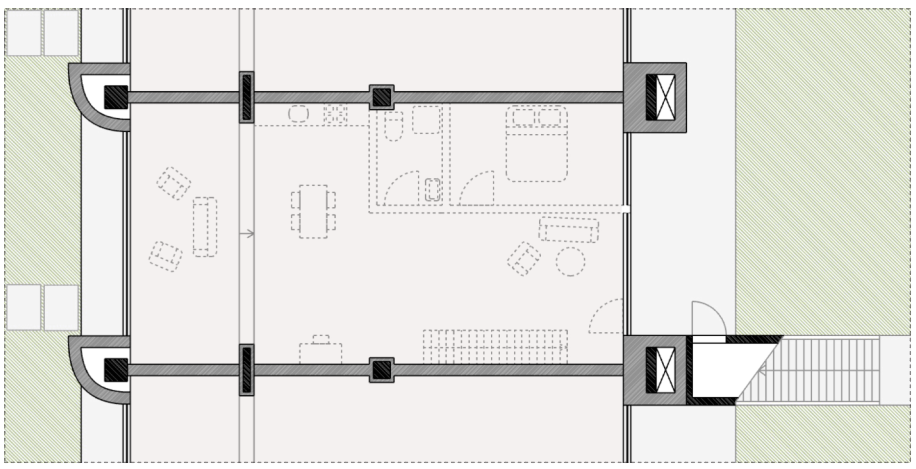
5 floor with 3 different functions: ground/middle/top

The ground floor is divided into smaller plots that cannot be changed, in order to share the quality of the ground floor with as many people as possible and to increase the urban liveliness on the street.
Levels 1-3 are flexible for change. Where level 1 is accessed via a staircase at the back and level 2-3 is accessed via an open air gallery at the back. The roof is an elevated street with a tiny house park.



floor plan | level 4 | new | 1:200 | roof | elevated street

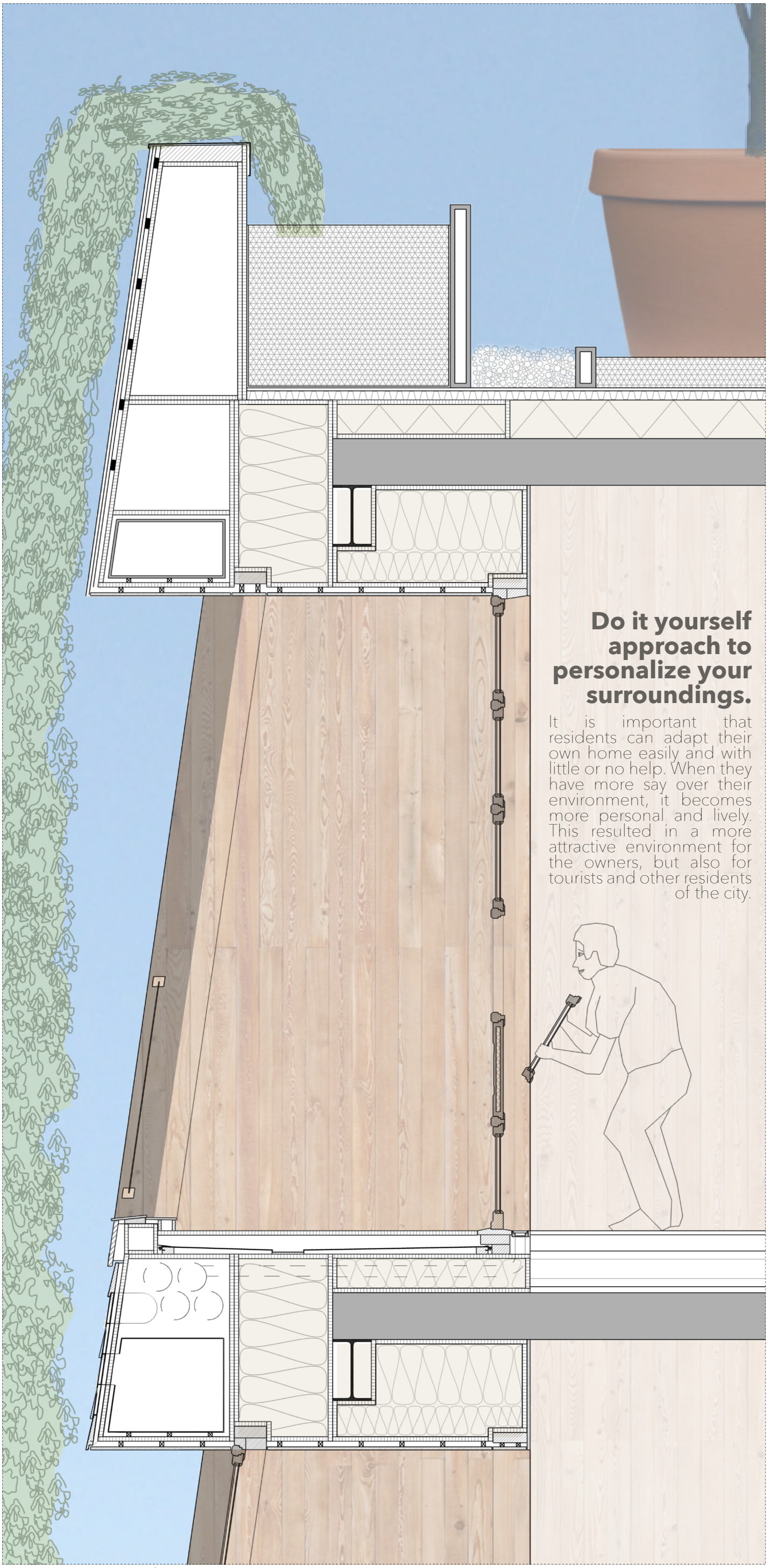
floor plan | level 1-3 | new | 1:200 | middle | flexible units



floor plan | level 0 | new | 1:200 | plinth | fixed units



elevation | west | fragment | new | 1:20 | middle & top



Do it yourself approach to personalize your surroundings.

It is important that residents can adapt their own home easily and with little or no help. When they have more say over their environment, it becomes more personal and lively. This resulted in a more attractive environment for the owners, but also for tourists and other residents of the city.

section | west-east | fragment | new | 1:20 | middle & top



Boter, Reinoud. 2013. "Verankerd." Bouwhistorie, 20 Jan. 2013, bouwhistorie.blogspot.com/2013/01/. Accessed 16 Oct. 2020.

BRINGING BACK THE ORNAMENT

In the image above, we see how wall anchors were used as ornaments. We can learn from vernacular here: *Be honest about the function, but not shy to spice it up.*



Two grilles, one as an air inlet and one as an entrance to an insect hotel.



Two air inlets per unit (7.2 meters), one of which can be closed / opened if demand changes.

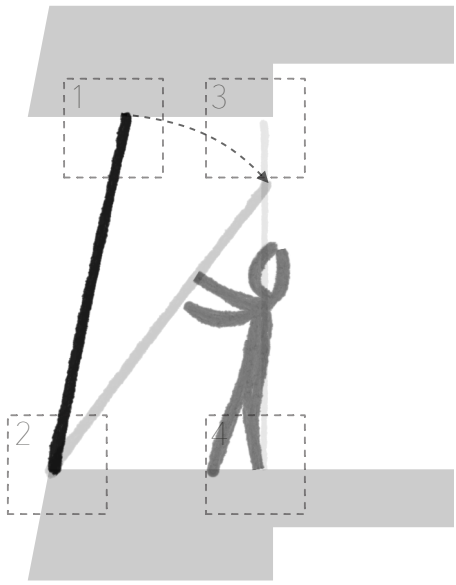


Construction ornament of the facade.

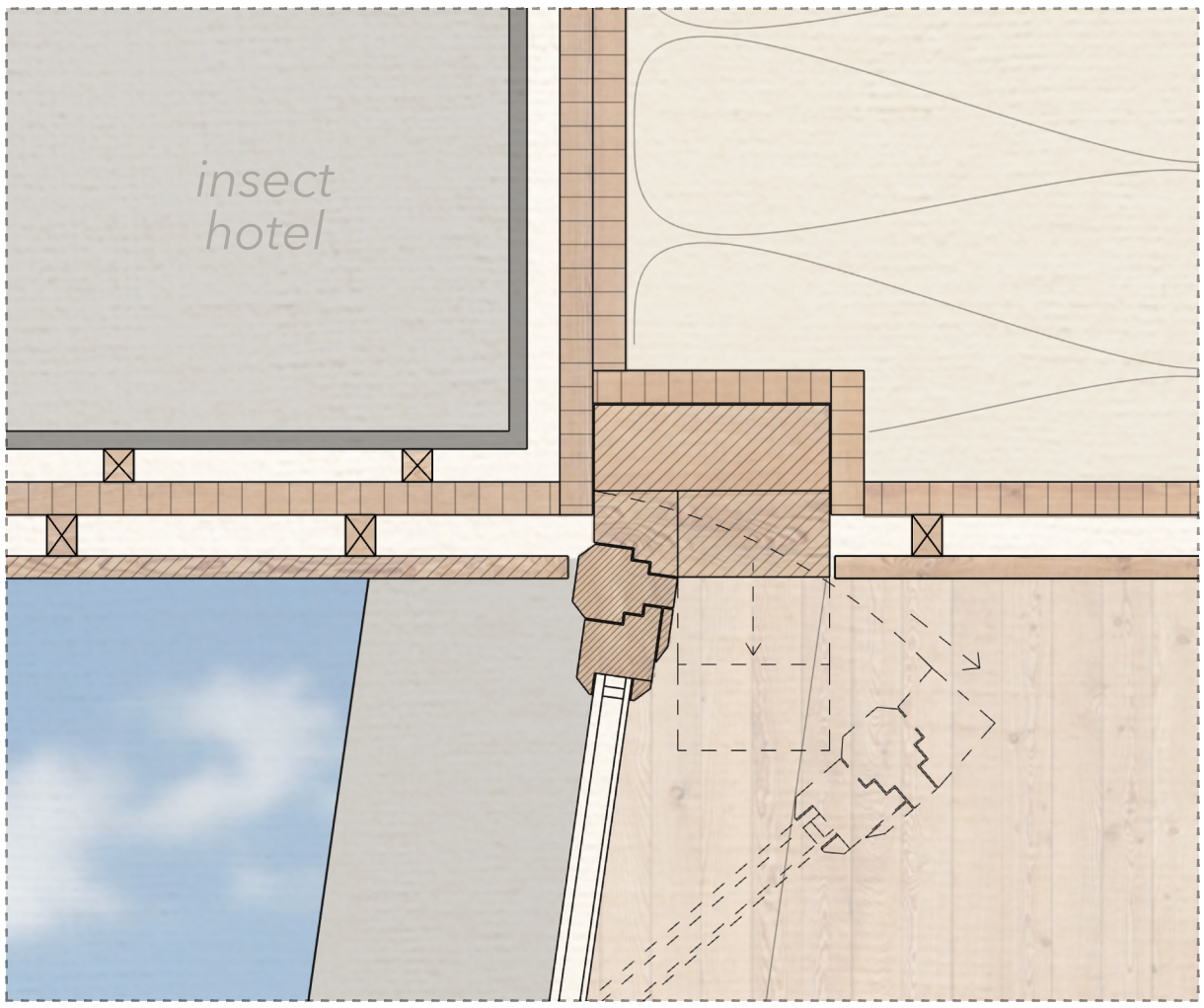
distance and detail

As the research showed, there is a relationship between distance and detail. The closer we get, the more detail we need.

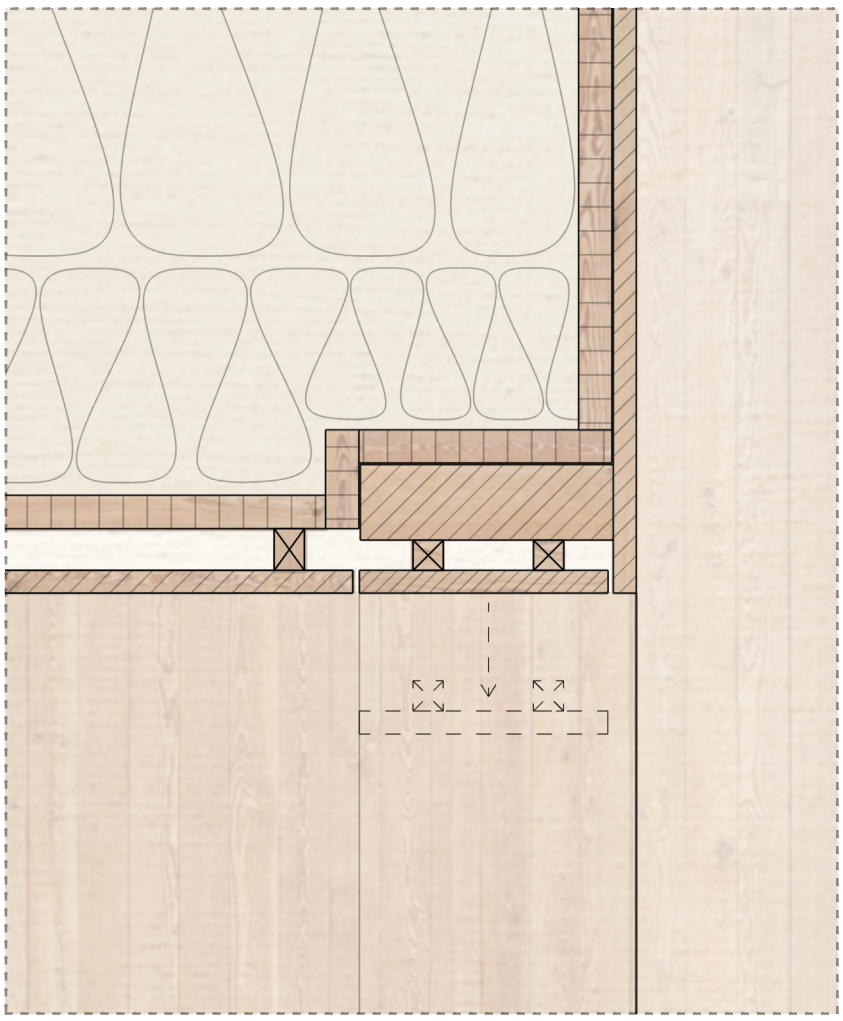




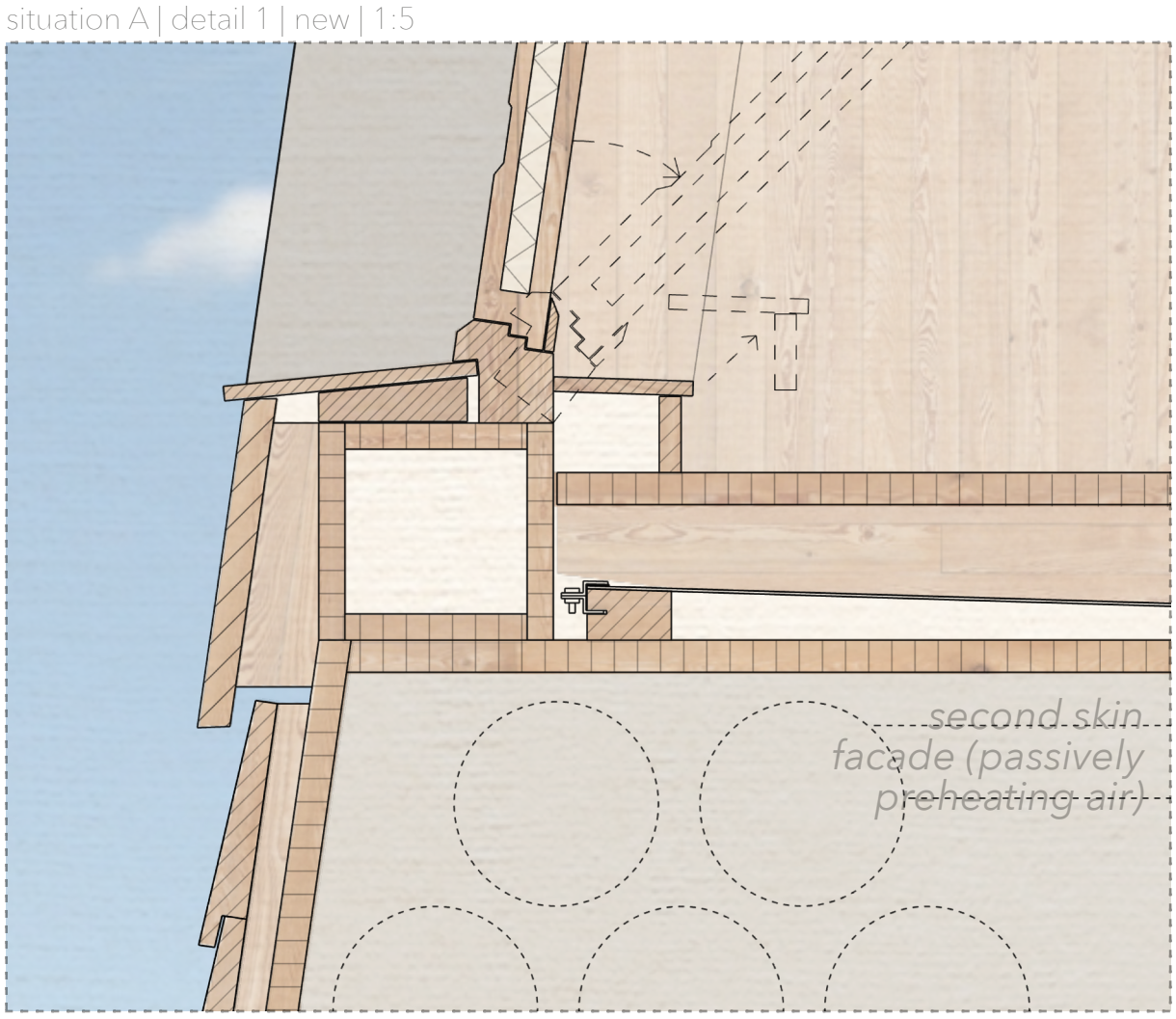
A | *bay window* | interior



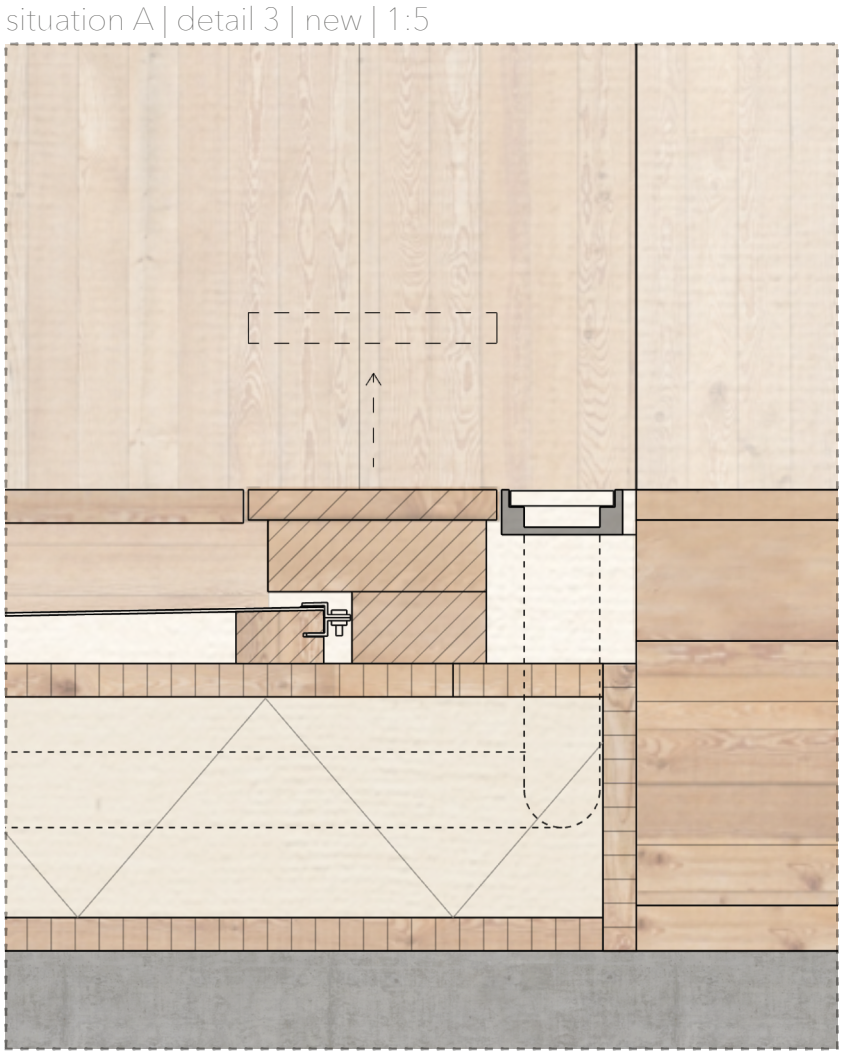
situation A | detail 1 | new | 1:5



situation A | detail 3 | new | 1:5

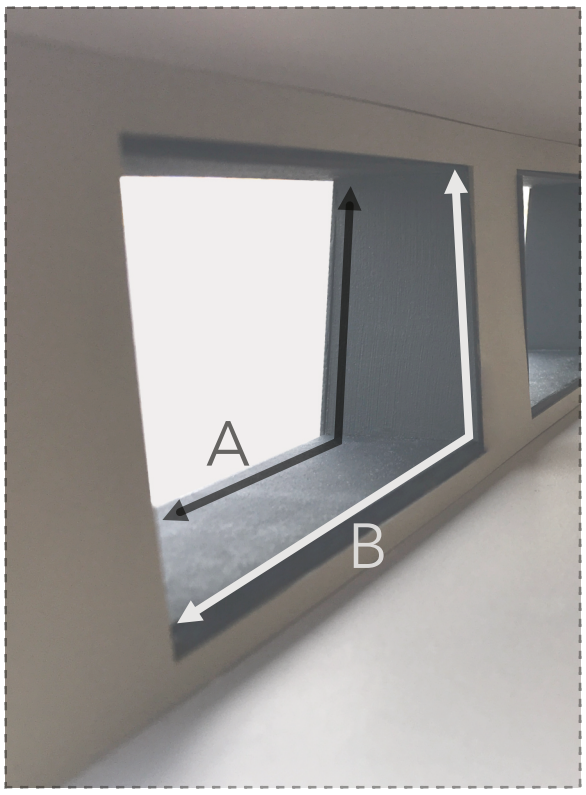


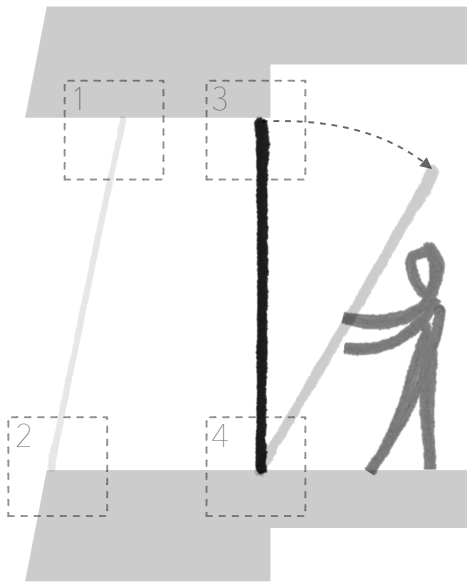
situation A | detail 2 | new | 1:5



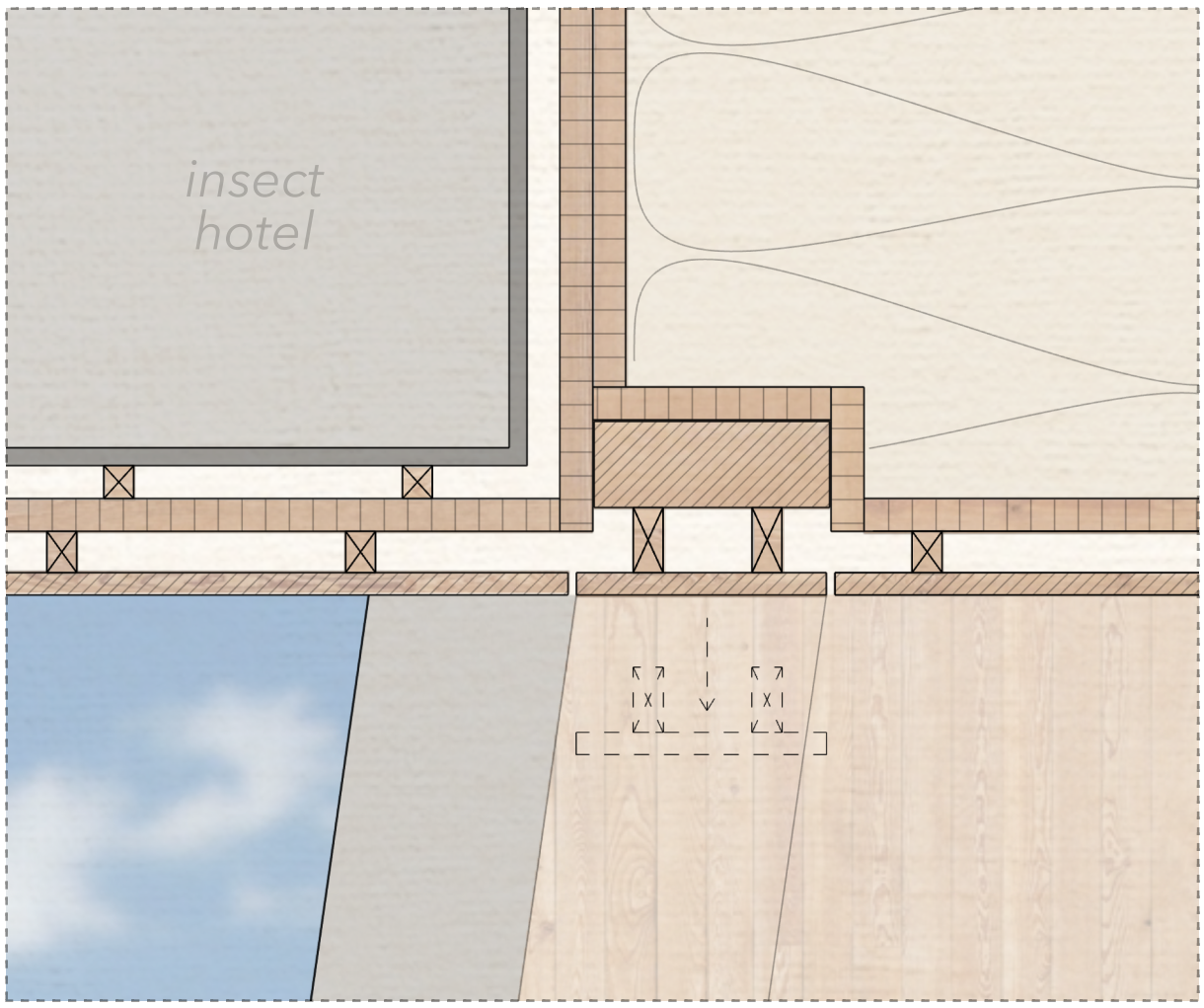
situation A | detail 4 | new |

Bay window or balcony, exchanged in no time

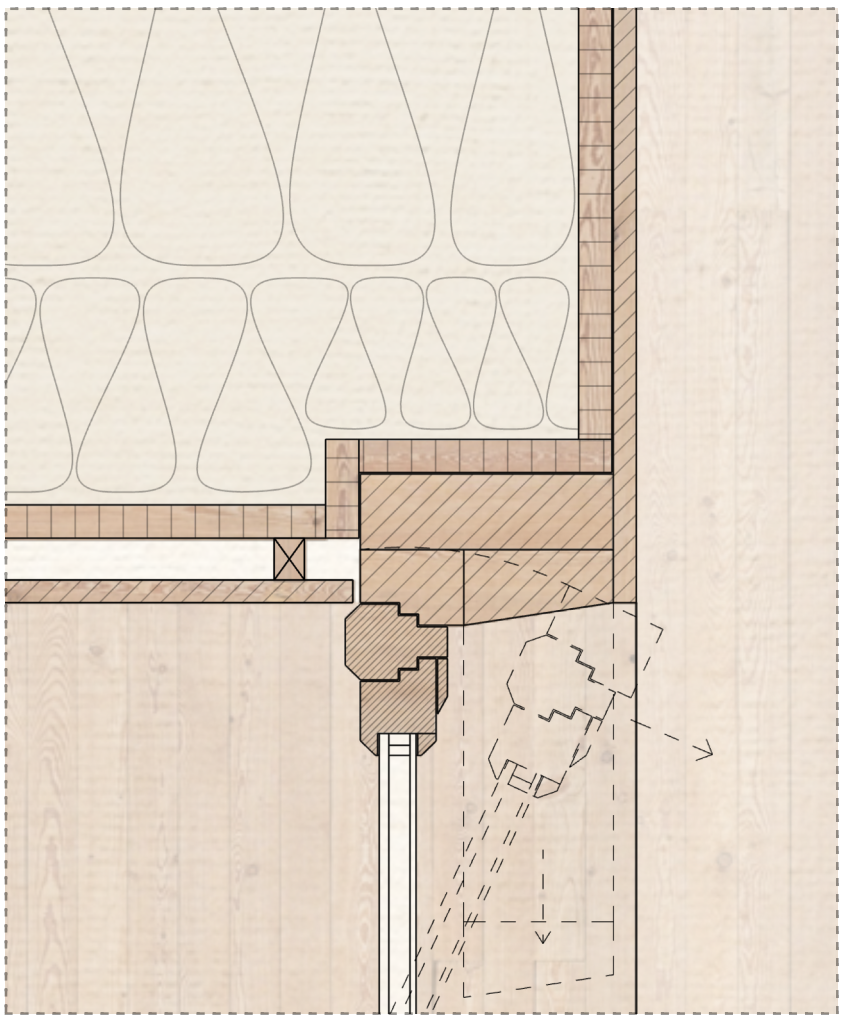




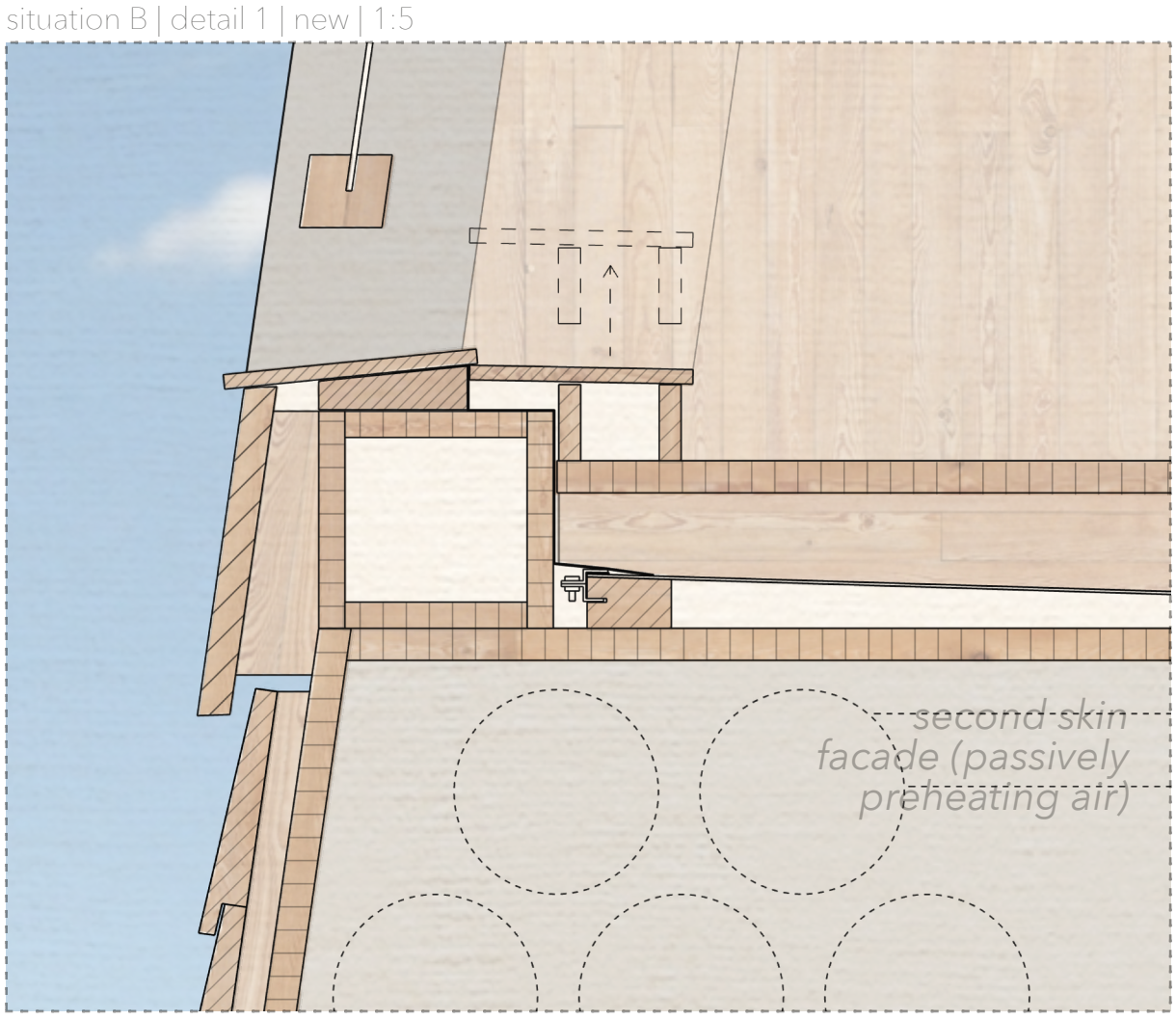
B | *balcony* | exterior



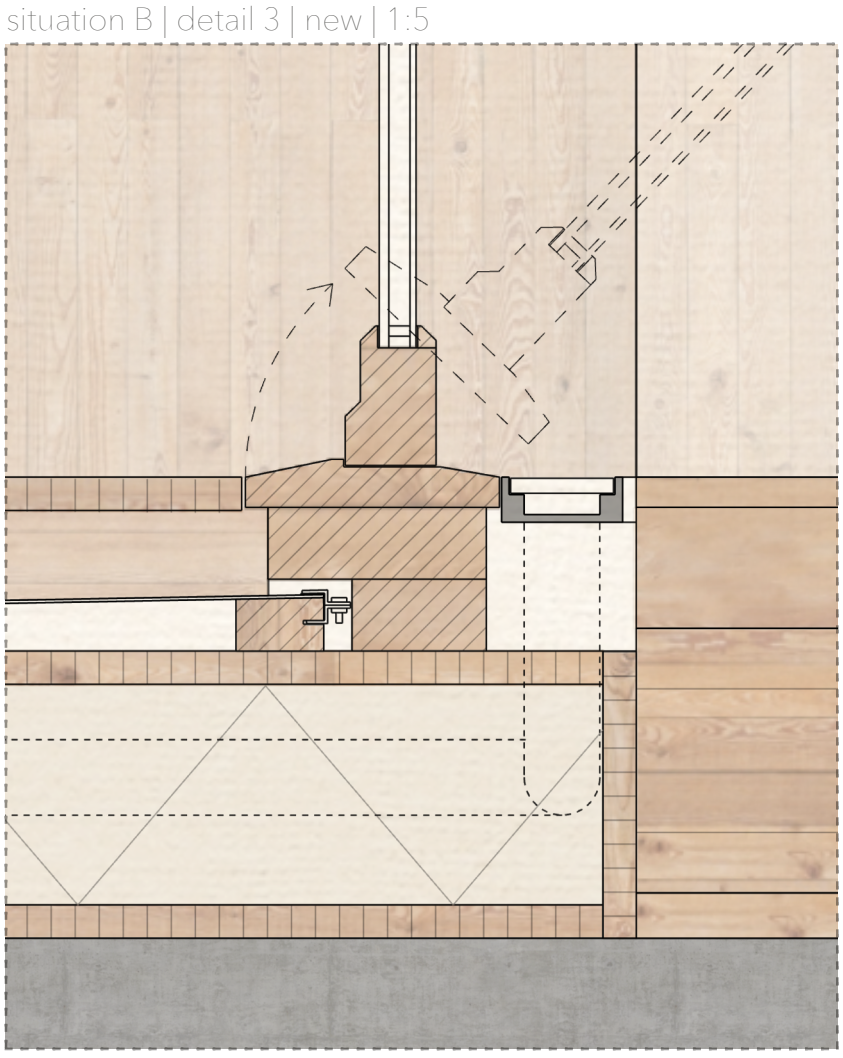
situation B | detail 1 | new | 1:5



situation B | detail 3 | new | 1:5

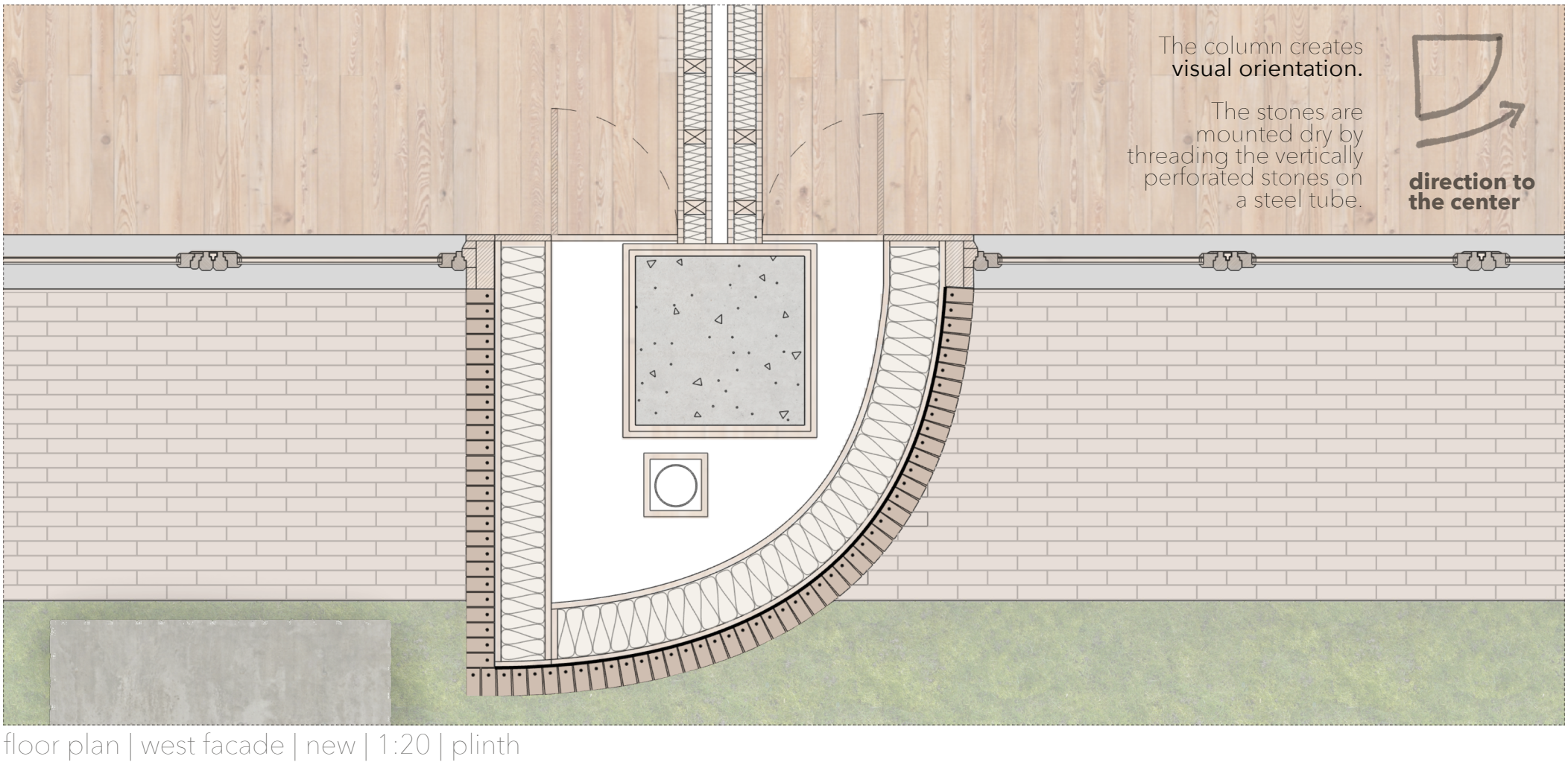


situation B | detail 2 | new | 1:5

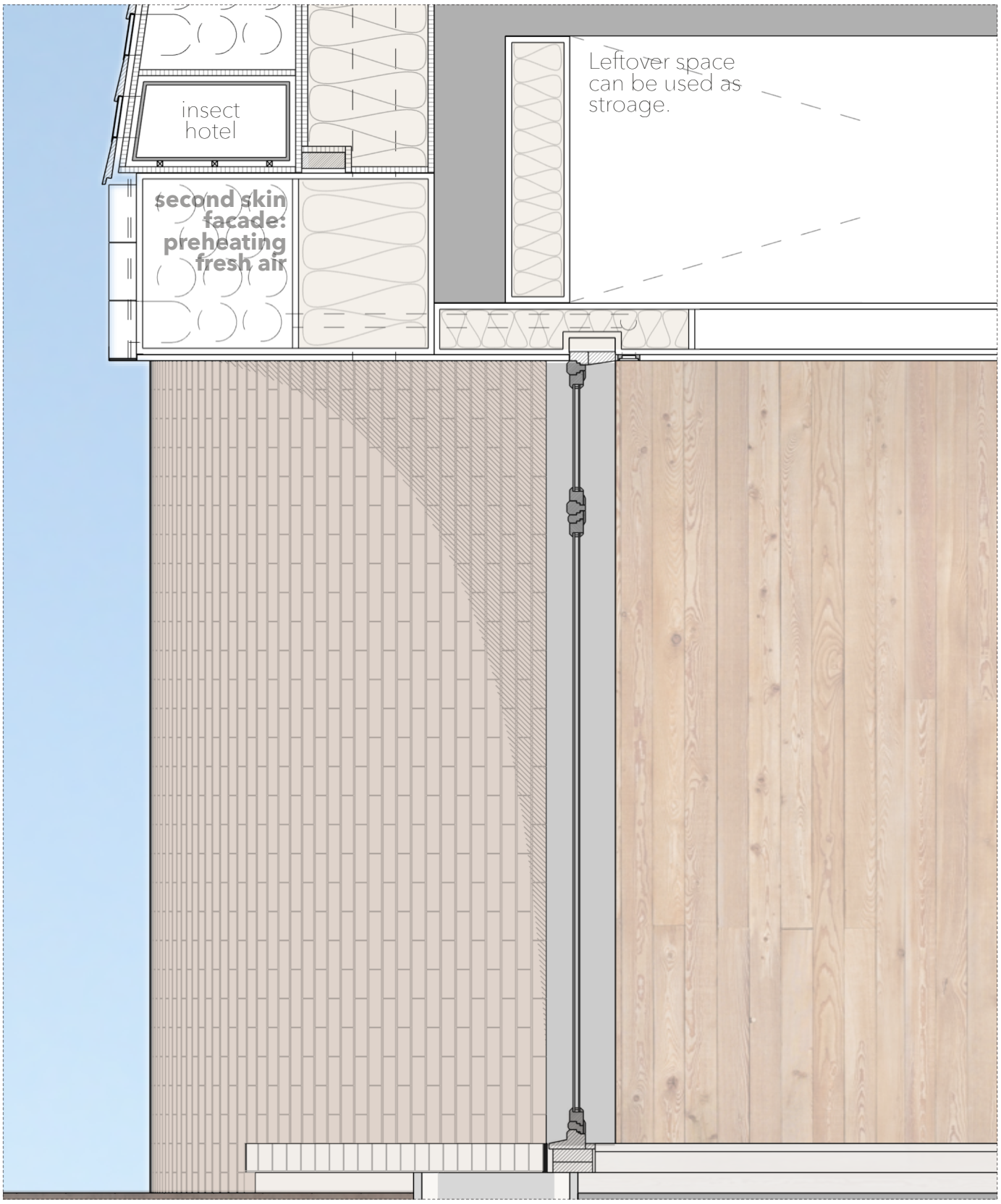


situation B | detail 4 | new | 1:5

elevation | west | new | 1:20 | plinth



floor plan | west facade | new | 1:20 | plinth



section | west-east | new | 1:20 | plinth

The plinth is key to creating liveliness.

The ground floor is really crucial to a building's ability to facilitate urban liveliness. Here we see how the entrance is recreational and there is an opportunity to meet new people. At the same time, with the transition zones and their different heights, there is also privacy. The column on the ground floor also helps to create privacy between the units. In addition, the columns are rounded (quarter circles) and subtly point in the direction of the center.

It is important that as we get closer to the building, more details become visible. The smaller scale of the brick and its warm texture create intimacy and a human scale.

Contrasting the darker middle part, the more light ground floor, seems more inviting and lively (this again *function emphasize*).

Learning to build.

People must regain control over their environment. Learning to build is the key to making this project a success. Therefore, creating a common workshop with a professional to assist is an important aspect to make this concept work.

Communal workshop in the plinth to create, meet and learn.

In the workshop, users and residents can adjust parts of their facade and personalize their own home together with a professional. Here they can also meet other residents and users and thus form a community.

The plinth is the place where people meet and where strangers pass by. The plinth is like a business card, it provides the opportunity to bring people into contact with a new concept.

The workshop can be a place where passers-by can get more information about the building. In this way new people can be made enthusiastic for this new way of building and living.



local form language
Amsterdam School


"Google Maps." n.d. Google Maps. Accessed October 16, 2020. https://www.google.com/maps/@52.3876218.

urban impression | current



urban impression | new



aligning with a form language versus copying an image

The new facade has a very specific form language, which differs from the anonymous exciting facade. For this aesthetic I looked at the local architecture of the Amsterdam School because it matched the building volume.

To avoid copying an image, as I learned in my research, I translated the form language into abstract parameters and used these parameters in the design, resulting in these new interpretations.

The park, the openness, the colors, the tiny houses, the spontaneous greenery that overhangs from the roof and the contrasting colors and shapes of the plinth, middle and top create a lively new look. On a larger scale, we see here how this new facade creates a Dutch atmosphere that is in stark contrast to the anonymous, non-location-bound aesthetic of the original design.



(1)Roelienke. "100 Jaar Amsterdamse School - Kleurontwerp Voor Corporatievastgoed." Roelienke - Kleurontwerp Voor Corporatievastgoed, 23 May 2016, www.roelienke.nl/100-jaar-amsterdamse-school/. Accessed 16 Oct. 2020.



VERTICAL/ HORIZONTAL

image 1



(2) "100 Jaar Amsterdamse School: Dit Zijn de Mooiste Gebouwen - Roomed | School Architectuur, Historische Architectuur, Architectuur." Pinterest, nl.pinterest.com/pin/113997434296180534/?nic_v2=1a3Prtdq3. Accessed 16 Oct. 2020.



ROUND FROMS

image 2

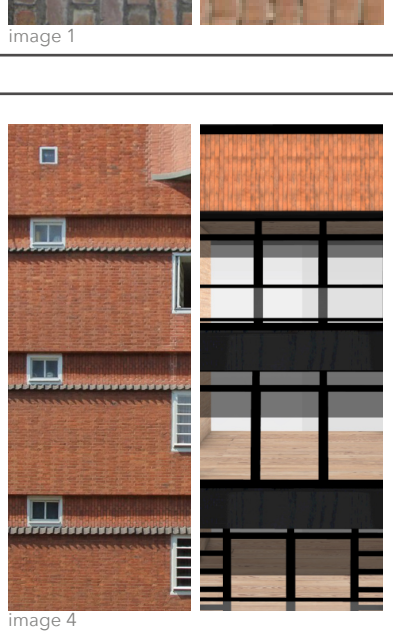


(3) Forget, Patrick. "Het Ship Building in the Spaarndam Quarter, Architecture of the Amsterdam School by Michel de Klerk, Amsterdam , Netherlands." www.agefotostock.com, 24 Sept. 2006, www.agefotostock.com/age/en/Stock-Images/klerk.html. Accessed 16 Oct. 2020.



DISTINCT (WINDOW) FRAME

image 3



(4) Staticflickr.Com, 2020, live.staticflickr.com/3462/3885872007_1af356fa0c_b.jpg. Accessed 16 Oct. 2020.

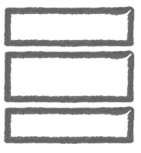


HORIZONTAL EMPHASIS

image 4

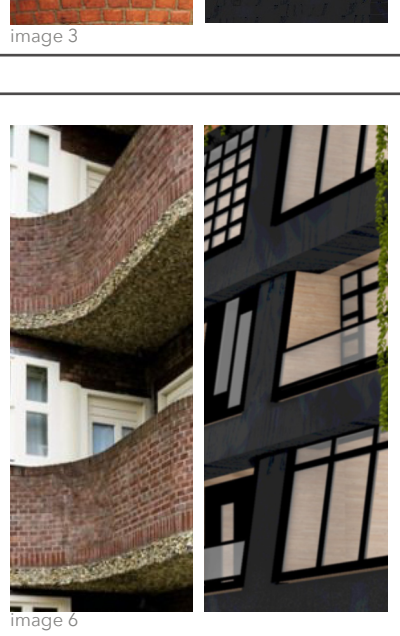


(5) "Amsterdam." Municipal Dreams, municipaldreams.wordpress.com/category/amsterdam/. Accessed 16 Oct. 2020.



PLINTH MIDDLE TOP

image 5



(6) ""Het Schip" Amsterdamse School, Arch: Michel de... - Vintage, Arts, Architecture (1900-1980)." Danismm.Tumblr.Com, danismm.tumblr.com/post/160650855554/het-schip-amsterdamse-school-arch-michel-de. Accessed 16 Oct. 2020.



DEPTH

image 6

Amsterdam School

The Amsterdam School is an architectural style from the same period as Modern Architecture and can be seen as a reaction to the neo-styles. The expressionism of the Amsterdam School was the opposite of the new building.

The principal architects within this architectural style were Michel de Klerk, Piet Kramer and Jo van der Meij. They all work at the office of Eduard Cuypers in Amsterdam but started their own office around 1910 where they developed this architectural style. De Klerk died in 1923 as a result of which the Amsterdam School lost their main figurehead, yet they continued to exist for another decade.

Characteristic of the Amsterdam School is the use of a lot of brick and the application of decorations in the facades. The often sculptural facades are usually filled with 'ladder' windows and (a window with many subdivisions).
Buildings from the Amsterdam School period are mainly large (social) housing projects, schools and some utilitarian works. Due to the plastic facades and the playful layout thereof, there is seldom any solidity in the buildings within this style. They are big, but still look human.



our relation with waste

In the photos we see the waste in Delft on the street, as a result of renovations. There is a lot of waste production in our society that we have to deal with responsibly. In redevelopment, we must be accountable for the waste we produce with our redesign.

Photograph by author, Delft. January-March, 2020.

DEGREES OF PERMANENCE

We can make a distinction in the degree of durability. We can talk about the building's software and hardware. Where the hardware is the construction and the software the facade and the interior. Because the material is used longer, it is more acceptable if the material is less biodegradable.

software

- interiors
- 5 to 15 years
- biodegradable & compostable
- no glue
- dry mounting
- little standardization
- more free forms

hardware

- construction
- 50 - 100 years
- more standardized measurements
- less easily biodegradable



existing office

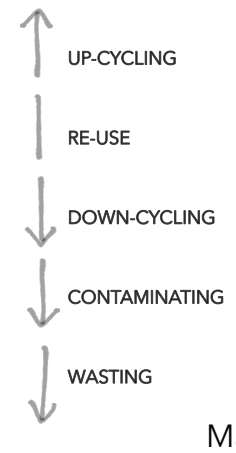
taking materials out →	windows	**reuse**	*sell*
	natural stone tiles	**reuse**	*sell*
	floor	**down-cycle**	*sell*
	insulation	**wasting**	
	ceiling	**wasting**	
	timber elements	**wasting**	

Currently the building is like a standard office. To make the building multifunctional, we need a different framework. By removing all covering materials in one go, we increase the possibility of reuse versus waste of the current materials. However, as far as I know, certain elements cannot be reused, nor are they biodegradable, which unfortunately leads to wasting.

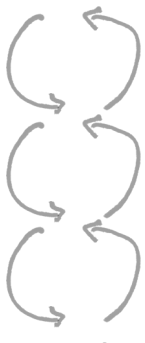
MATERIAL STRATEGIES



Cradle to Cradle regards waste as food and thus makes materials that can be recycled back into the natural cycle. This amounts to waste that is compostable or biodegradable.



UpCycle Amstel looks linearly at materials. They see material separate from nature.



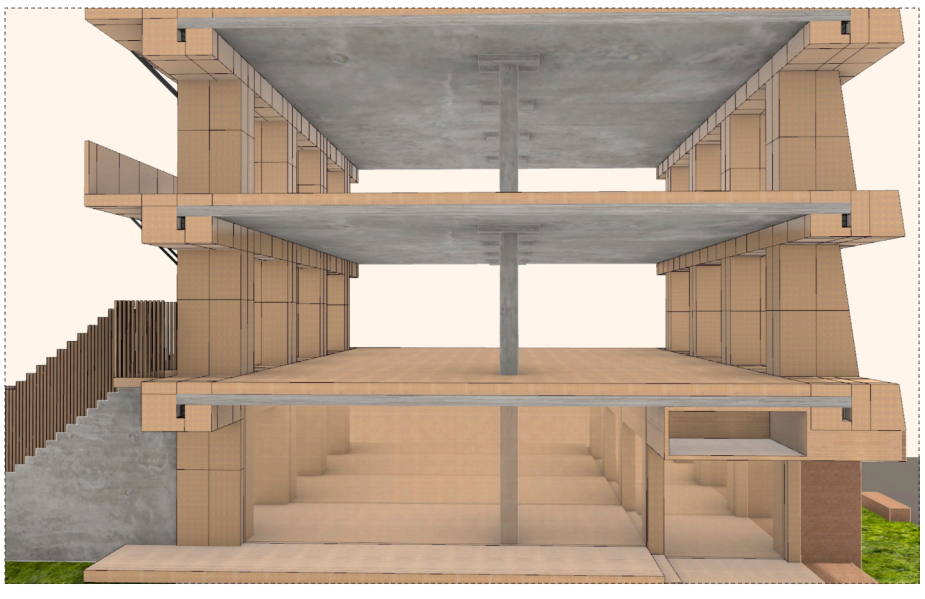
Material Matters combines these two approaches, where the material is central and after use for a particular function, the material must be returned in its original state. (This suggests a biodegradable end result, but in its functional life it can temporarily become a more complex element, as it performs a more demanding function.)



zero-point

removing structure →	concrete construction	**down-cycle** + *reuse in the design*	
adding structure ←	steel I-profile beams (300cm)		

This peeling results in the building's zero point. At this level I do one big permanent intervention. I replace the concrete slabs with steel I-profile beams. This has such a great impact on the flexibility and quality of the building that it is worth it. The concrete will be reused in the new staircase at the back of the building.



new hardware

adding ←

- facade 1: *frame*
- gallery
- stairs
- floors (300mm)

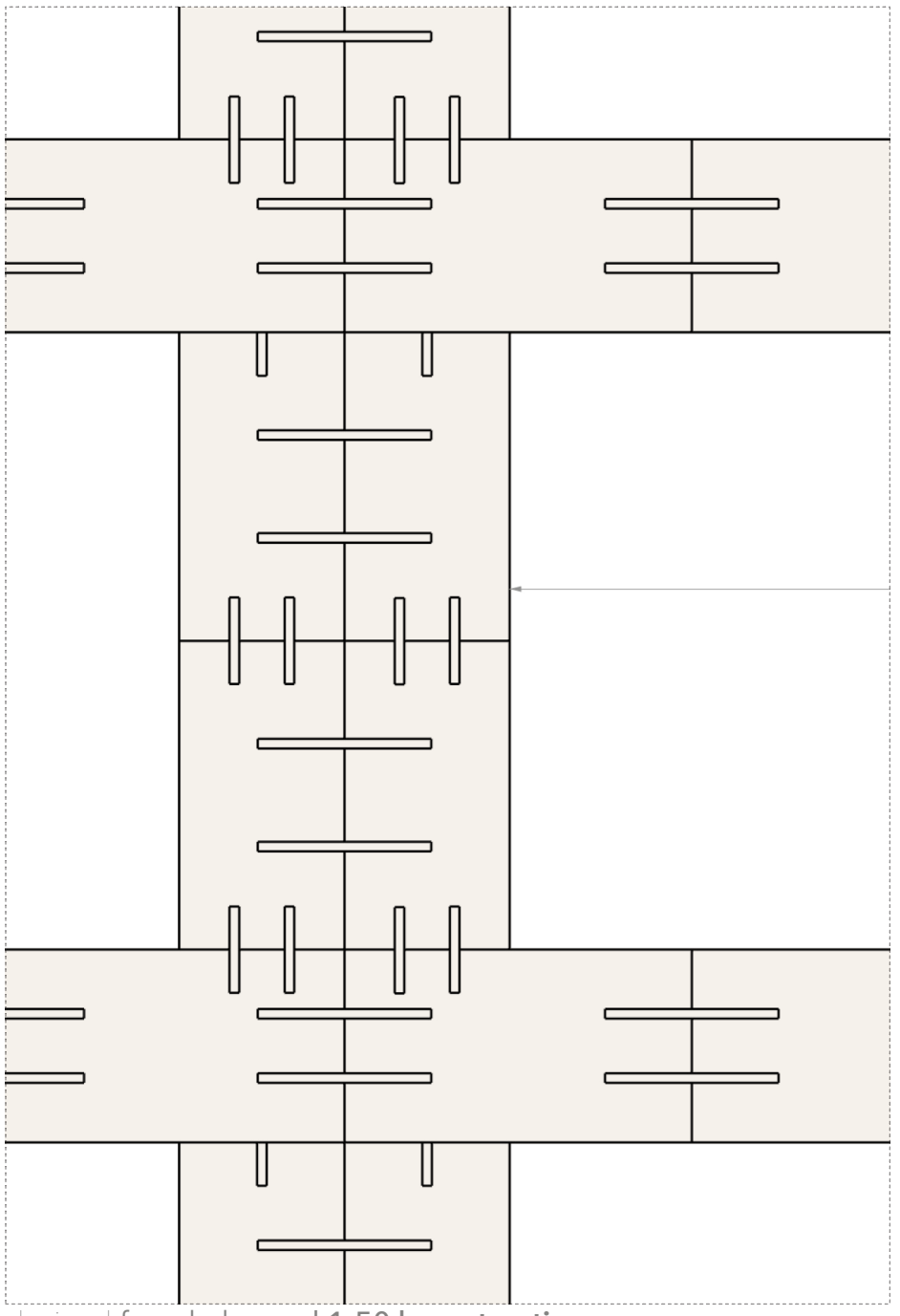
Here we see the new hardware with a facade packaging, raised floors, galleries and stairs at the back. My challenge here was to use biodegradable materials, leave the construction unharmed, and use small-scale machinery.

construction



FRAME

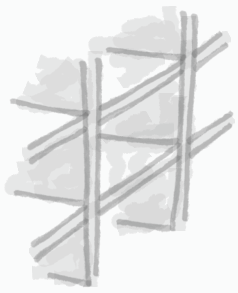
fixed
closed
protection



design | facade boxes | 1:50 | **construction**



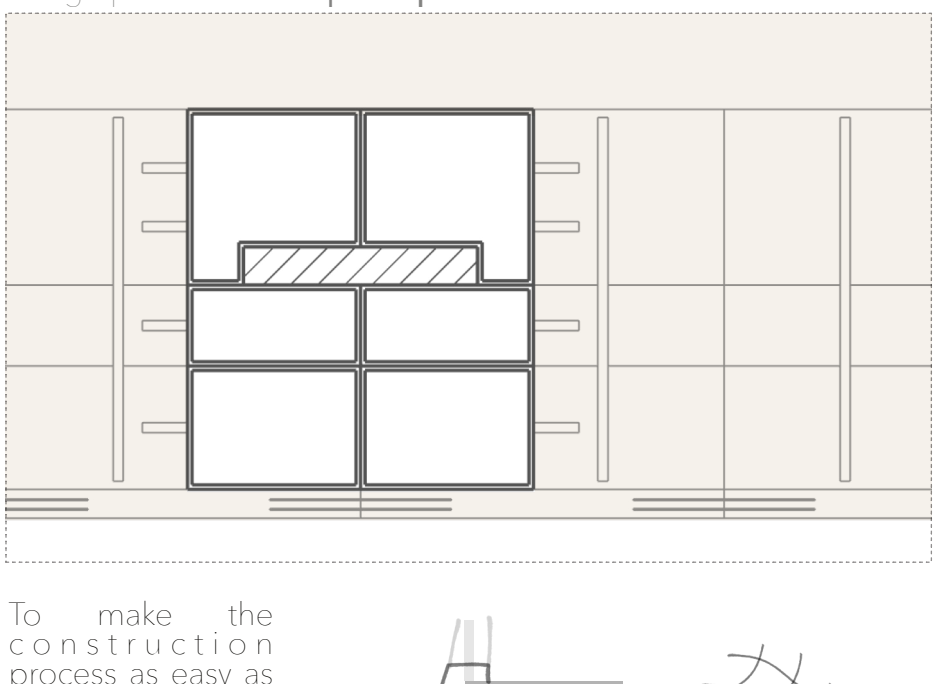
small scale machinery

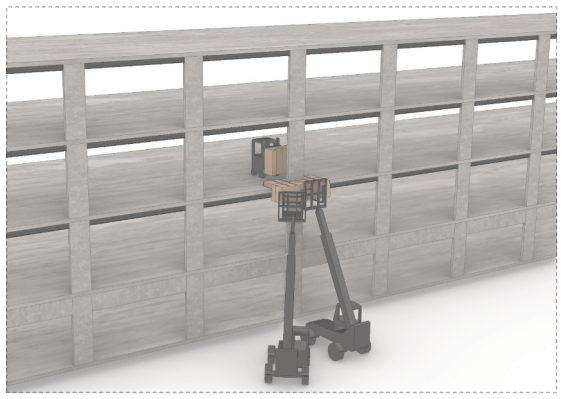


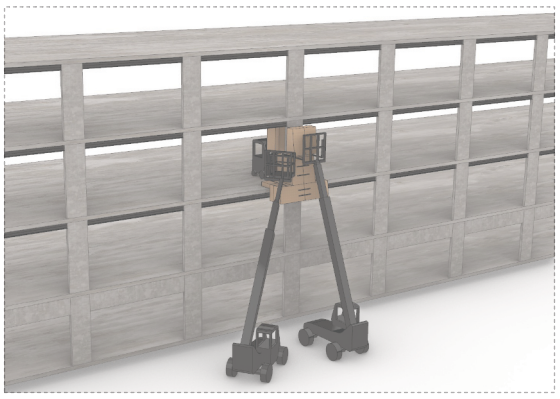
unharmed construction

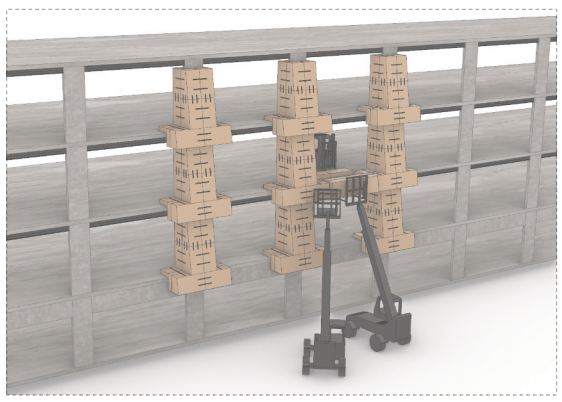


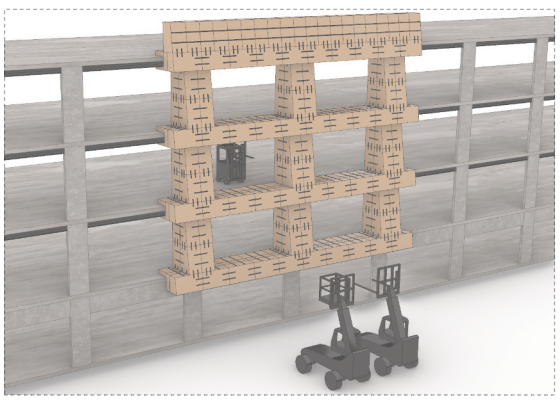
biodegradable materials







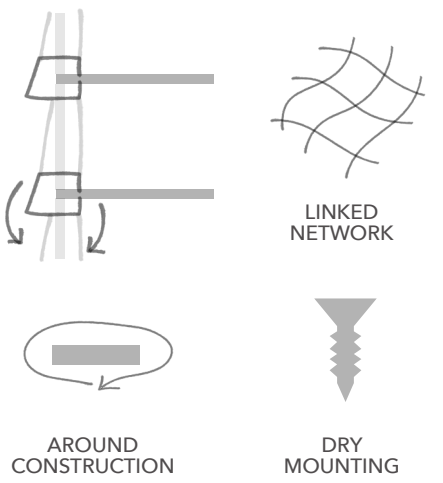




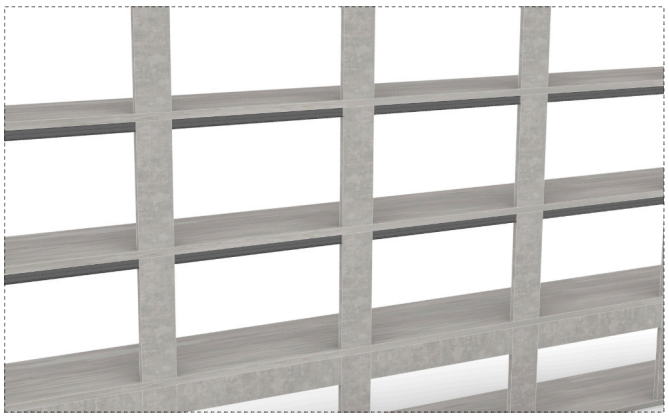
To make the construction process as easy as possible, I use forklifts and elevators instead of a crane.

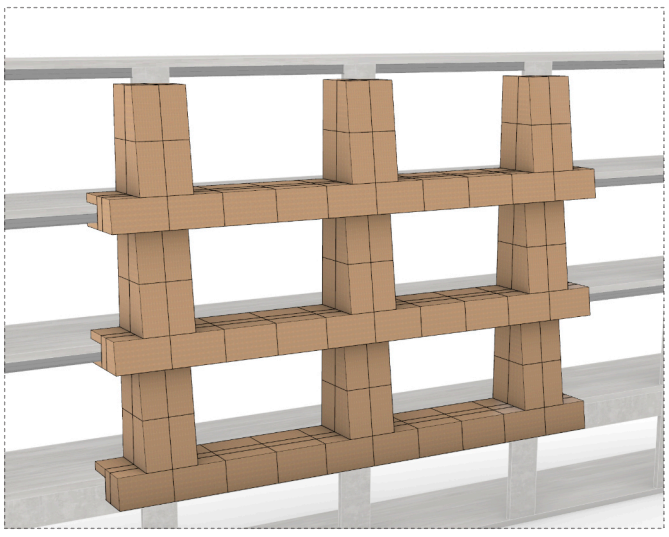
This means that the dimensions of the boxes are limited by the size of the lift.

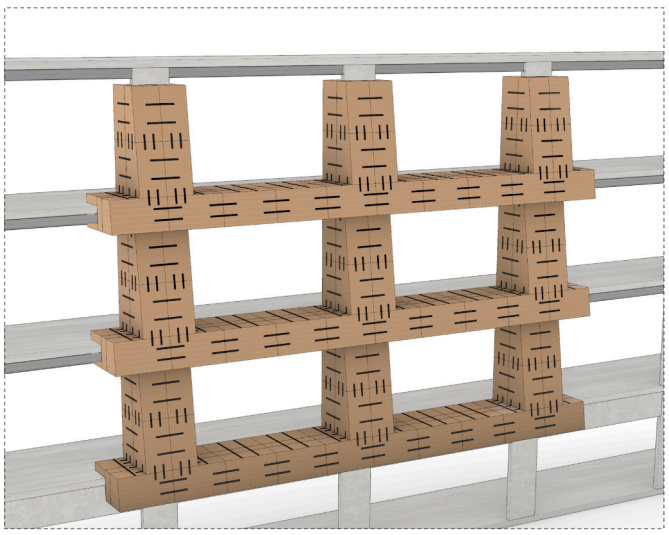
The elements are places with three forklifts by three professionals. There is a small lift truck inside and two larger lift trucks, one with a basket for one person and the other operated from the ground.



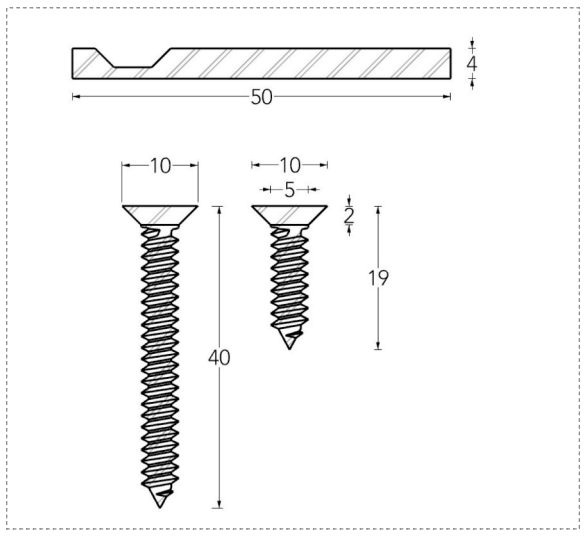
Because we are dealing with the reuse of a building, the existing concrete construction is the starting point. Together with the challenges, this resulted in a concept of wooden boxes, where the boxes are connected to each other and form a network that goes around the construction and does not need to be attached to it.



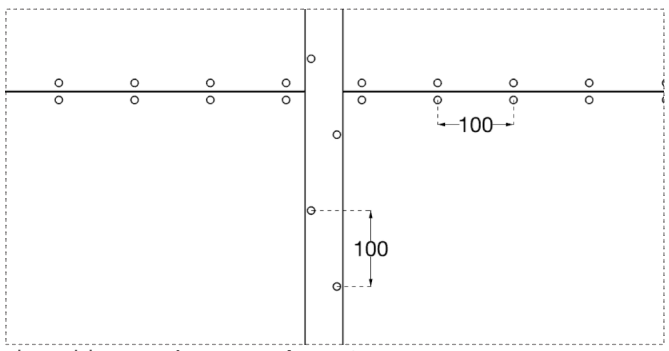




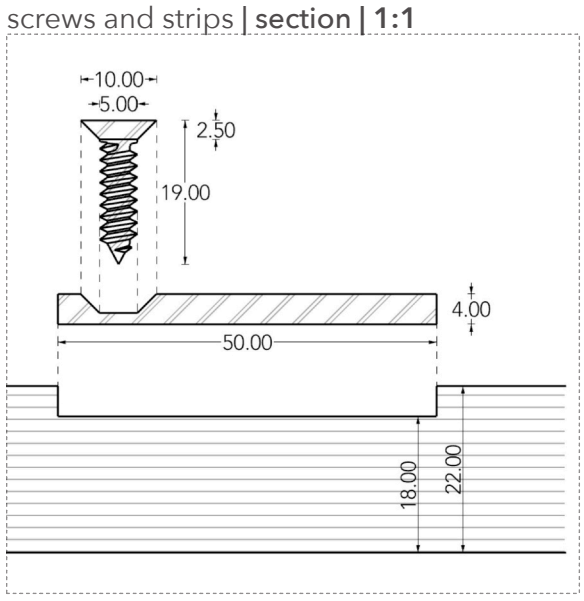




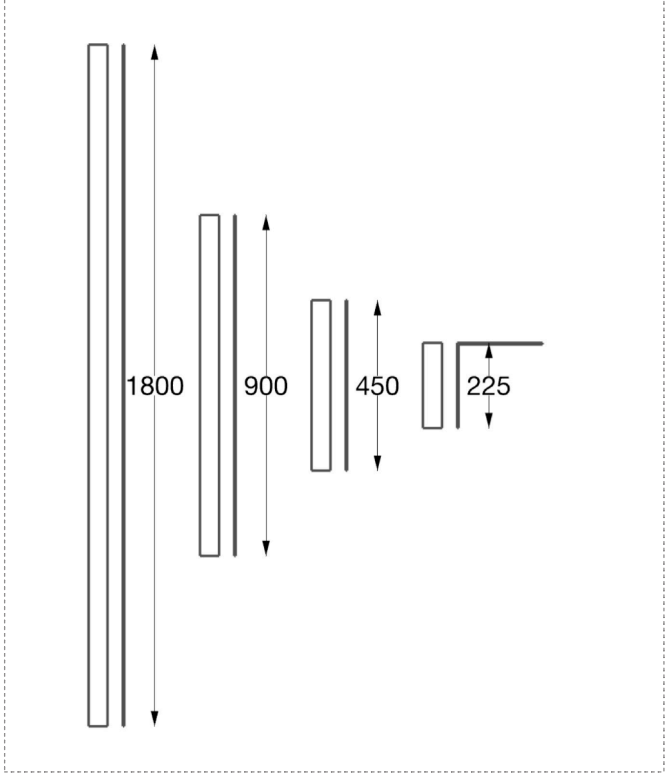
screws and strips | **section | 1:1**



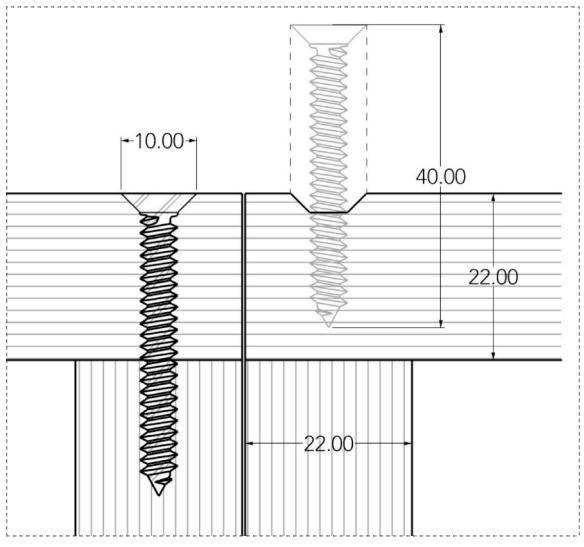
detail boxes | **screws | 1:10**



detail boxes | **strip | 1:1**



strips | **sizes | 1:20**



detail boxes | **corner | 1:1**

MATERIAL USE

The boxes consist of 100% biodegradable, non-toxic fiber boards that are made from recycled wheat straw and that are screwed together. The boxes are attached to each other with steel strip strips and screws. This is a dry construction method without glue to keep the materials biodegradable.

The boxes can be easily put together by an amateur with an electric screwdriver, it is like an IKEA kit. Installation is done by three professionals who handle three forklifts (two larger outside and one smaller inside).



"Wheatboard Ecoboard - Environmentally Friendly MDF Alternative." Chesapeake Plywood - Wholesale Plywood - Plywood Suppliers, chesapeakeplywood.com/wheatboard-ecoboard/. Accessed 16 Oct. 2020.

RAW ECOBOARD

Made of 100% high-quality recycled natural wheat straw fibre. Produced in hot pressuring process.

- 100% biodegradable
- non-toxic (formaldehyde-free)
- resistance deformation
- moisture resistance
- fire resistance
- good nail holding performance
- moisture proof

STEEL ELEMENTS

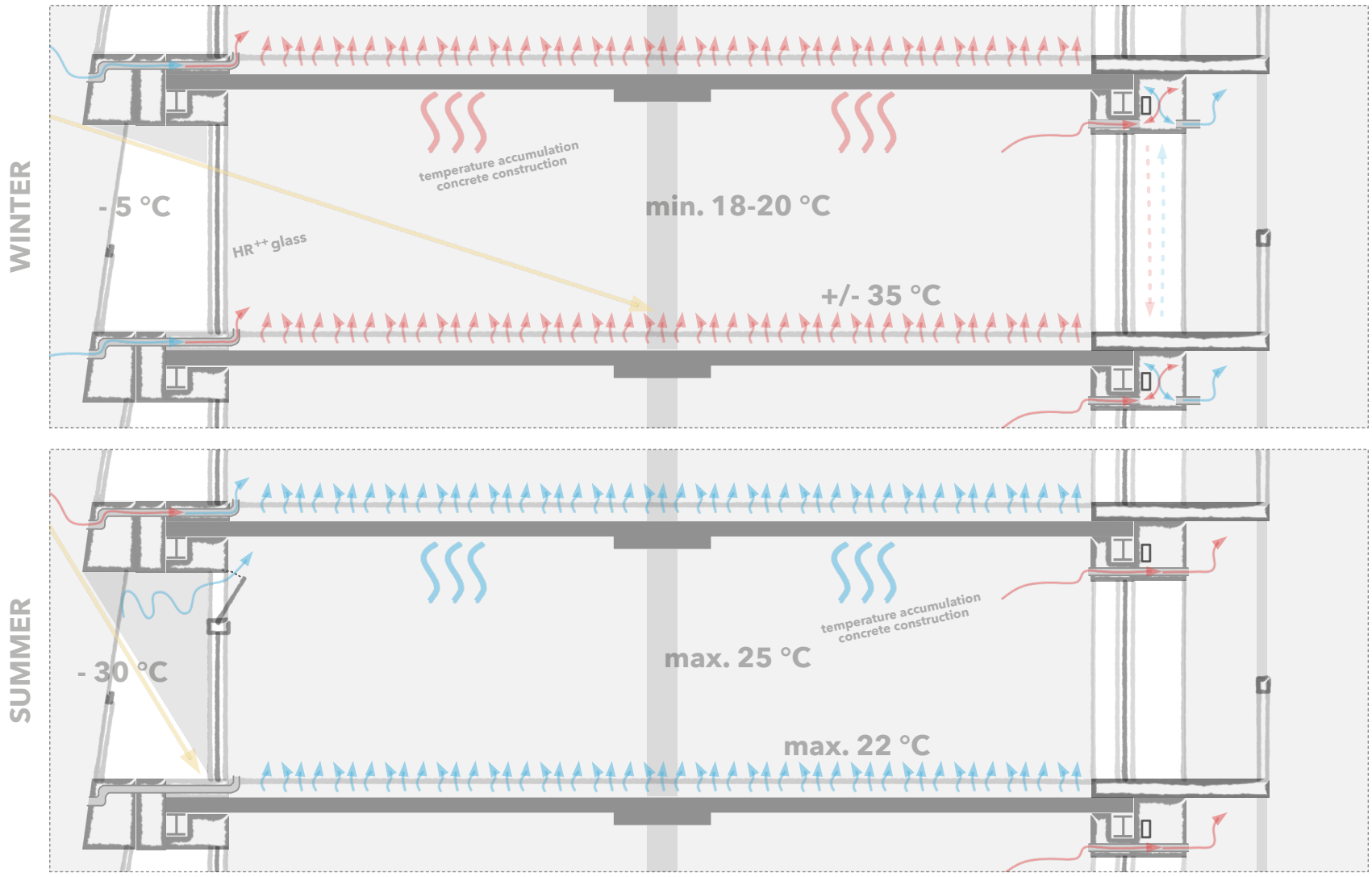
Steel production in itself is not sustainable. But the possibilities that steel offers us can make the overall design sustainable if we use steel intelligently.

- standard dimensions
- easily reusable
- very strong

climate

The boxes have relatively large dimensions and result in excess space in the facade. This makes it possible to use this space to passively preheat the cold air in winter (according to the second skin facade principle). The used air is discharged via an air fan with heat recovery at the rear facade. In the summer, the air will enter through an overhead window that directs the cool air from the shade in.

The temperature control is done via low temperature underfloor heating and cooling. The temperature-accumulating capacity of the existing concrete construction is also utilized by opening the ceiling. The shape of the facade acts like an overhang that prevents too much sunlight from entering in the summer. And finally, to make the inside more light, the transition zones will be of white painted wood that will reflect more light into the building.



UNIT SCALE

passive preheating air in front facade (second skin facade)

air ventilator & heat recovery in back facade (heat exchanger)

low temperature floor heating (connected to a heat-pump per shaft)

using **temperature accumulation** of existing concrete structure (ceiling exposure)

white painted intermediate zone to get more light inside

BUILDING SCALE

shared **thermal energy storage** (TES)

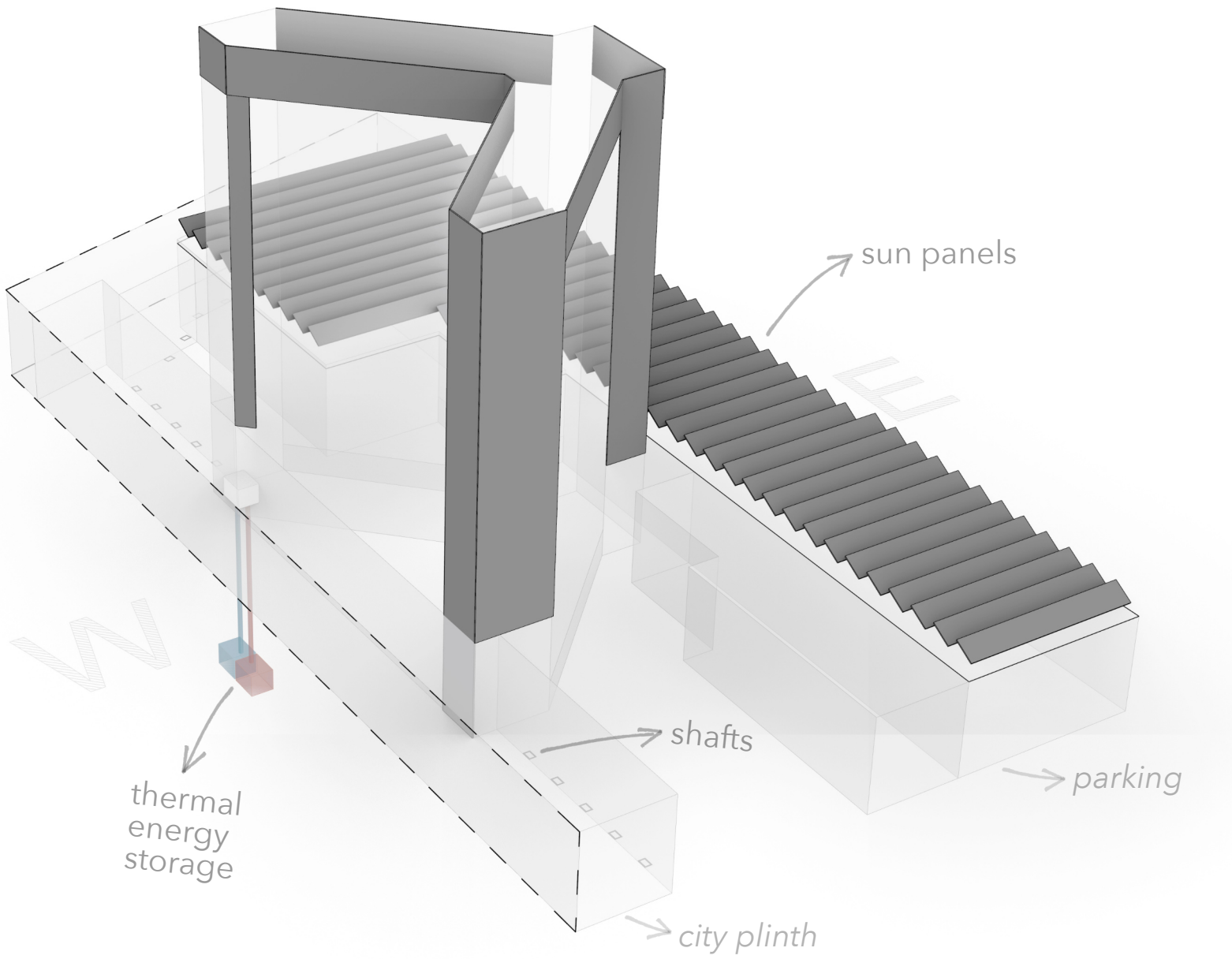
shafts every 7.2 meters (one unit x 4 floors)

sun panels on parking (as a sun-shading roof)

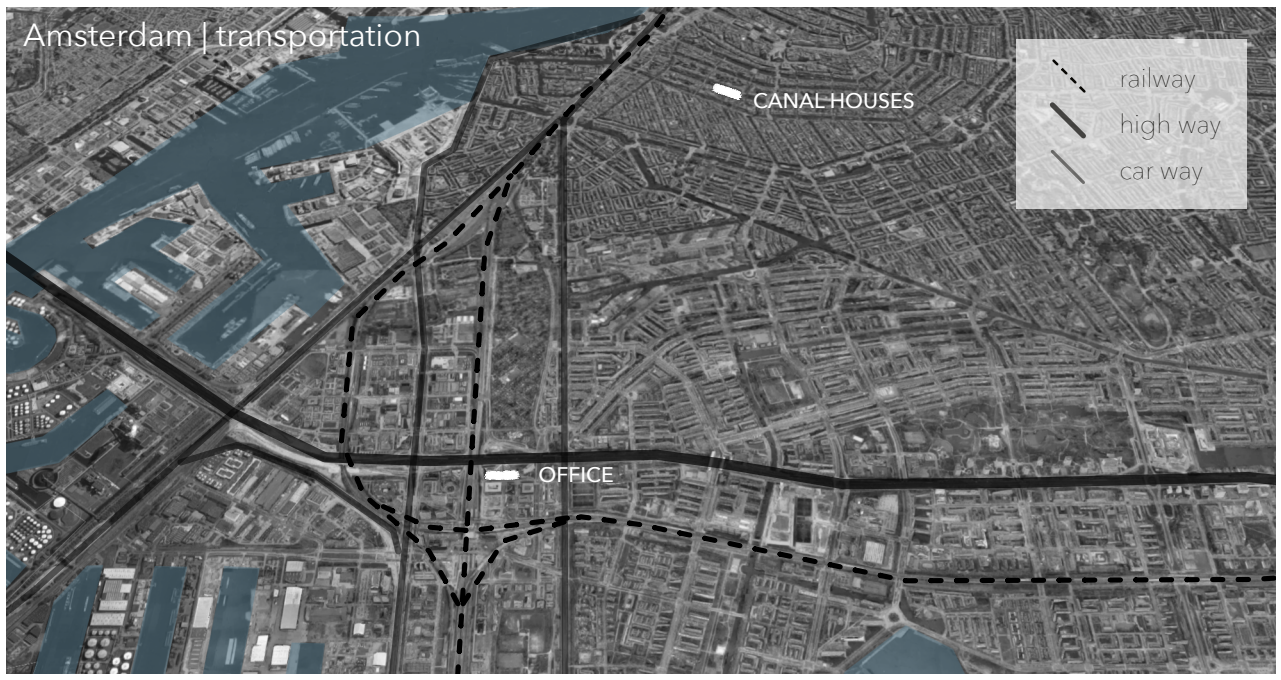
sun panels on tower (concrete back wall with no windows)

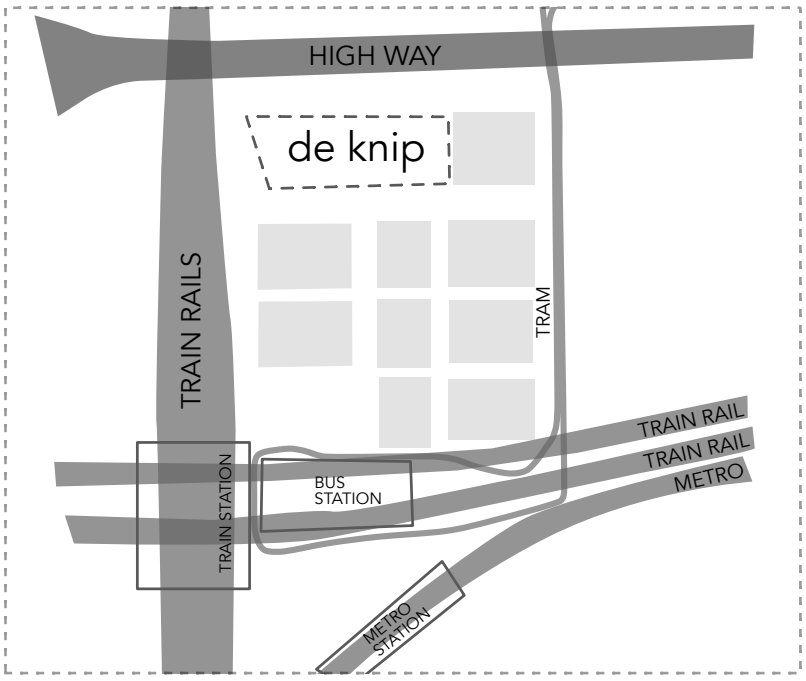
On the scale of the building, there will be thermal energy storage that stores the heat and cold from the units via the shafts.

Solar panels will be installed on the tower without windows and on the roof of parking spaces. This way we don't have to use these elements in the plinth.



urban context

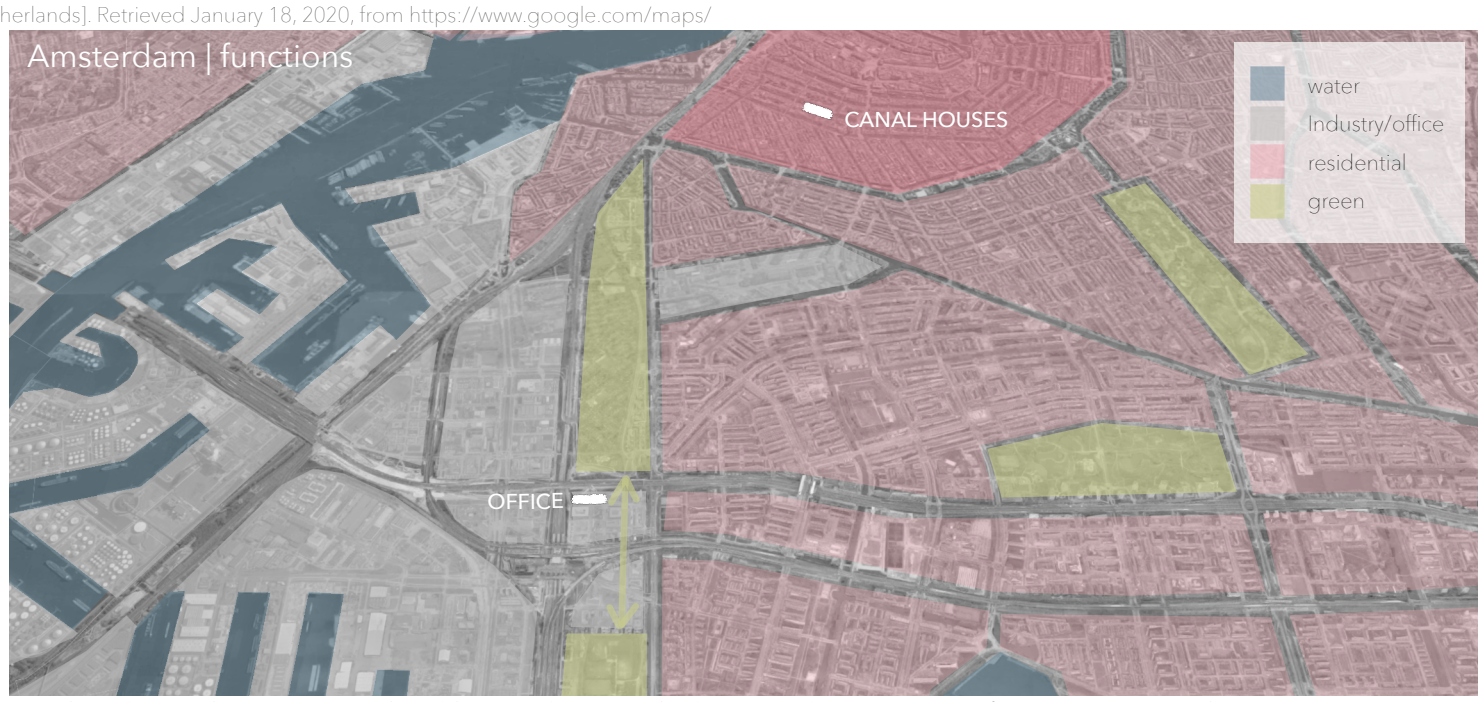




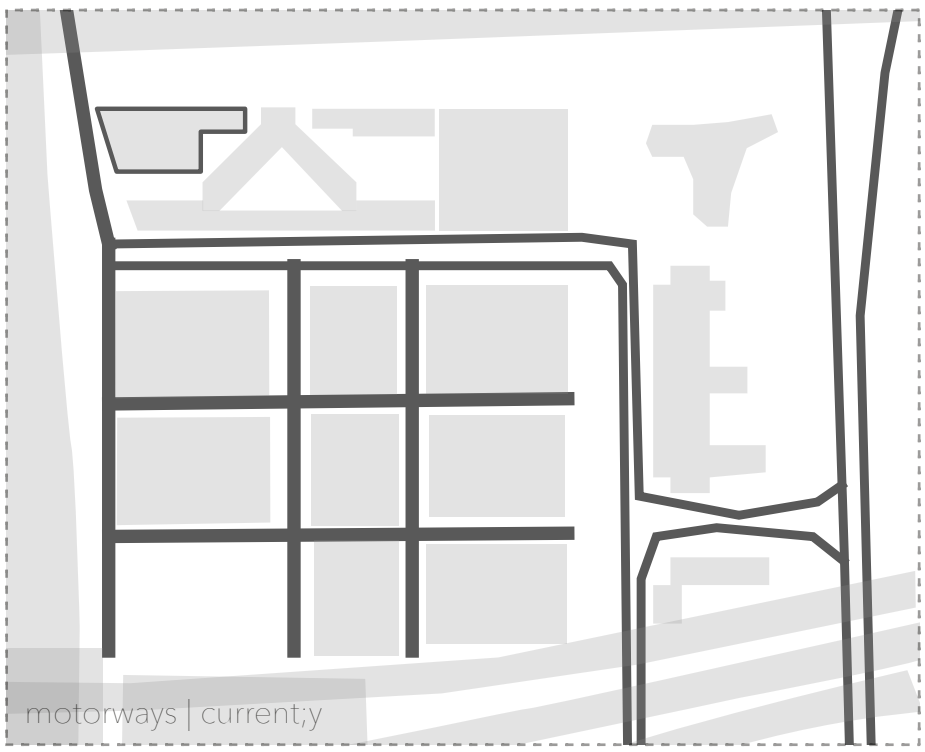
Google. (n.d.) [Google maps 3D view: Sloterdijk, Amsterdam, Netherlands]. Retrieved January 18, 2020, from https://www.google.com/maps/

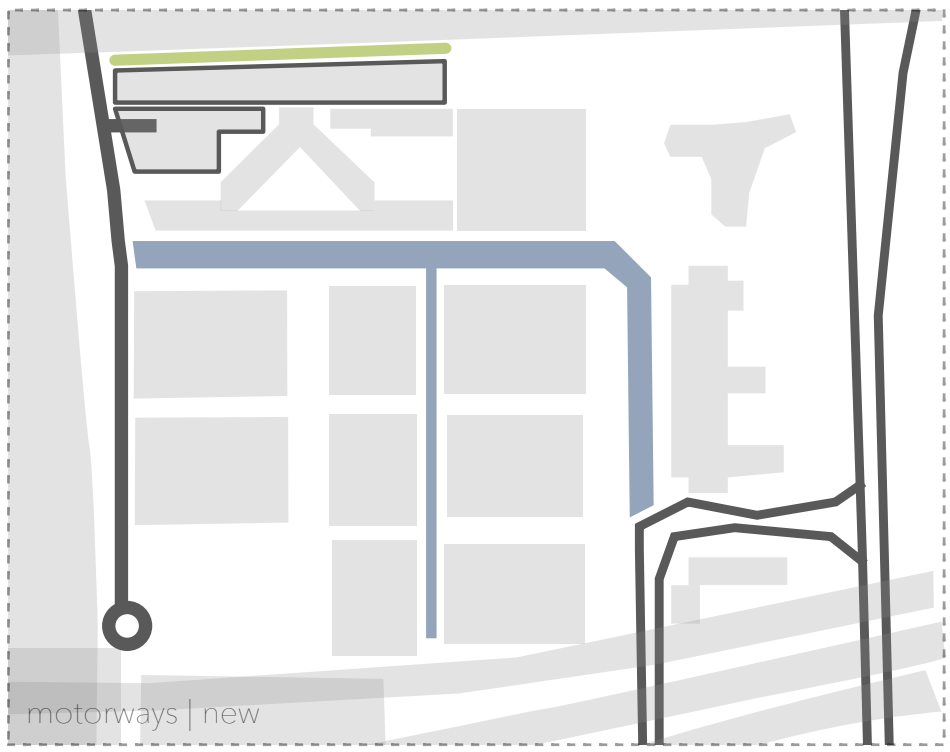
The area is easily accessible by train and car for out-of-town visitors. At the same time the area is also well connected to the inner city of Amsterdam through tram, bus, train and metro.

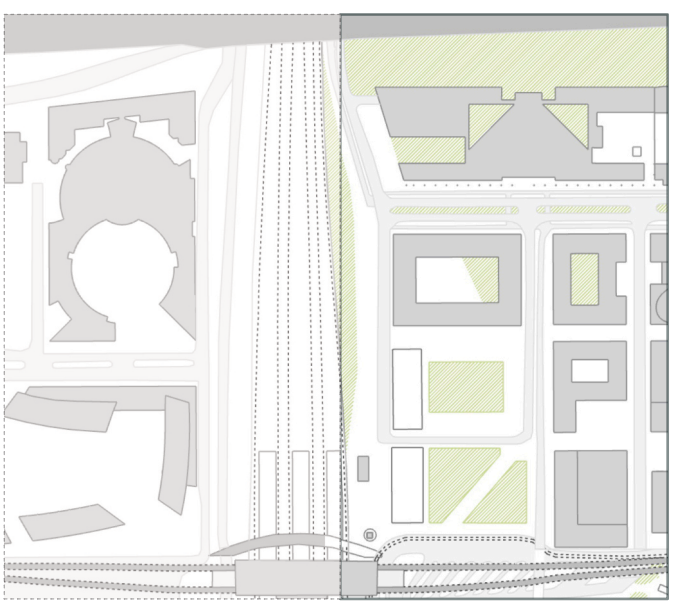
The office is located at the border of the urban area of Amsterdam West and the industrial port. In the other direction, the building rests on a green strip, which was originally part of the Haarlemmertrekvaart. This green strip starts on the edge of the west side of the Westerpark and turns into a garden house park up to the highway (A10). The district is called Sloterdijk which used to be a village, but gradually was encapsulated by the big city. In 1921 it officially became a district of Amsterdam. Especially with the opening of the Sloterdijk train and metro station in 1983, the area became an important and functional part of Amsterdam.



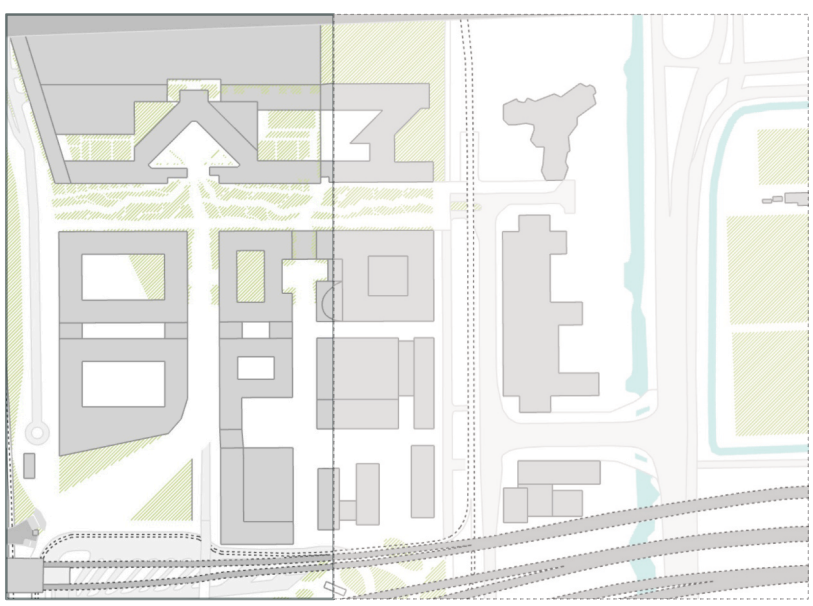
Google. (n.d.) [Google maps 3D view: Sloterdijk, Amsterdam, Netherlands]. Retrieved January 18, 2020, from https://www.google.com/maps/







urban plan 1:5000 old



new

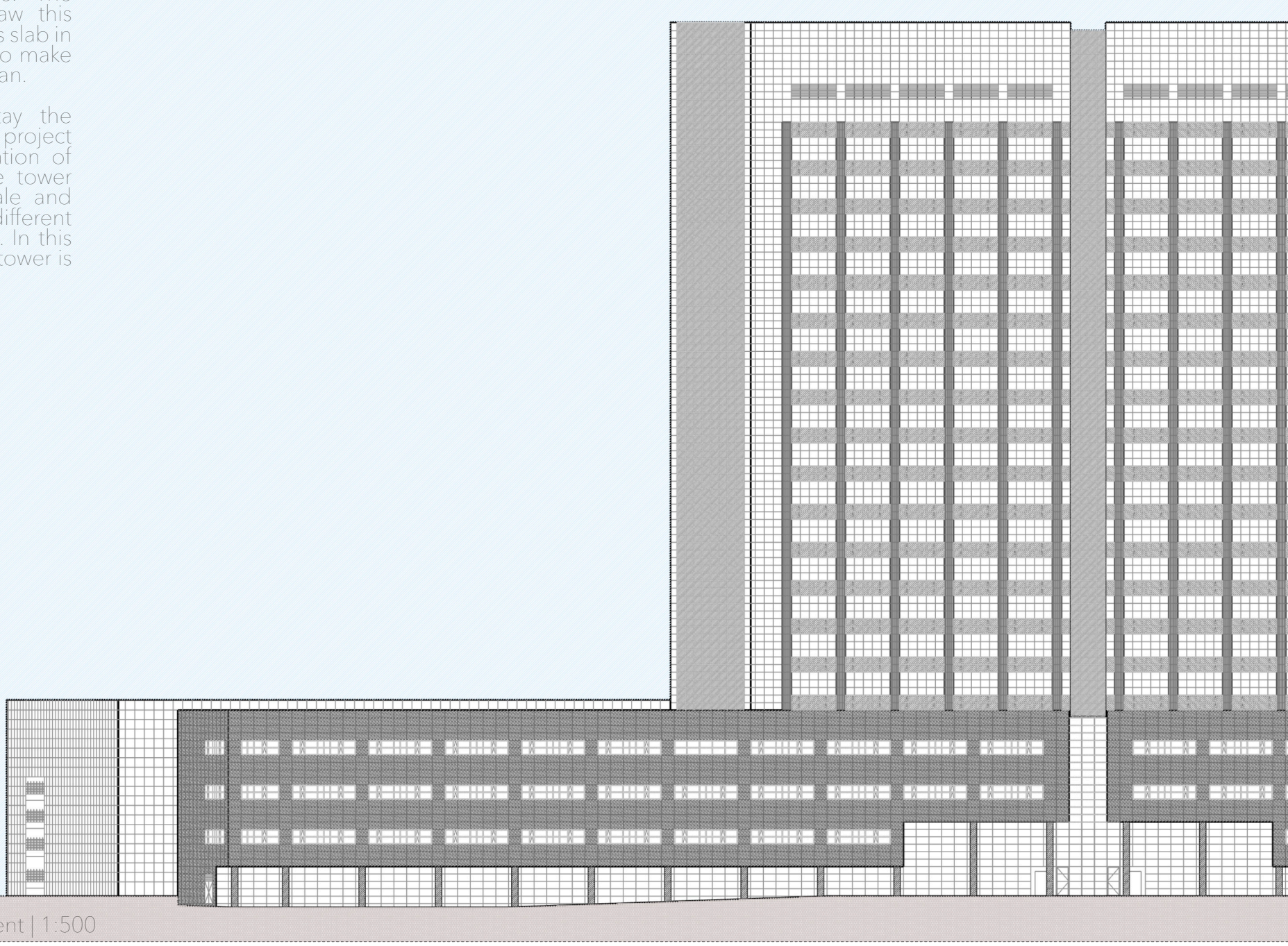
The area is easily accessible by car. We see that the car is very dominant, even though it is not relevant to drive through this area.

The area will be pedestrianized to add urban quality and make it more of a place to stay. The car route is turned into a shared space where the car is a guest. A motorway that leads to Sloterdijk station remains active to support the disabled.

Activating this area will make the route to the station safer and local residents will also benefit from this intervention.

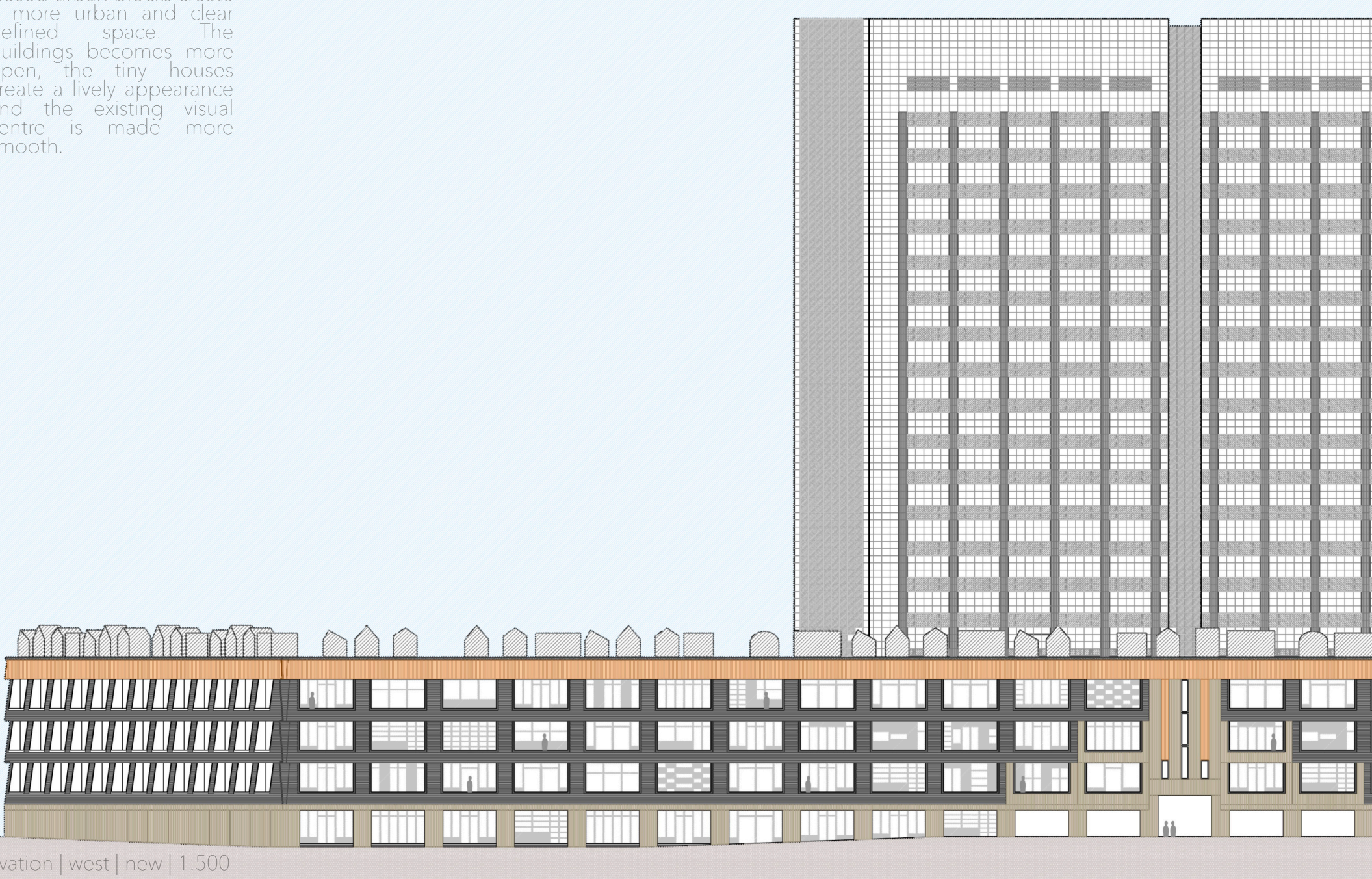
The plinth already has a good urban scale. The architect, clearly saw this necessity to add this slab in front of the tower, to make the street more urban.

The tower will stay the same, because my project is about the activation of the urban life. The tower has a different scale and functions on a different level within the city. In this regards, I think the tower is functioning fine.

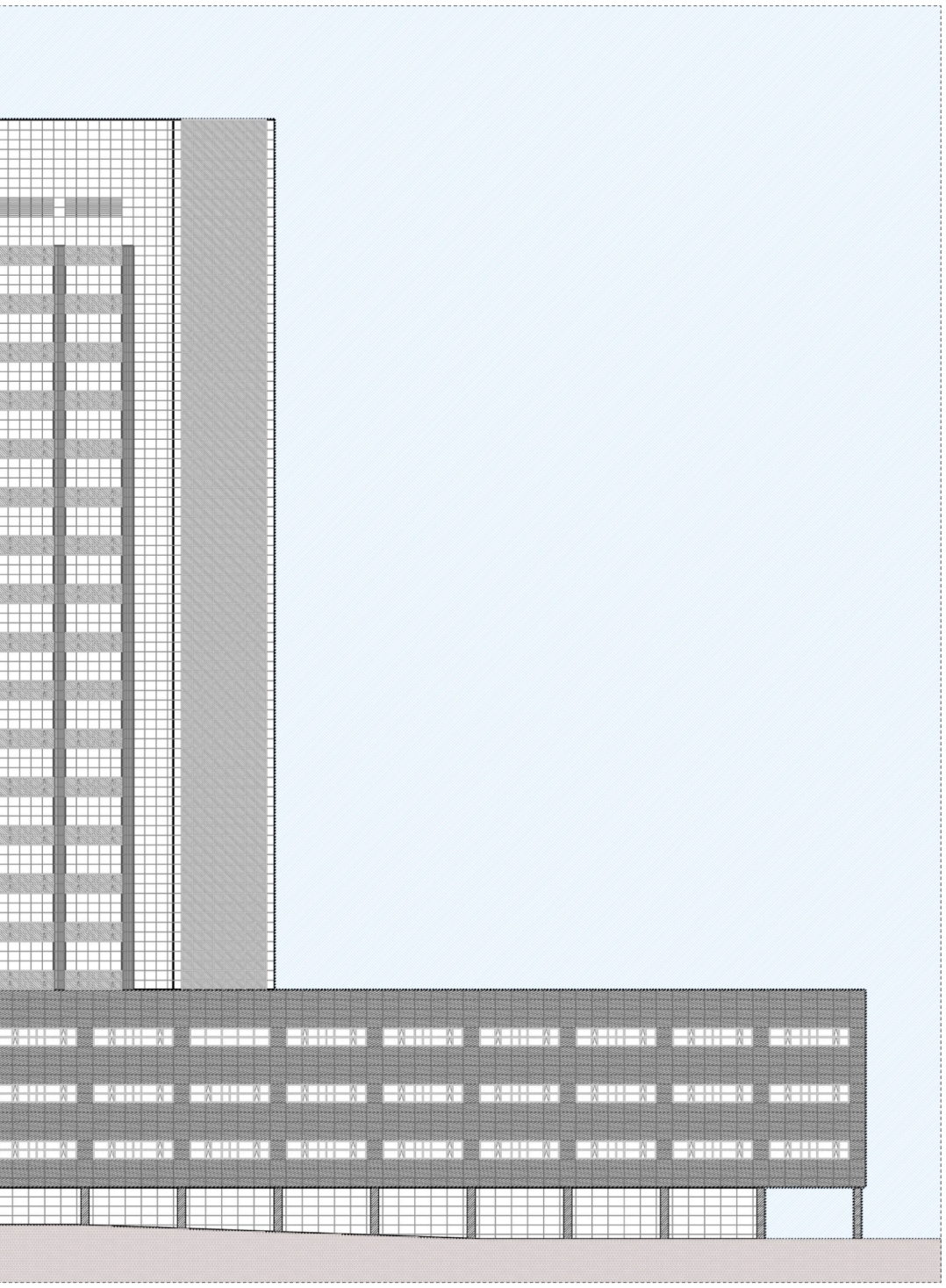


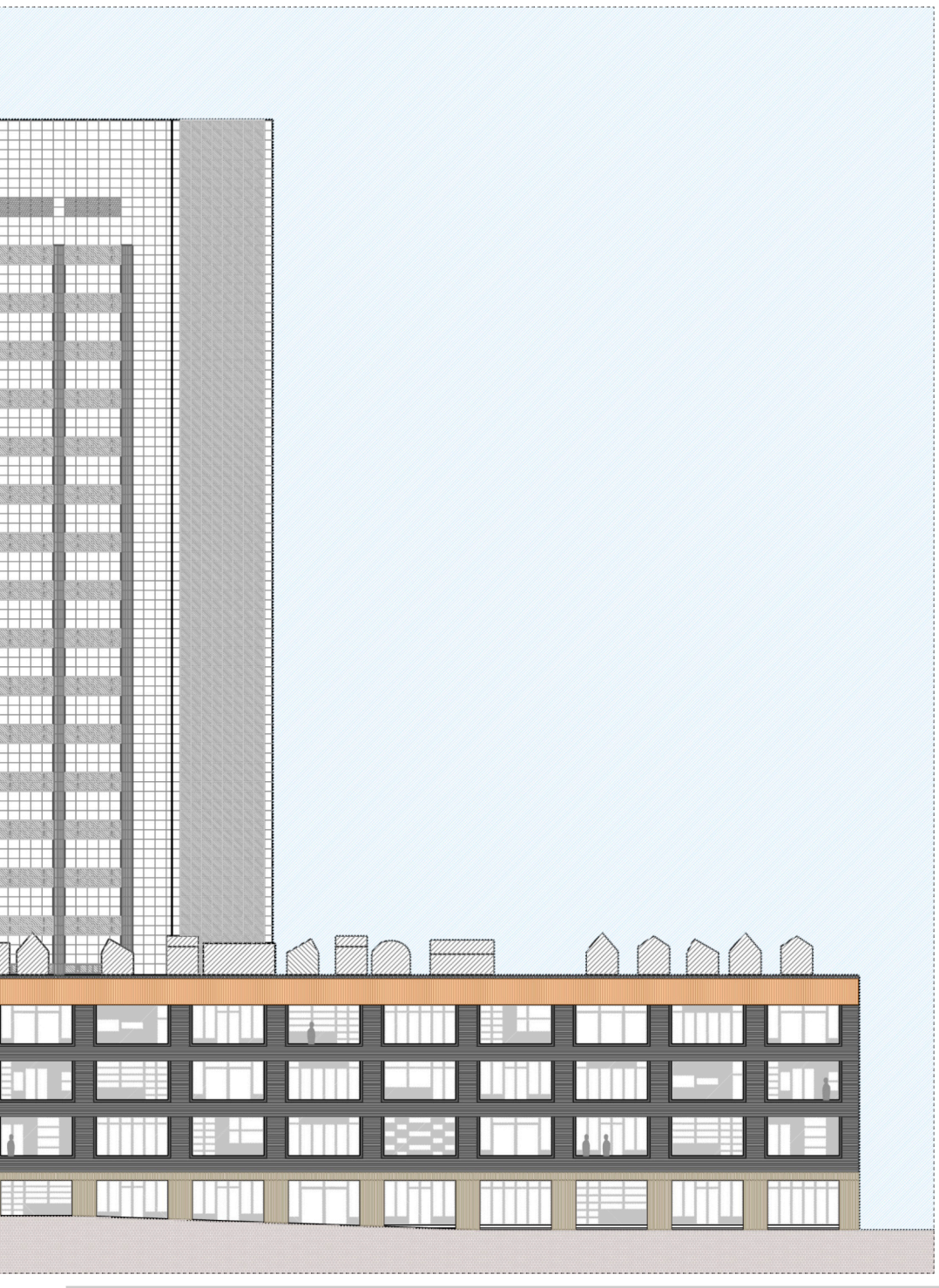
elevation | west | current | 1:500

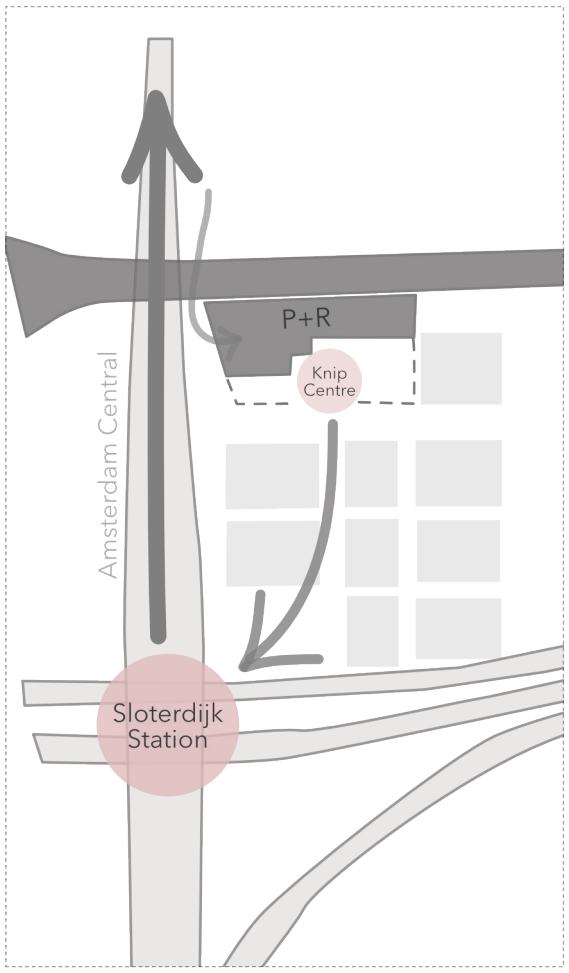
We see how the new closed urban blocks create a more urban and clear defined space. The buildings becomes more open, the tiny houses create a lively appearance and the existing visual centre is made more smooth.

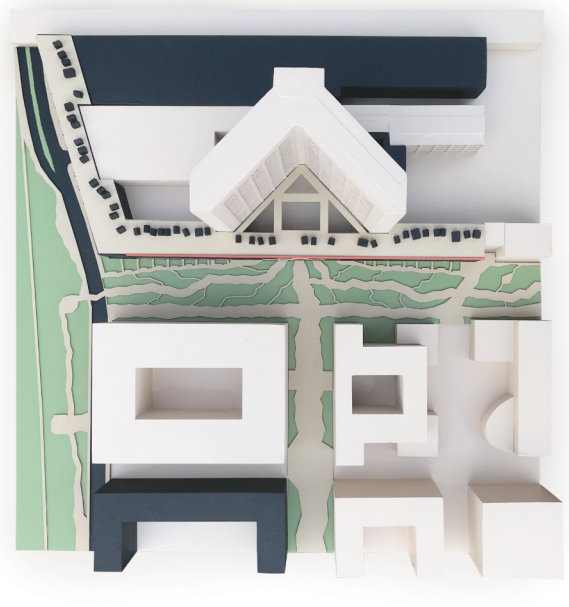


elevation | west | new | 1:500

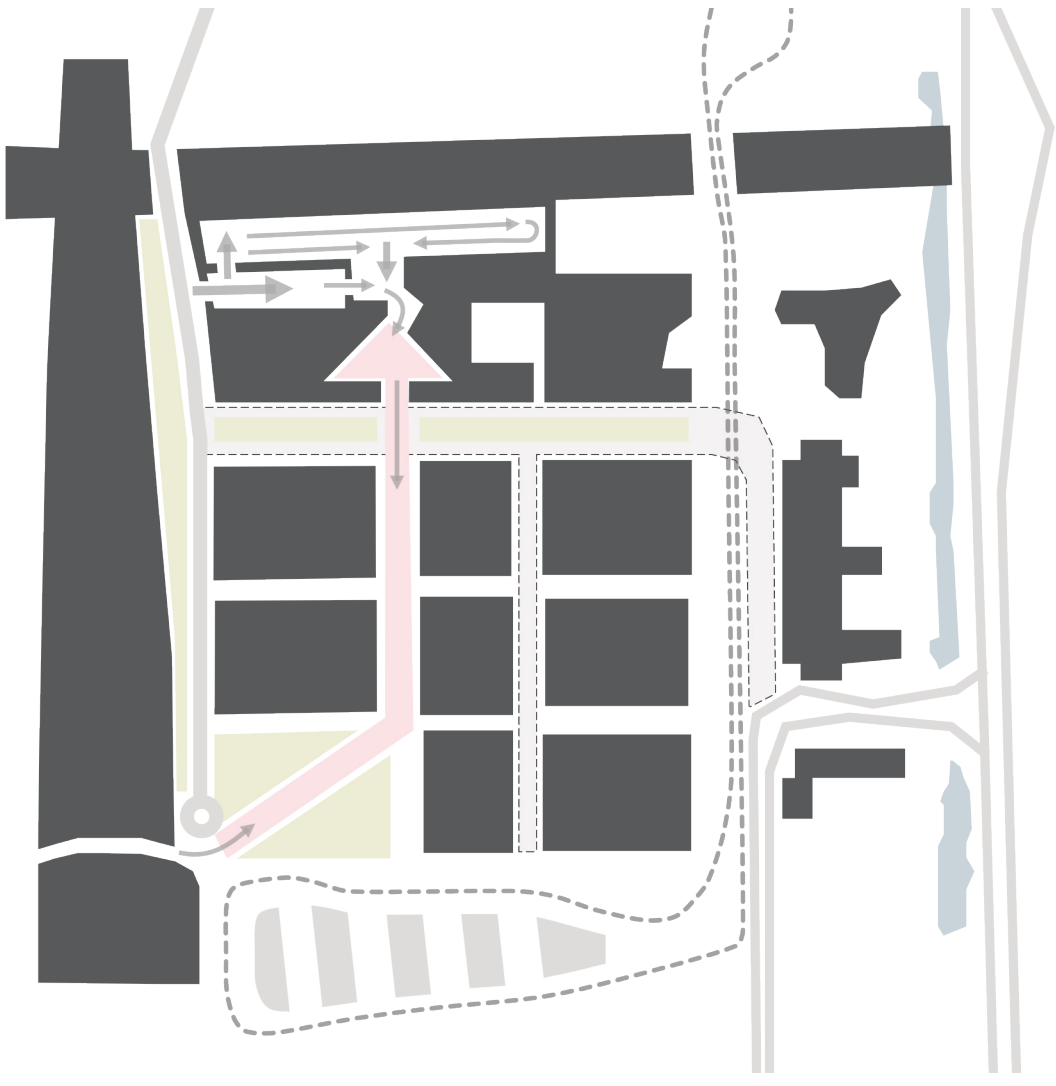












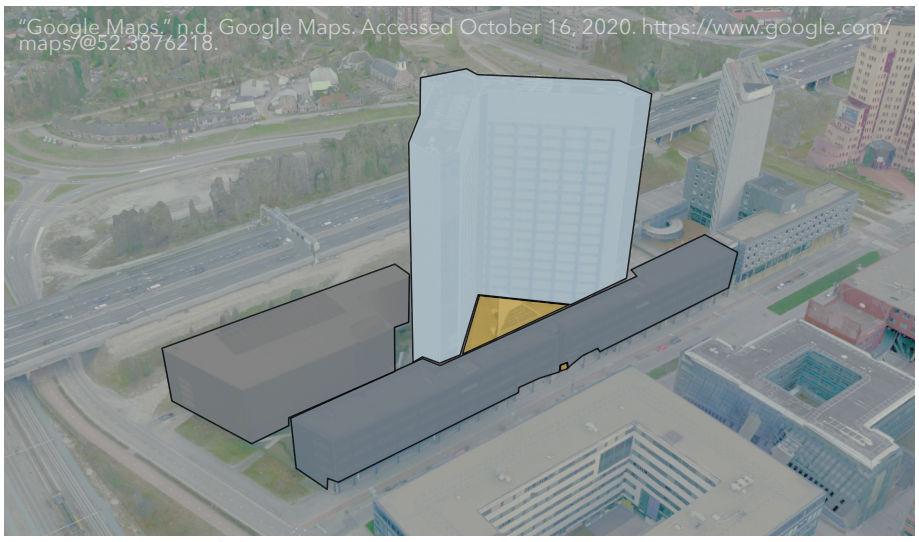
The municipality's ambition is to make Amsterdam car-free. It has become increasingly difficult to enter the city by car. Therefore, there is a greater need for P+Rs near train stations on the outskirts of the city.
P+R means 'Parkeren en Reizen' [Park and Travel]. When you park there and travel by public transport, the parking costs are only 1 euro. This motivates people to use public transport.

Currently there is little parking space and the building's parking lot is not for public use.

I want to make the car park public and add another large car park at the back of the building between the current car park and the highway. The new car park will have a green wall on the highway side and will also serve as protection against noise and air pollution.

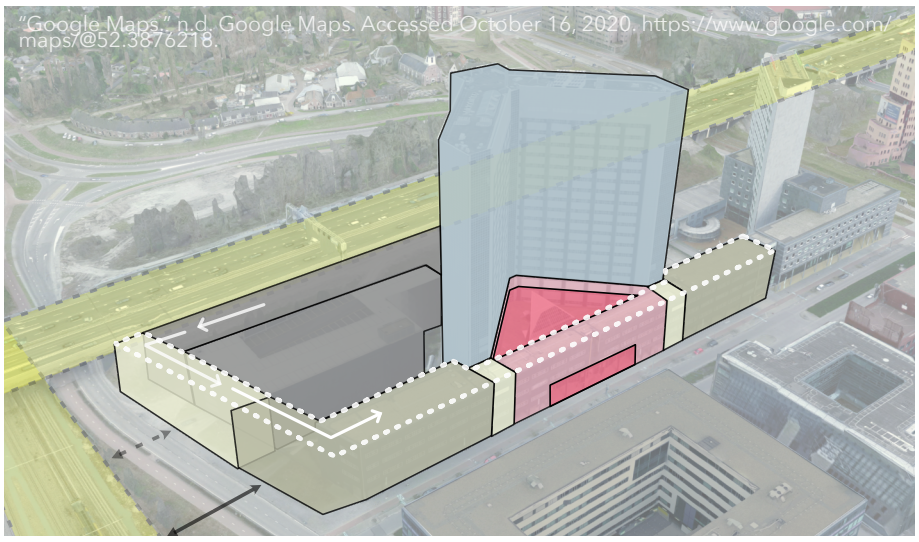
Creating this P+R shows the potential for the building to function as a public space. By connecting to the larger center of Sloterdijk station, which in turn is connected to the larger center of Amsterdam Central station, we can create a lively sub-center.

NOLLI MAP
In this Nolli Map we see how the inside of the building becomes part of the public domain. I saw the opportunity to exploit the flow of pedestrians from the parking lot by connecting the entrance and exit of the parking lot with the building lobby and turning the lobby into a public courtyard.



programme | old

- tax offices
- customs office
- lobby
- private parking
- traffic pollution
- tiny house park
- public space
- extravert functions
- workshops/ small office
- residential & calm functions
- public parking
- tax office



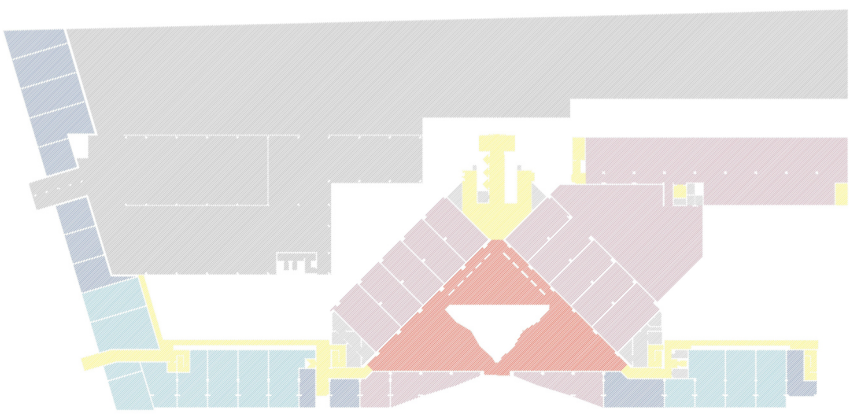
programme | new

The functions around the public courtyard will focus on extroverted and social functions such as restaurants, cafes, libraries, gyms and shops. This means that the first four floors of the tower will be divided into smaller lots. The top part of the tower remains part of the Dutch Tax Authorities.

The remaining plinth is also divided into smaller lots and aimed at more quiet and residential functions. The last part of the plinth, as we see on the left, is for workshop or small offices as it is too close to the motorway and train tracks.

Customs, which is now housed in the plinth, will be moved to another location, because there is no strong relevance for Customs and Tax Authorities to be close to each other.

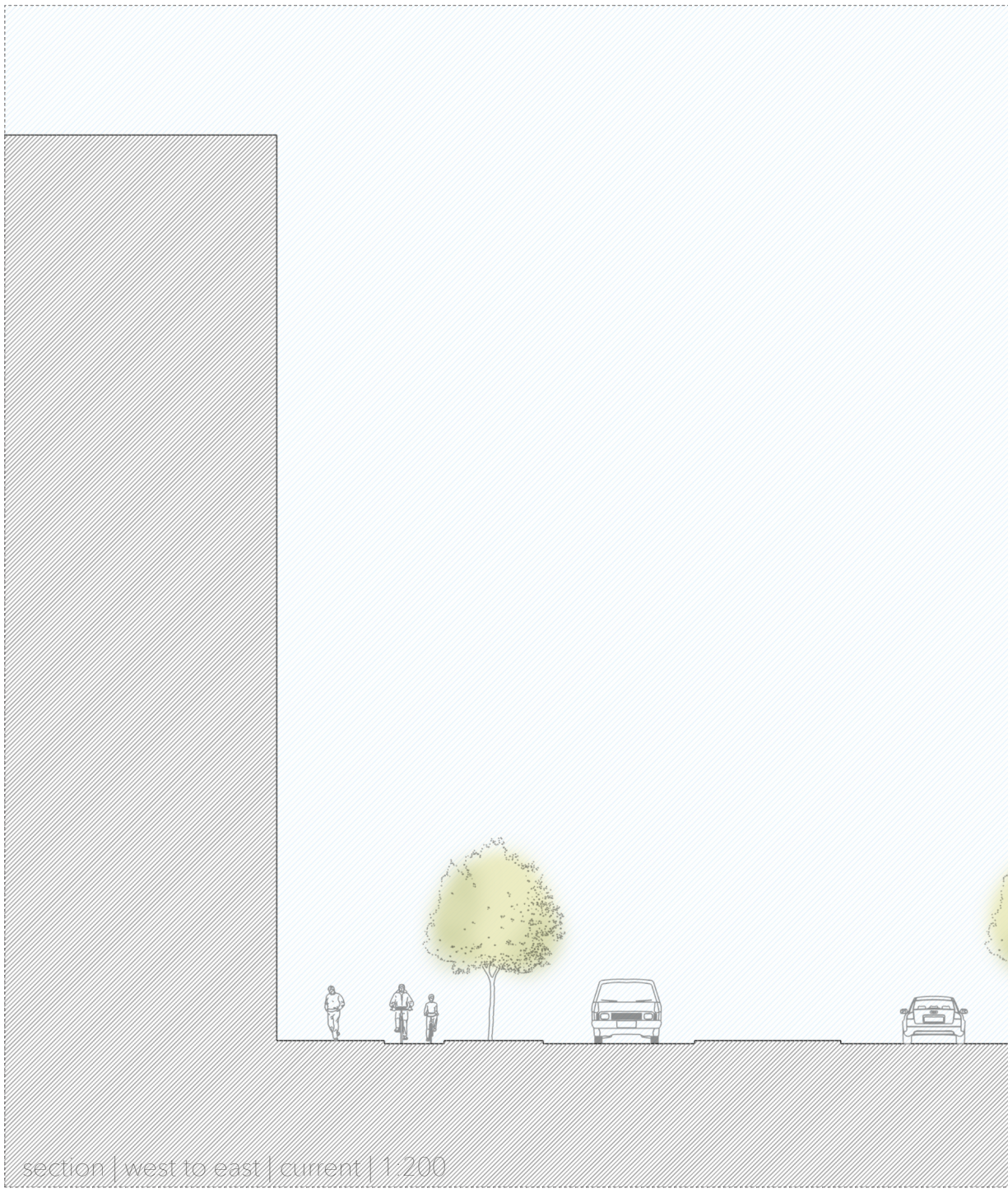
The roof of the plinth is accessible by car because of the adjacent garage and offers the unique opportunity to create a tiny house park. This increases the liveliness due to the diversity of income and lifestyle.



- public square
- extravert functions
- workshops/calm
- residential & very calm functions
- parking
- circulation
- technical

In the map we see how these different functions are distributed over different plots, and how circulation connects the different plots.

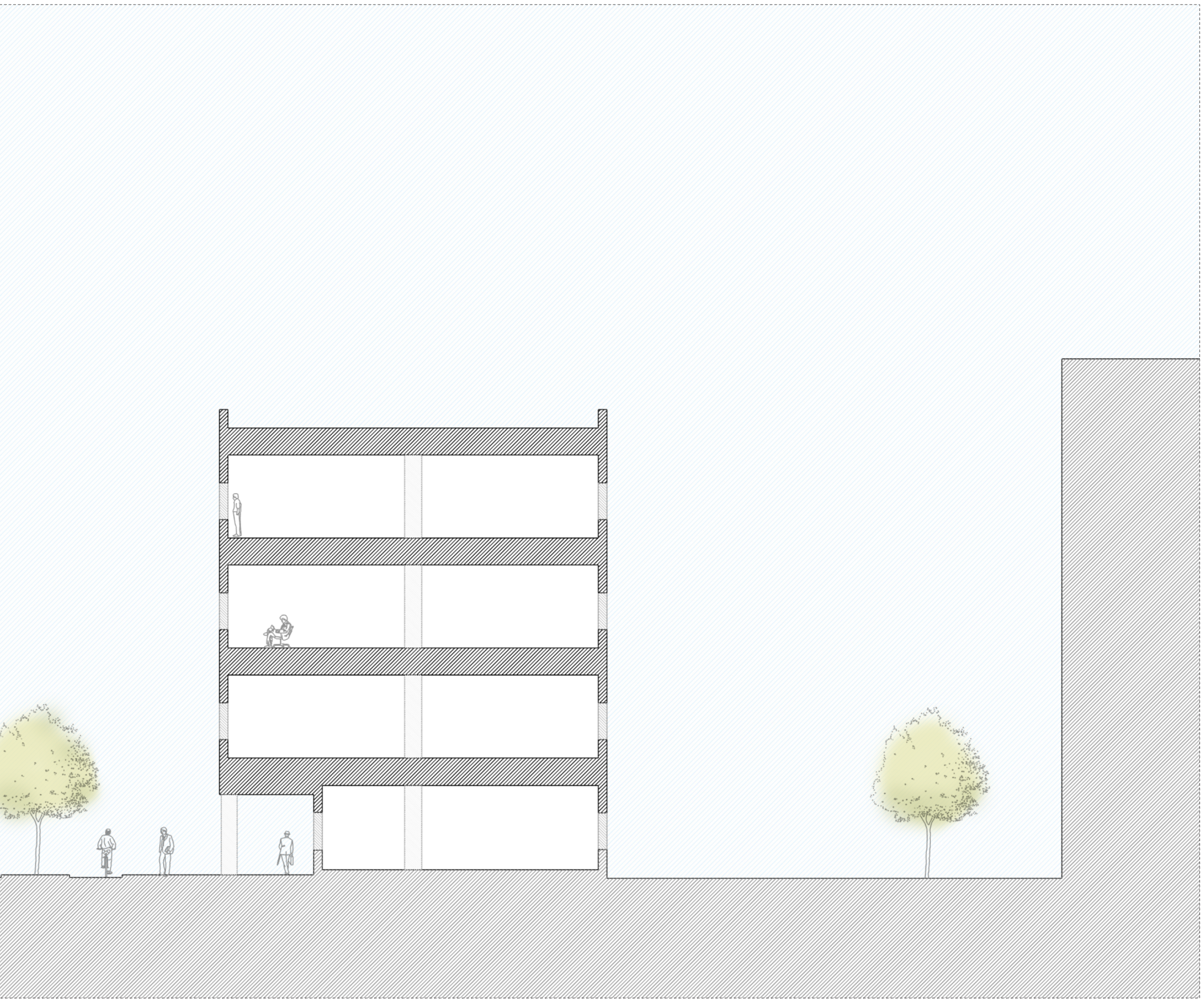
None of the functions are fixed, but through design I want to stimulate certain functions in certain areas.



section | west to east | current | 1:200



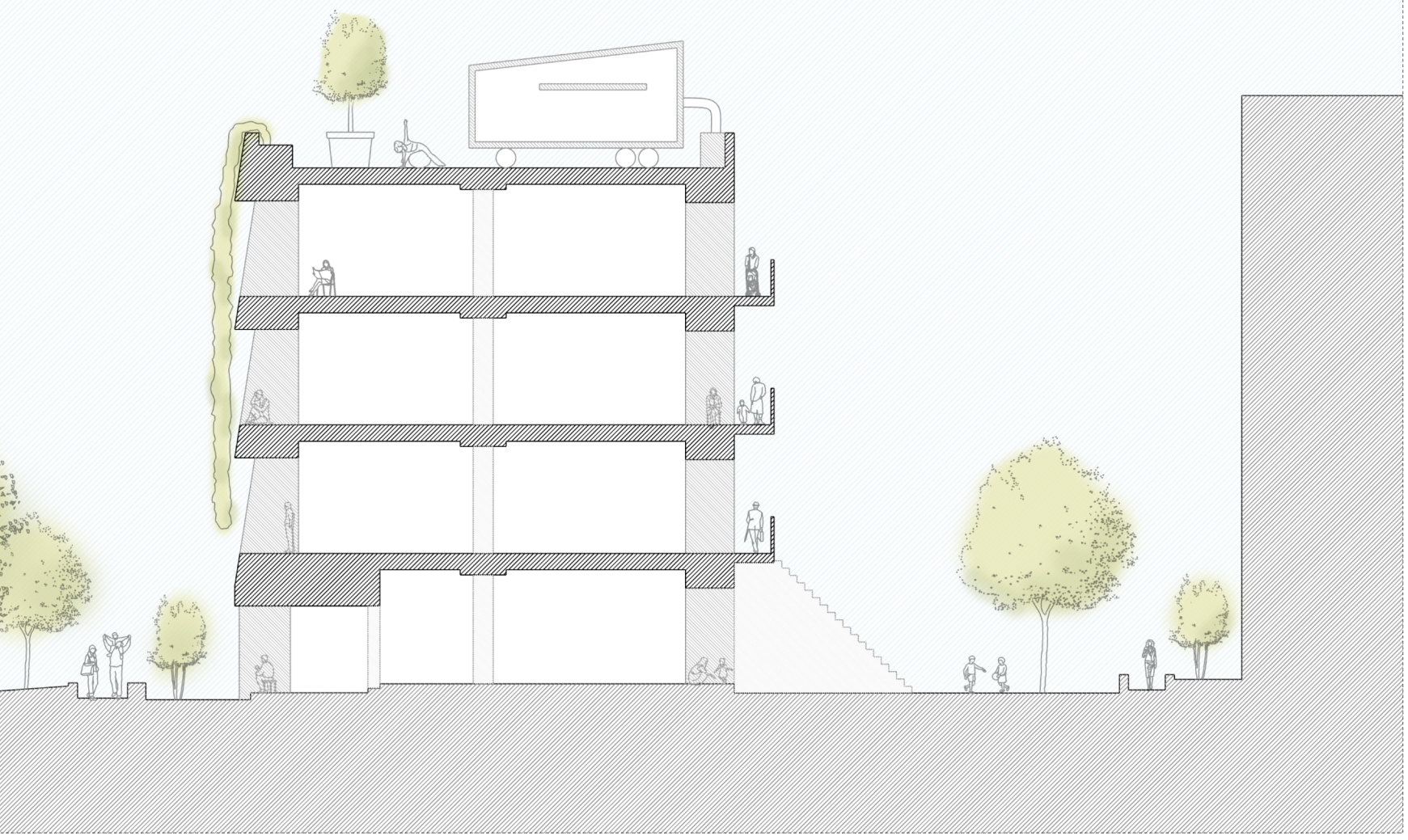
section | west to east | new | 1:200



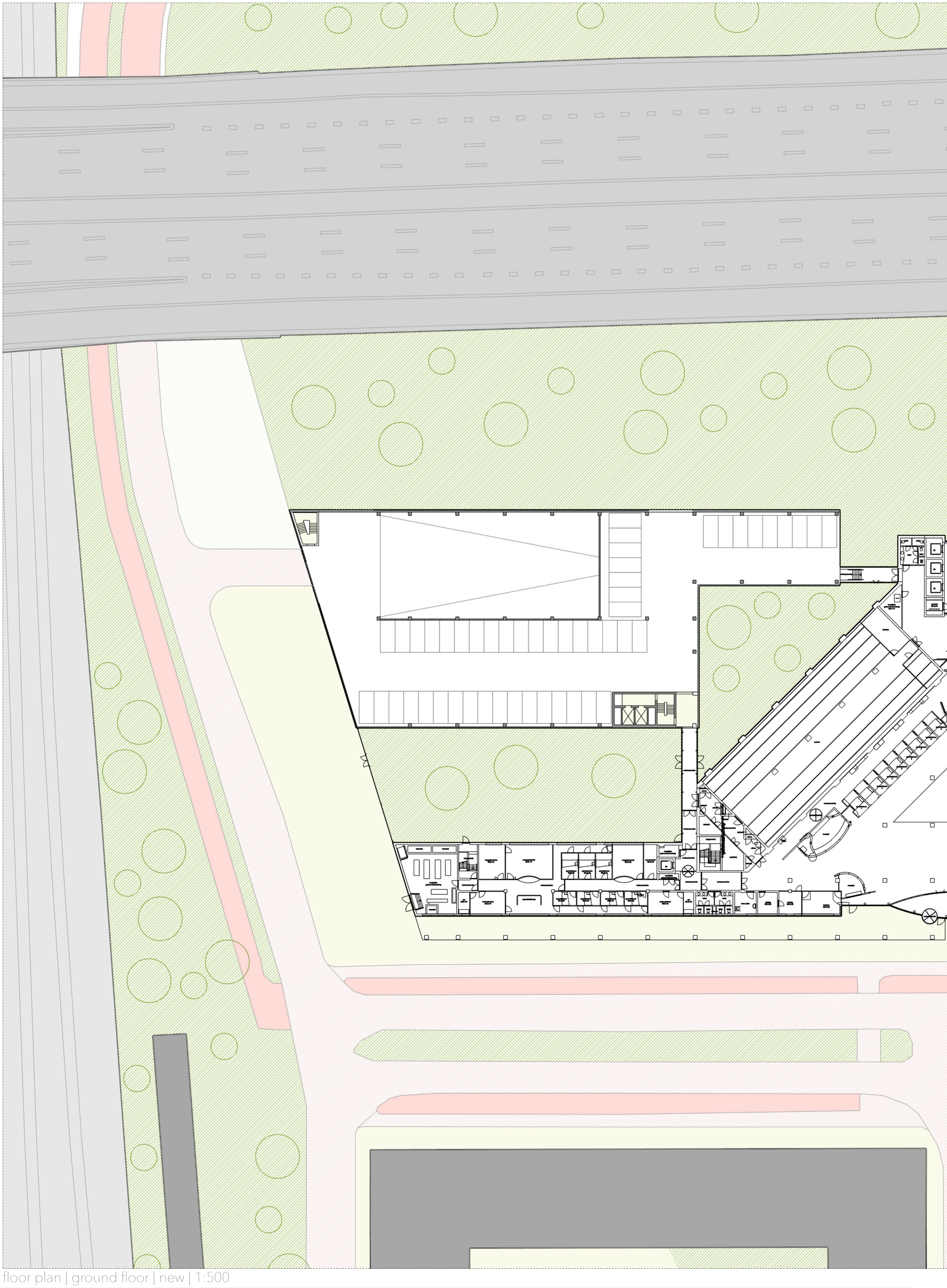
In the urban cross-section we see how the one-dimensional geometric shapes give way to an inviting facade with more openness, depth and transition zones. The roof will be an elevated street with greenery and tiny houses. In the back are gardens and galleries.

The pedestrian becomes more important. The profile and street articulation make the human dimension more present. Due to the layering and scale, the street gradually connects to the building.

Traffic is moving further from the homes and greenery is becoming more qualitative and diverse.

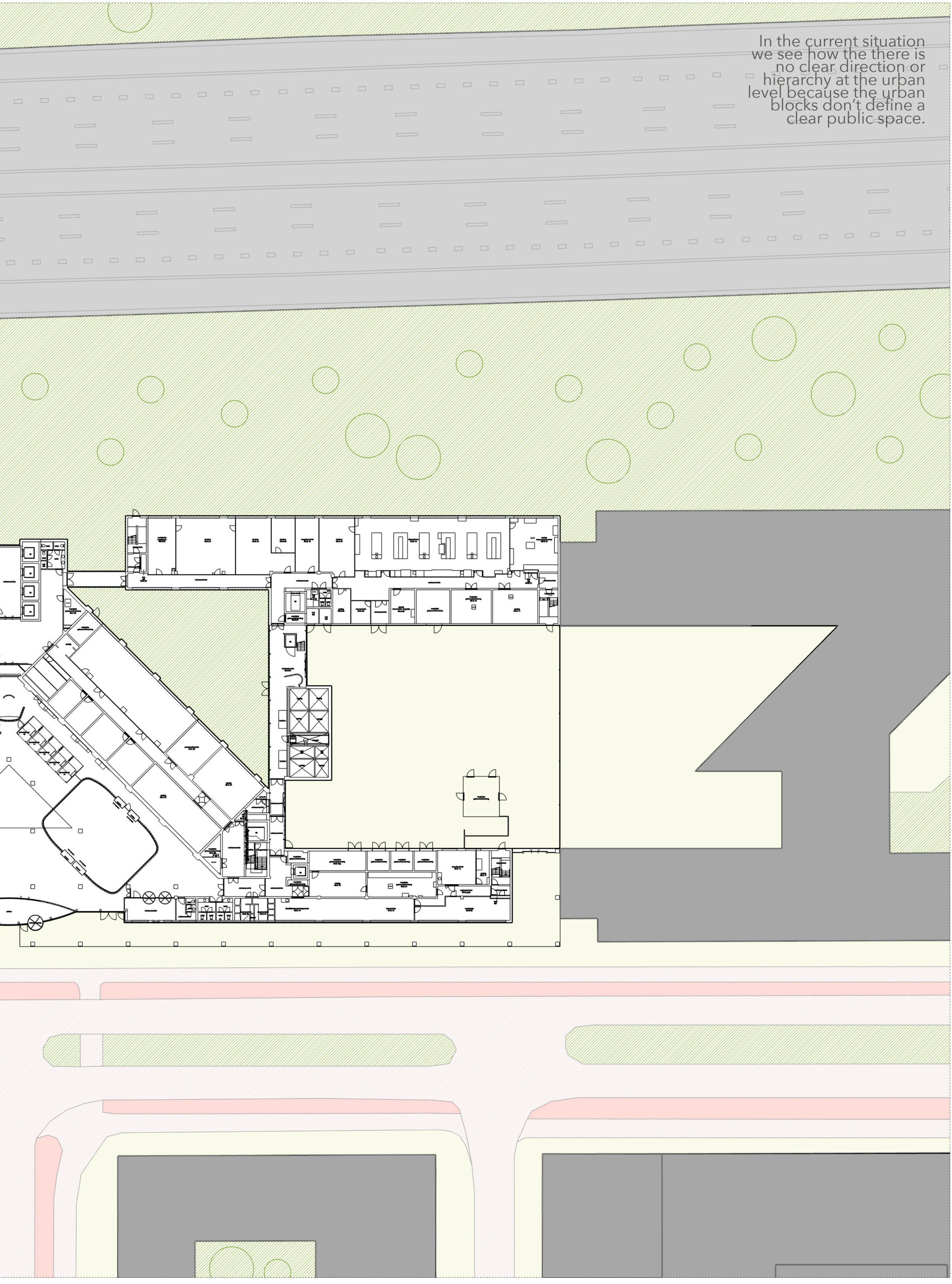






floor plan | ground floor | new | 1:500

In the current situation we see how the there is no clear direction or hierarchy at the urban level because the urban blocks don't define a clear public space.



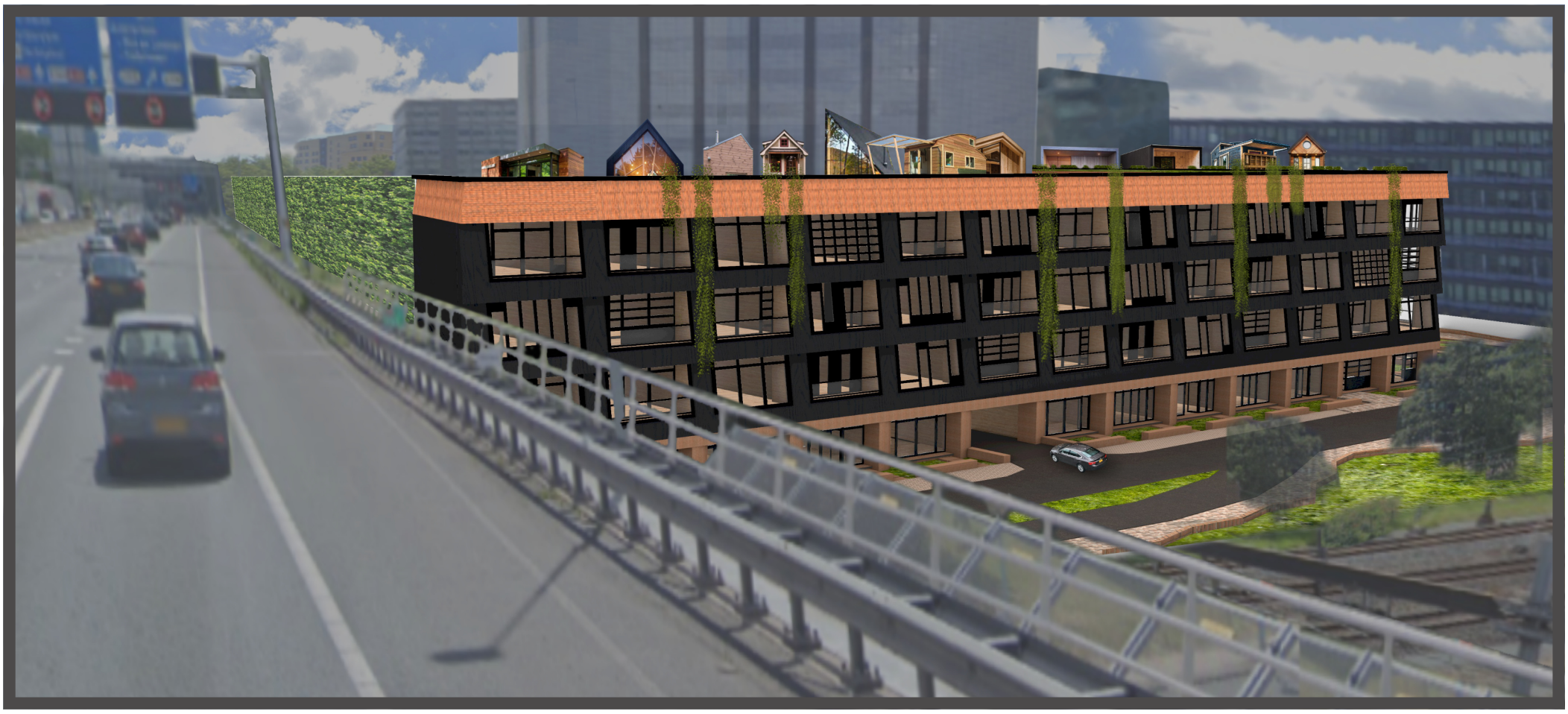




floor plan | ground floor | currently | 1:500



In the new floor situation we see how the closed urban blocks and the public park and paths create a clear sense of orientation and enhance the urban intimacy. There is a centre and the people are invited in.











It is time for *new vernacular* buildings

November 2020

Project: Master Graduation
Studio: Second Life
Specialization: Architectural Engineering
Master: Architecture, Urbanism and Building Sciences
University: Delft University of Technology

Thanks to..

Final DesignTutor | **Martijn Stellingwerff**
Initial DesignTutor | **Anne Snijders**
Building Technology Tutor | **Paddy Tomesen**
Research Tutor | **Martijn Stellingwerff**

External Examinator | **Alper Alkan**
aE Coordinator | **Mo Smit**
Head of aE chair | **Thijs Asselbergs**

Mimi Merel Oldenhave

21-01-1995, Amsterdam

GRADUATION PROJECT

repository.tudelft.nl/islandora/search
Search: Mimi Oldenhave

PORTFOLIO

www.studio-have.com/portfolio

MEDIA

instagram: studio.have
youtube: studio have
www.studio-have.com

CONTACT

info@studio-have.com
LinkedIn: Mimi Oldenhave

SKILLS

Adobe/Affinity
Illustrator/Design
Photoshop/Photo
Indesign/Publisher

AutoCAD in 2D
Rhinoceros
Grasshopper
Revit
SketchUp

SU-podium
Autodesk rendering
Adobe Premiere
Pro Final Cut Pro

Dutch - Native
English - Advanced C1
German - Fluent B2
French - Fluent B1
Spanish - Intermediate B1

Driving license since 2014
Playing the piano since 2003

EXPERIENCE

2020 **M**aster Architecture TU Delft
2017 **E**rasmus Exchange at ENSA Paris Belleville
Bachelor Architecture TU Delft
2013 **S**econdary school Barlaeus Gymnasium

2020 **S**tudent assistant at the TU Delft for the international office for Architecture faculty *(currently)*
Student assistant at the TU Delft for the research project called PrettyFace *(currently)*

2019 **I**nternship at Maroeska Metz (furniture design)
Internship at Miralle Tagliabue, Barcelona

2018 **R**ECAM-Ingenieurs - 4 day commission for Revit
Kidsmobility - children workshop on child-safe cities

2017 **E**uropean Architecture Student Assembly - two week workshop making a concrete pavilion

2016 **P**ayed film commission - three-day seminar at the Anne Frank House

2015 **M**aster class from cultural Professor TU Delft
Organising members weekend at DSJV Groover
Graphic commission of DSJV Groover
Archival research project at Anne Frank House
Social project at Anne Frank House Museum Night

2013 **B**ecoming an Anne Frank Ambassador