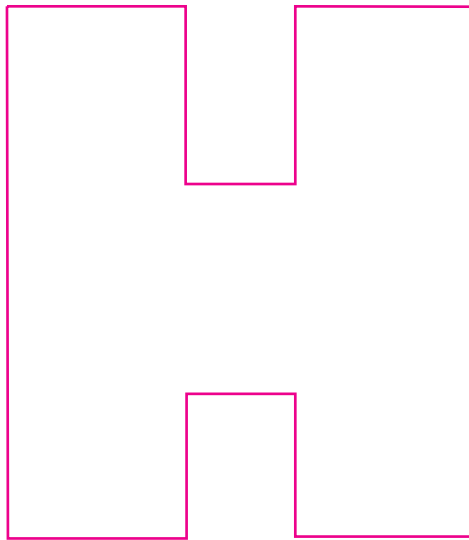


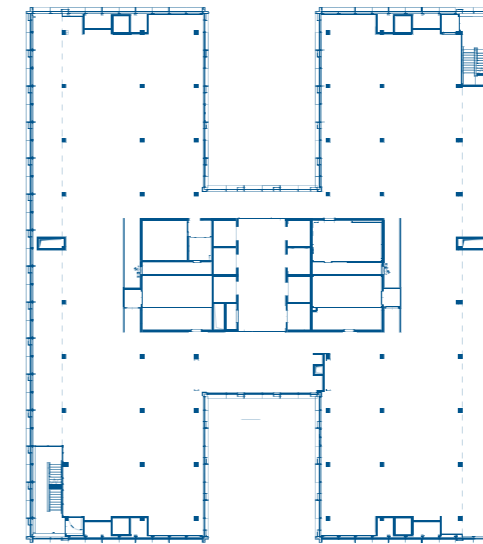
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MULTI

Open debate, public interior and circularity

. working with .



MULTI

Open debate, public interior and circularity



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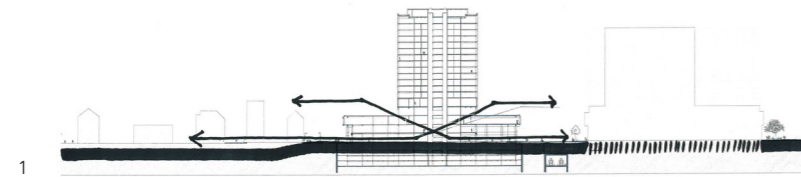
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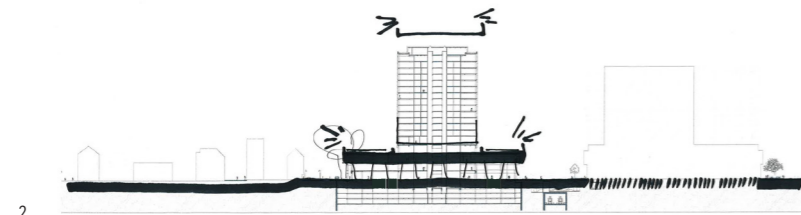
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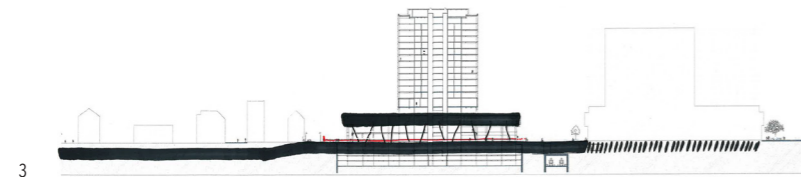
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Preface

In 2017, the reconversion project of the Philips tower into MULTI won the Be.Exemplary award. This prize, awarded by the Brussels Region, provides a subsidy to projects that contribute to more sustainable architecture and urban projects in the Brussels region. Both the client and the designer receive a grant to boost further research and develop and eventually achieve the high exemplary goals set at the onset of the project. The jury report formulated it as follows:

"The project is distinguished by a precise and ambitious objective: maximum reuse on site of as many components as possible. This ambition is to innovative and should inspire similar projects. A key to its success is the commitment of the partners to the circular economy, right from the preliminary design stage."

This book has been composed, collated and designed from this perspective. It is a form of reporting and reflecting on the making of MULTI.

It brings together design drawings, excerpts from the BIM model, sketches, models, annotated production drawings, etc. on the one hand, and a photographic report of the construction on the other. As a form of documenting a long and complex process including many different people with very diverse expertise, it is by definition, incomplete.

These have been brought together and placed in relation to each other according to thematic lines of inquiry. The plan of the book that you find on the following pages can serve as a map to navigate this documentation. The order of the documents is not chronological but more relational. You can read and understand it as an ecology of documents where they relate to each other, influence the next and/or are followed and inspired by others, how they depend on each other and evolve together to shape the reconversion of the Philips tower into MULTI.

To provide more background to, and deepen, the main lines of inquiry: public debate, public interior, post-war recent heritage, private development with public ambitions, integrated practice and critical circularity, a series of articles are woven into the fabric of the book. These contributions are by Sven Sterken, Kristiaan Borret, Valérie Vermandel & Gwen Vreven, Lionel Billiet & Arne Vande Capelle, Frederik Jacobs & Tomas Ooms and Asli Çiçek respectively. The photographs are by Jasper Van der Linden.

When you set high ambitions, at some point, you must face the fact that they need to be materialised in some way. Words that describe a set of goals will need to be translated in writing and information represented in models. Things need to be made and produced, prepared and built.

By focusing on the details, the materialisation, the craftsmanship and making of, this image aims to give you an insight into the process of working with MULTI.

Medusa and the critical circularity conjecture: Everything is obvious once you know the answer (*)

Tomas Ooms

Prologue

In the shadow of the Hagia Sophia, under the former Hippodrome, you find the Basilica Cistern. This 6th century underground construction has a water storage capacity of 80,000 cubic metres. The ceiling is supported by 336 marble columns. Two of these have the head of Medusa as a base. Both heads come from a former Roman building. One of the heads is placed upside down. It is said that this is done to avert the petrifying gaze and power of Medusa ... However, the second head, placed sideways, is obviously placed this way to fit the height.

An unseen stream of 'value and equity'

There is a continuous, 'unseen' stream of reusable materials that are being removed from construction sites. That is to say, the stream is visible as dust and a line of trucks driving to and from the construction site, and audible as construction noise. But at the moment, the value of the material being removed is unseen. Part of this has to do with the externalities: the hidden (environmental) costs that are not being taken into account. Hence, it remains cheaper to resource and process new materials than to repurpose existing ones. Part of this is due to the fact that projects of a certain size are not considered as appropriate 'receivers' of these materials. Hence, these projects, both in the conceptual phase and during construction, are not organised as potential clients for these materials.

A transformative practice

Rethinking this linear model is what circularity should be about. In architecture, 'circular thinking' obviously starts with working with what is already there, prioritising adaptive reuse and the repurposing of existing spaces. This asks for a new kind of architectural practice—a transformative practice. A practice of the realisation of spaces as opposed to a production of spaces.

Four modes

Well, actually three modes and a conjecture ... When we approach this from a material point of view, circular construction exists in four modes. First, the existing building (reused) is considered as a source for harvesting materials for reuse in situ. The second mode is for the harvesting and mining of materials and making these available for reuse in other projects at other locations. The third mode sees the project as a receiver of materials that have been harvested and mined from other buildings.

In the circularity paradigm, there also exists a fourth mode that supports or enhances future reuse. It is a case of kicking the can. It is based on assumptions and good intentions, but without any guarantee of success. This part of the circularity paradigm is what I would call a conjecture: a prediction in which the future is presented as more or less similar to today. Circularity as a business of promises.

But in fact, circularity is about what we can realise today. And while we do this, we rediscover how evident it is to 'work with what we have'. At that moment, we get an interesting shift in the architectural practice. New competences are needed, and some competences that have faded need brushing up.

You could write a book that tells the history of the world from the viewpoint of 'storage'. It would describe how 'storage' is one of the important factors that define a culture.

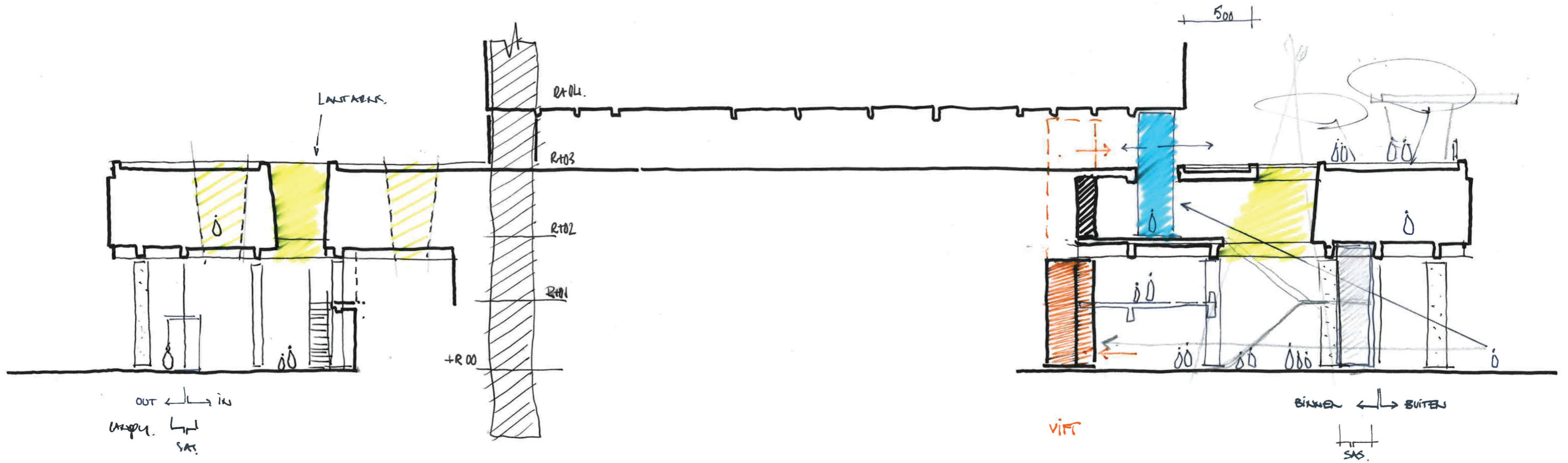
Think of the storage of food, water, valuables, resources, knowledge ... Today, the storage of data, energy, and CO₂ are at the forefront of our defining debates. Circularity, in essence, is a logistic process in which a series of variables and parameters need to fit and resonate—probability, availability, feasibility, and not unimportantly, the human condition. These kinds of volatility and fluidity require us to adapt our design attitude.

The design and construction focus shifts now to discovering, developing and defining the construction site manipulations and proceedings so they lead almost effortlessly to reuse. At the same time, practice-driven research looks at the development of prototypes and the coordination and alignment of the availability of materials and their placement in the design. As a first conclusion, it turns out that the issue in many cases is related to the theme of storage ... Circularity is not something new, it has happened throughout history, always and everywhere. Mainly for different reasons than today, but nevertheless, reuse was the obvious way. According to Walter Stahel, 'there existed different forms of circular economy. But it was a circular economy imposed by the scarcity of resources. Nowadays, we don't live in a society of scarcity, but a society of surplus. The circular economy that is needed now is not about managing flows, it is about managing stocks; managing surplus.'

In the 19th century, material was expensive, and labour was cheap. This partly explains why the constructions of that time are so material conscious. Circularity—the intensive reuse of land, structures, spaces and materials—will reach a turning point where it must become a mainstream attitude that surpasses the pilot project. From that moment, it will be cheaper to reuse than to resource new materials, even when the externalities are taken into account.

What we can do now is to refresh our memories and our knowledge about reusing materials. As designers, we do more than conceive and create transferable spatial conditions. The most important difference between the historical examples of reuse and today's examples is that we act with premeditation. We gather knowledge and experience in the hope that whoever follows us finds it useful, and in the conviction that they will most likely use this knowledge in different and unanticipated ways. Think Medusa ... Because everything is obvious once you know the answer. On top of that, working within the circularity paradigm is a way to create interesting and unanticipated architecture, today.

Time to talk seriously about circularity! Not just a case of kicking the can, and not just a case of educated guessing and imaginary foresight, but circularity here and now. Today. Now is not the time to wash our hands in a greenish dye, but to make them dirty ... Because you never know where and how Medusa will end up (or down).



SECTION
 Exploring the public interior, the atrium,
 the lanterns and the urban platform.

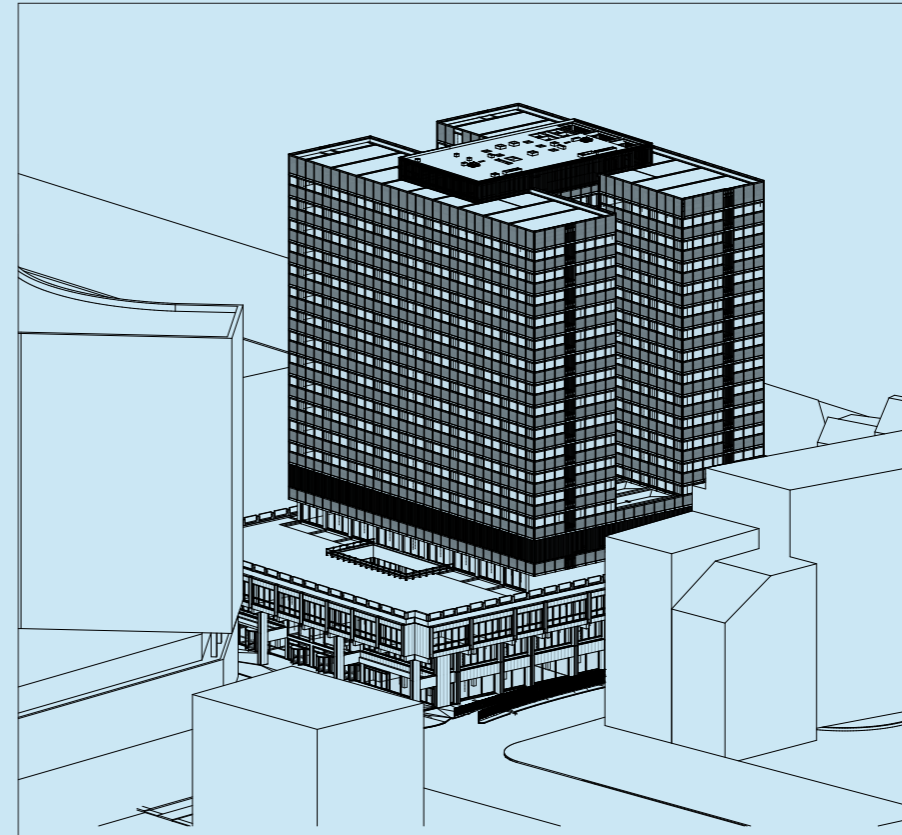




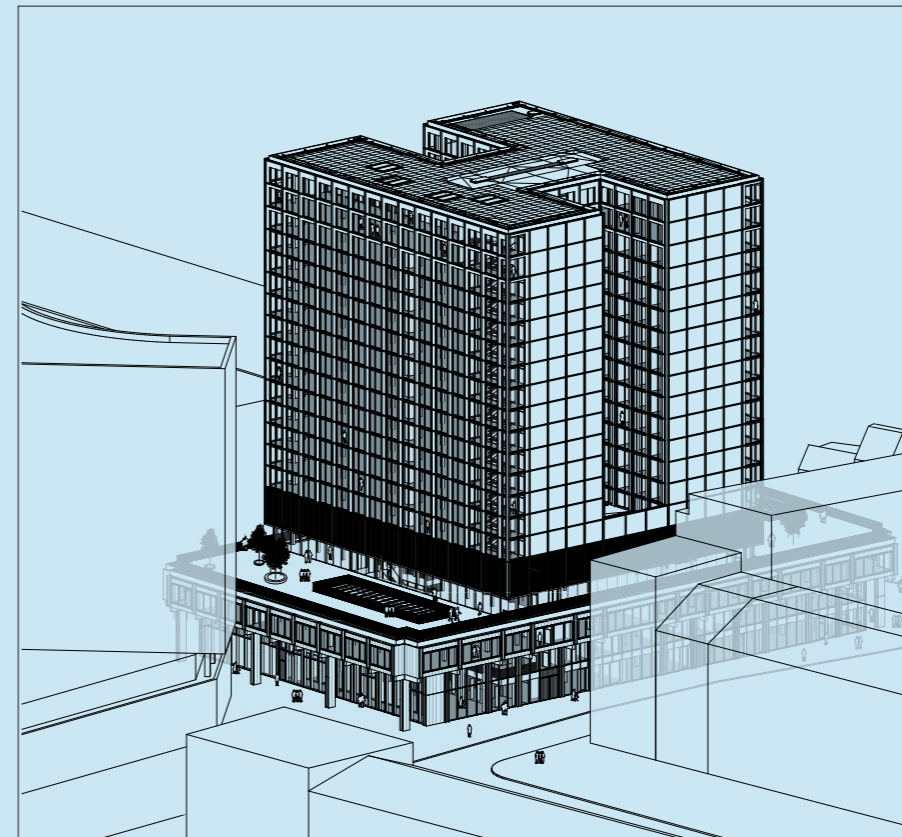




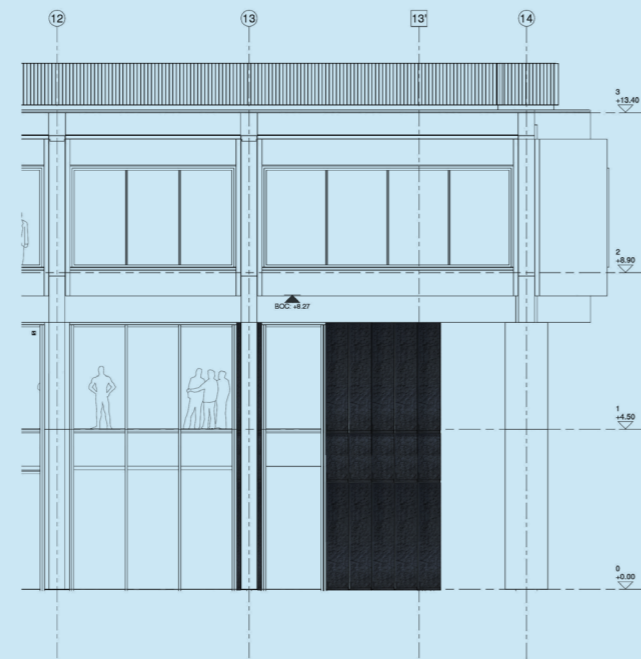




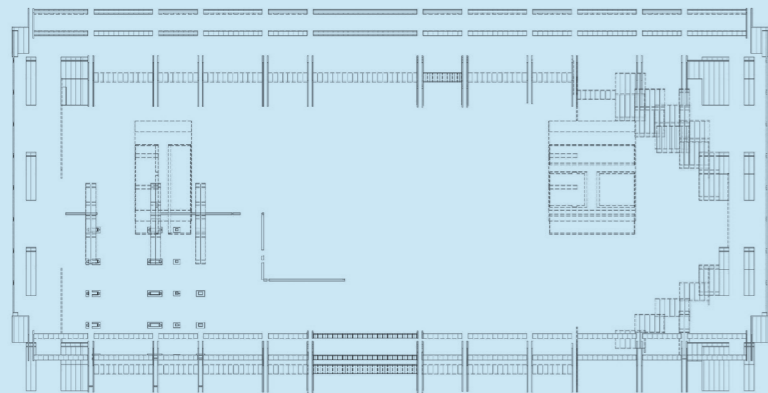
BIM model: existing situation



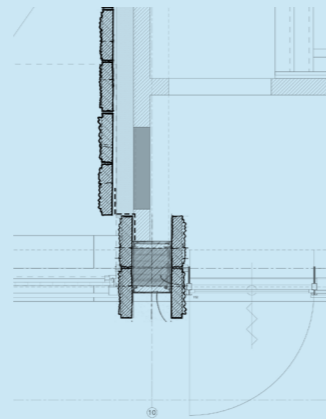
BIM model: proposed situation



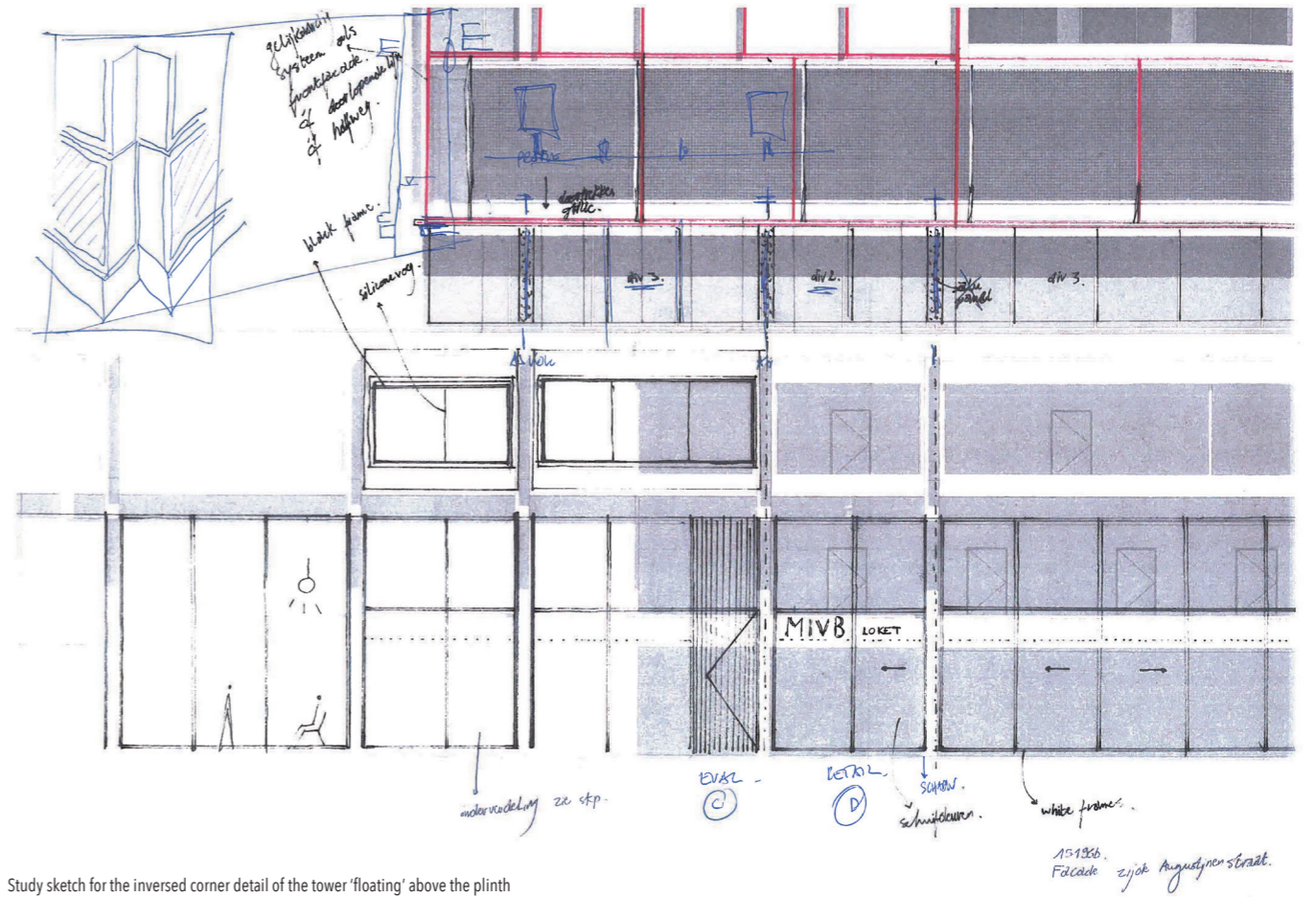
In situ reuse of the reclaimed bluestone slabs used to reconstruct part of the ground- and first floor façade (where the bus underpass was).



Overview of existing and repositioned bluestone slabs



Detail of the repositioned bluestone slabs



Study sketch for the inverted corner detail of the tower 'floating' above the plinth

'The first construction phase of the city of the year 2000.'

The Philips tower of Groupe Structures and the development of De Brouckère.

Sven Sterken

Several large office buildings in Brussels dating back to the 1960s are currently being given a second life, such as the Manhattan Centre, the WTC towers, the Centre Monnaie and the former Philips tower. Metaphors abound in this context: the last example, for instance, is being transformed 'from an imposing black box into an inviting, transparent entity', portraying the original building as 'a tear in the urban fabric.'¹ In addition to their supposedly anti-urban character, these buildings are also seen as symbols of undemocratic decision-making and profit-seeking by a select group of investors and politicians, at the expense of the 'ordinary' people of Brussels. Lastly, they are also perceived as ugly, banal and dark. By briefly explaining the origins of the former Philips tower, we want to put these associations into perspective. This is necessary, because if the perception gains the upper hand, a building's intrinsic qualities fade into the background.

In the early 1960s, just like today, the idea existed that Brussels' inner city should be 'saved' and made more 'liveable'. It was a period of massive urban exodus, with 'accessibility' of the city centre being a central theme: the explosive increase in car ownership resulted in traffic chaos which also embroiled public transport (trams and buses). Perhaps even more importantly, at least in the public opinion, was the shortage of parking space.

Added to this was the growing demand for high-end office space due to the city's increasing international profile. These claims were thought to be incompatible with the current, predominantly 19th century city; in keeping with the spirit of Expo '58, it had to be 'modernised' and adapted 'to the needs of the times'. The principles of CIAM (*Congrès Internationaux d'Architecture Moderne* - International Congresses of Modern Architecture), an international think tank of avant-garde architects with a radical functionalist vision of the city as the most efficient machine possible, were followed. To this end, separate zones for living, working and recreation had to be connected by a separated circulation infrastructure for cars, public transport and pedestrians. Post-war urban planning was thus mainly driven by infrastructure works that had to make accessibility to, and circulation within the (inner) city possible. This was best expressed in the so-called 'Richtplan' (Groupe Tekhnè, 1962), which provided for approach roads that

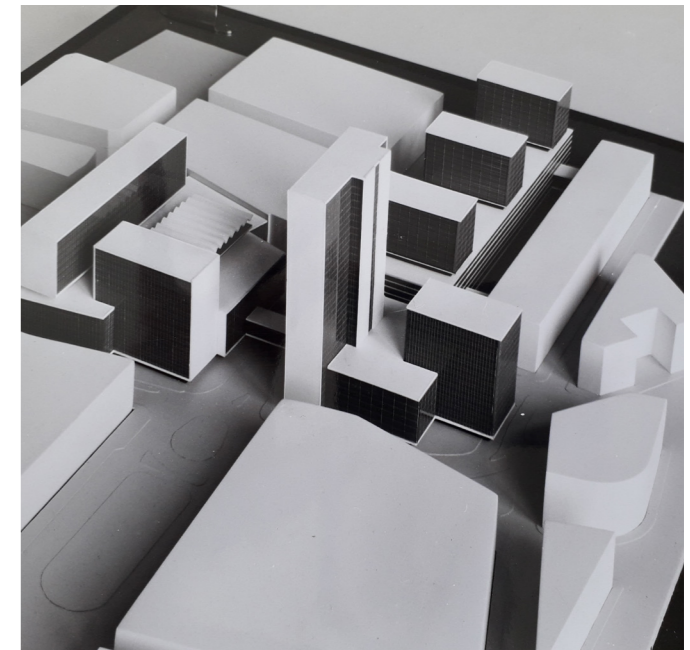


Figure 1: Groupe Structures, volume study of the 'Echangeur n°1' (likely 1962). Archives Etienne Hermans, collection of the author.

had to connect to a small ring around the historic inner centre. Large car parks would be provided at four strategic junctions to allow the Grand Place and its surroundings to become a pedestrian area. The most important junction was De Brouckère, where an intersection was planned between the (future underground) tramline between the North and South stations and the new metro line between Schuman and the city centre. The upcoming inauguration of the Berlaymont building in 1967 made these enormous infrastructure works an absolute priority.

For the realisation of this large-scale modernisation, the authorities looked at the private sector. This was not a first: the construction of the Central Boulevards in the mid-19th century was also a private concession initially. The principle of leasehold, introduced by then alderman for trade and municipal properties, Paul Vanden Boeynants 1953-58, was new, by contrast: the city retained ownership of the land, but had it developed by a private partner.

The new Urban Development Act (1962) also stimulated private initiative by broadening the possibilities for expropriation and grouping plots: whoever acquired half of a building block could have the other owners expropriated if the operation was 'in the public interest'. This principle was first applied in the development of the old post office building (La Grand'Poste) at the Place de la Monnaie. Against the Ministry of Postal Services and Telecommunications' idea to build new offices there, the city council insisted on a public plinth with a shopping arcade as a way of connecting the square with the Boulevard Anspach. Because La Grand'Poste occupied just over half of the building block and the construction of the metro was considered in the public interest, it could ultimately be expropriated in its entirety. This immediately set a much larger operation in motion: like the volume study for the area around De Brouckère by architecture firm Groupe Structures illustrated, the block on the other side of the Boulevard Anspach (the so-called Ilôt Vanniers, where the Philips tower was built later) was also included in the

new vision for De Brouckère, as was the block next to it (up to Rue du Marché aux Poulets, parallel to the meanwhile completed Parking '58). (Figure 1) The ambitions were literally sky-high: the study envisaged, for example, a high-rise building of 103 m on a six-storey plinth opposite the Centre Monnaie. This scale was based on financial considerations: the City of Brussels hoped to recoup the costs of the metro infrastructure works and related expropriations through taxes on the offices and shops that would replace them. In doing so, however, a long-term, gaping wound in the urban fabric such as that caused by the North-South Railway Junction had to be avoided at all costs; the development therefore had to be quick, instantly profitable and carried out at the same time as the infrastructure works.

These compulsory and complex preconditions made the development of the two building blocks on the Boulevard Anspach unattractive to the traditional Brussels building promoters. Charly De Pauw was the exception to this rule: although he had only just arrived on the scene, this flamboyant entrepreneur managed to win over the city council and the Ministry, and negotiate a 99-year leasehold under very advantageous terms, including a 'tailor-made' area plan. The speed, discretion and complexity of these transactions ('necessary' according to Vanden Boeynants but unfair according to the left-wing faction in the city council) gave De Pauw's operations a negative image that continues to haunt them to this day. Nevertheless, he succeeded in his endeavour and built an impressive, multifunctional complex on the Place de la Monnaie (within budget and on time!) with an underground car park, offices and a shopping arcade. It was an efficient, easily accessible urban interior for working, shopping and relaxing, but with a more generic architectural character and a limited activating effect on the surrounding public space. The project thus chiefly maximised the location's financial return and functional potential, but not its urban quality.

Meanwhile, a little further, in the building block on the place Fontainas, the Belgian division of Dutch electronics giant Philips was bursting at the seams. The board therefore decided to move the warehouses and workshops, but keep the showroom and offices in the city centre. After negotiations with the other owner of the block, the ACOD trade union, failed, and with the expiry of a joint rental agreement in 1966 in sight, discreet talks took place in the spring of 1965 with Charly De Pauw to move the showroom to the new complex on the Place de la Monnaie. The latter immediately launched a charm offensive: after all, with its resources, prestige and size, Philips was the ideal customer to get the development of the Ilôt Vanniens going. However, this commitment did not come naturally: it cost the Belgian board of Philips considerable time and effort to overcome the scepticism of the Dutch bosses for, as was customary at the time, Phillips preferred to build company buildings under its own management. However, it soon became clear that there was not much choice, and the three stakeholders were dependent on each other: the City of Brussels could not wait to appoint a developer or it would risk jeopardising the timing of the infrastructure works; De Pauw could not take the risk without sufficient guarantees from an institutional lessee; and Philips in turn was facing the end of a lease and the scarcity of sufficiently large plots in the city centre. Ultimately, an agreement was reached whereby De Pauw constructed the building, which Philips would

own after 79 years based on an annual payment. De Pauw also undertook the task of renting out the six unused floors, while Philips was allowed, at significant additional cost, to put the company logo on the façade and give the building its name.



Figure 2: Groupe Structures, Philips tower entrance hall with light sculpture designed by Robert Haussmann for Swisslamps. (© Koninklijke Philips / Philips Company Archives; used with permission)



Figure 3: Groupe Structures, Philips tower, typical floor. (© Koninklijke Philips / Philips Company Archives. Used with permission.)

This got the ball rolling: once De Pauw had acquired half of the building block, and following the approval of the area plan, the city council expropriated the remaining owners with barely three months' notice. They had to make way for the new office complex that had been designed by the architects of Groupe Structures (also involved in the Centre Monnaie) in record time. It comprised three parts: a four-storey underground car park for about 500 cars a plinth with a showroom and a large entrance hall, a tearoom, a travel agency, a record shop and a bank on the ground floor, and large open-plan offices on the two floors; above this were 17 floors of offices in two parallel wings around a common circulation core (Figures 2, 3). A large company restaurant and a 130-seat conference room were housed between the plinth and the floors of offices, at the level of the roof terrace. The more public role of the plinth was articulated by its robust, horizontal character, in contrast with the vertical, light effect of the curtain wall of the office towers. This functional and architectural design was clearly inspired by SOM's famous Lever House in New York in 1952, which became an international symbol of the modern, transparent and no-nonsense approach to American business - values that a technology company such as Philips liked to be associated with. (Figure 4)



Figure 4: Groupe Structures, preliminary design Philips tower at the Boulevard Anspach. Archives of the Compagnie de Promotion, Kraainem. Used with permission.

The construction of the Philips tower was a logistical challenge: just like the bank counter on the site, the tram tracks crossing the plot had to remain operational, and construction needed to be coordinated with the planning of the metro works. The timing was very tight (maximum three years) because Philips wanted to inaugurate the building on its 50th anniversary in Belgium (1969). For this reason, the most modern construction methods at the time were applied, such as the use of slurry walls of 22 m deep (100 m of which are shared with the metro tunnel) and

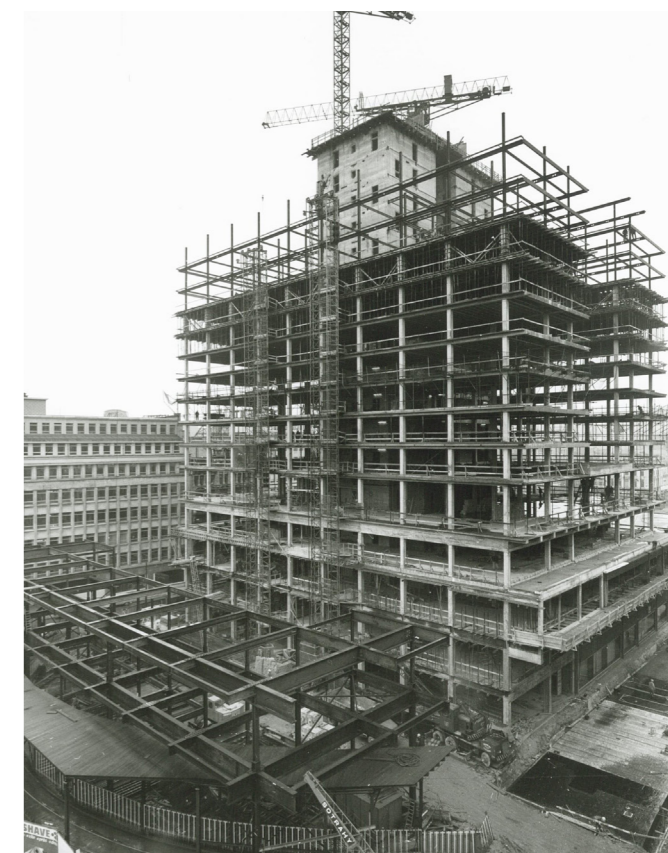


Figure 5: Philips tower under construction. Situation on 22 February 1968. Archive Jose Larose. Used with permission.

sliding formwork for the central concrete core (constructed in barely three weeks). The building was erected with a steel structure around this core which allowed for work to advance rapidly. (Figure 5) In total, more than 3,500 tonnes of steel and 17,000 m³ of concrete were used. Remarkably, the building was not constructed from bottom to top, but simultaneously in both directions, starting from level -1 (the level of the metro).

Superlatives were not spared at the inauguration of the Philips tower. *Architecture magazine*, for example, described it as 'much more than a mere administrative building, with the advantage of prestige and standing due to its location. It is also a mirror full of life in which the sky of Brussels is reflected, a pulsating meeting place between spirit and movement.'² A special promotional supplement with Flemish newspaper *Het Laatste Nieuws* opened, not coincidentally, with an introduction by Vanden Boeynants, who saw the new site of Europe's leading electronics company in the centre of Brussels as proof of the new dynamic in the city that he himself had helped to launch.

Further on, the new developments along Boulevard Anspach were described as 'the first building phase of the city of the year 2000'. (Figure 6) This particularly applied to the Philips tower: as outlined above, it was conceived from the start as a crucial piece of the puzzle in the densification of the city centre. The building indeed enabled the hoped-for mix of working, recreation and shopping: the withdrawn, double-height, glazed ground floor created a covered gallery, with the aim of opening up the Boulevard Anspach more to pedestrians and thus reinforcing its role as a commercial axis.



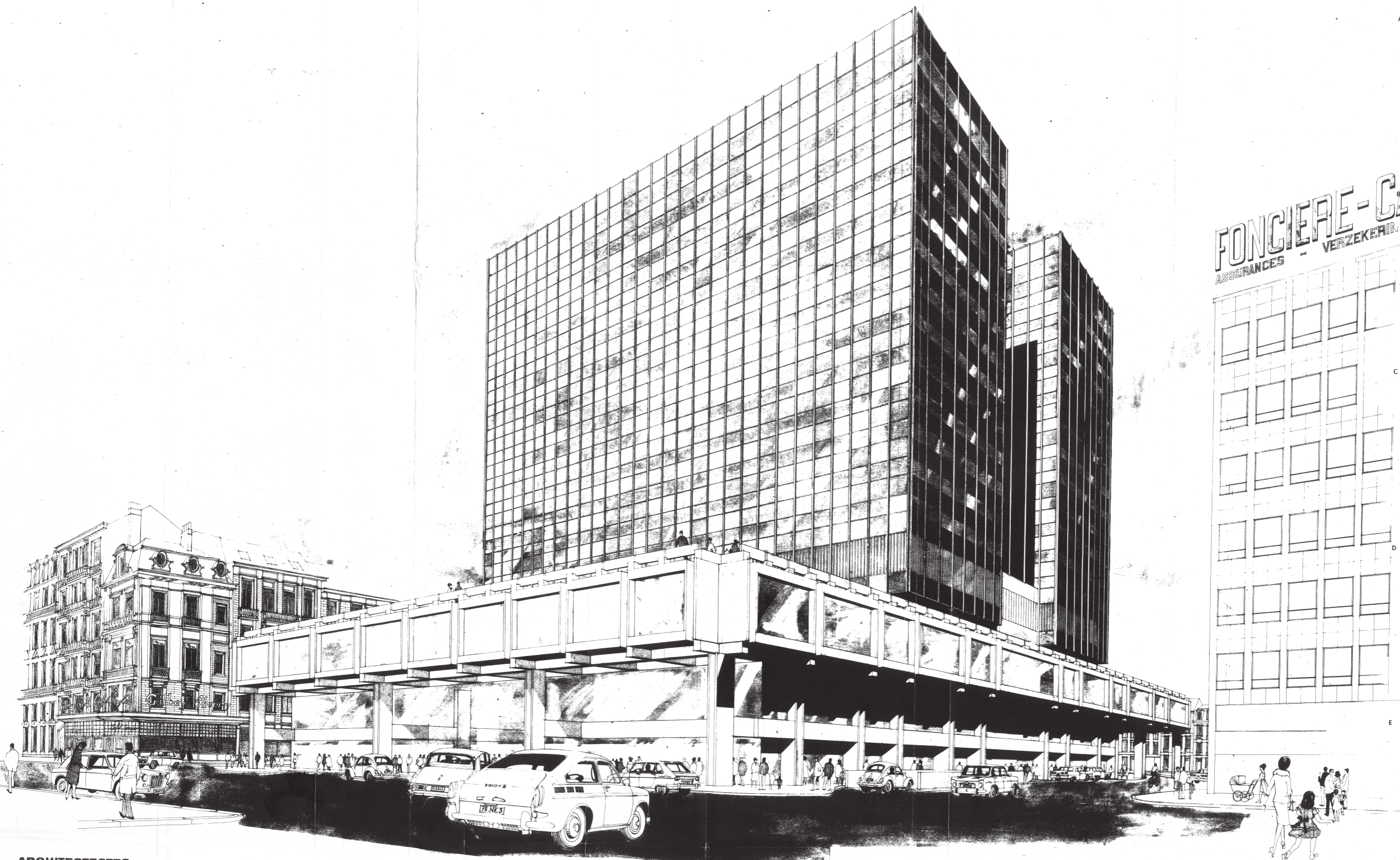
Figure 6: Groupe Structures, Philips tower, photograph shortly after handover in 1969. Archive Jose Larose. Used with permission.

While the building's plinth mitigated the difference in scale with the 19th century city and the high towers, it also hinted at a new urban morphology: inspired by then-popular CIAM ideas and as applied in their master plan for the Quartier Nord, Groupe Structures proposed to reserve the street for motorised traffic in the future and to give pedestrians free space on an artificial ground level at a height of 13 metres. The plinths of the Philips tower and the Centre Monnaie were the first application of this in the city centre.

It is worth noting that the Philips tower has survived this now outdated vision of the inner city as a conglomerate of mainly economic functions and strictly separated traffic flows; 50 years on, it has been adapted to a totally different vision of urban development without fundamental changes. In contrast to the practice, common until recently, of 'neutralising' the typical characteristics of this type of post-war heritage (functional articulation, curtain wall, urban scale), these aspects have now been reinforced; as a result, the building's initial architectural qualities and urban development ambitions are all the more pronounced. The Philips tower, which because of overdue maintenance had started to look like an ugly duckling and thus seemed to confirm all the prejudices against the architectural heritage of the 60s, is now given the chance to fully live up to its urban potential, and shake off the negative perception that has surrounded it for so long.

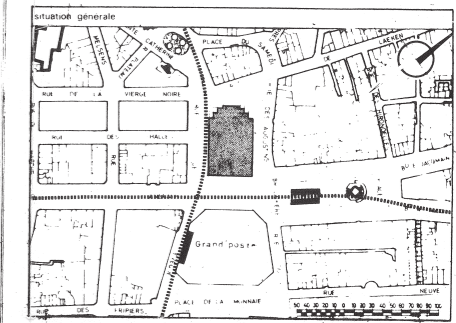
¹ <https://www.immobelgroup.com/nl/nieuws/multi-eeen-renovatie-voor-meer-openheid>

² 'Le Complexe Philips a Bruxelles', Architecture, 1969, p. 600-611 (p. 602). Translated by de author.



FONCIERE-CA
ASSURANCES - VERZEKERING

complexe de la Philips		V 21	1028
perspective		date	29.4.1966
		surface	1,21 m ²
		EMETTEUR: GROUPE STRUCTURES	
nature du travail	immeuble administratif	destination	
situation	boulevard ansbach		
autorités admises	Bruxelles - Brabant		
maître d'ouvrage	cda	12.90.68	1, rue de l'Évêque Brux 1
architectes	groupe structures	11.79.72	138, chée d'Isaules Brux 5
gén. civil	gécitra	11.80.02	1, rue de l'Évêque Brux 1
ing. équipement	Marco & Roba	27.42.27	221 bd Léopold 3 Brux 8



complexe de la Philips		V 21	1028
orientation		échelle métrique	

définition du plan - schéma de repérage - type - indices			

complexe de la Philips		V 21	1028
nature des modifications			

ARCHITECTES.
GROUPE STRUCTURES

ORIGINAL 1966 DRAWING
View from Place de Brouckère showing the urban ambition of the designers of the Philips building.

Approaching the Reconversion of an Iconic 1966 Office Tower in Brussels

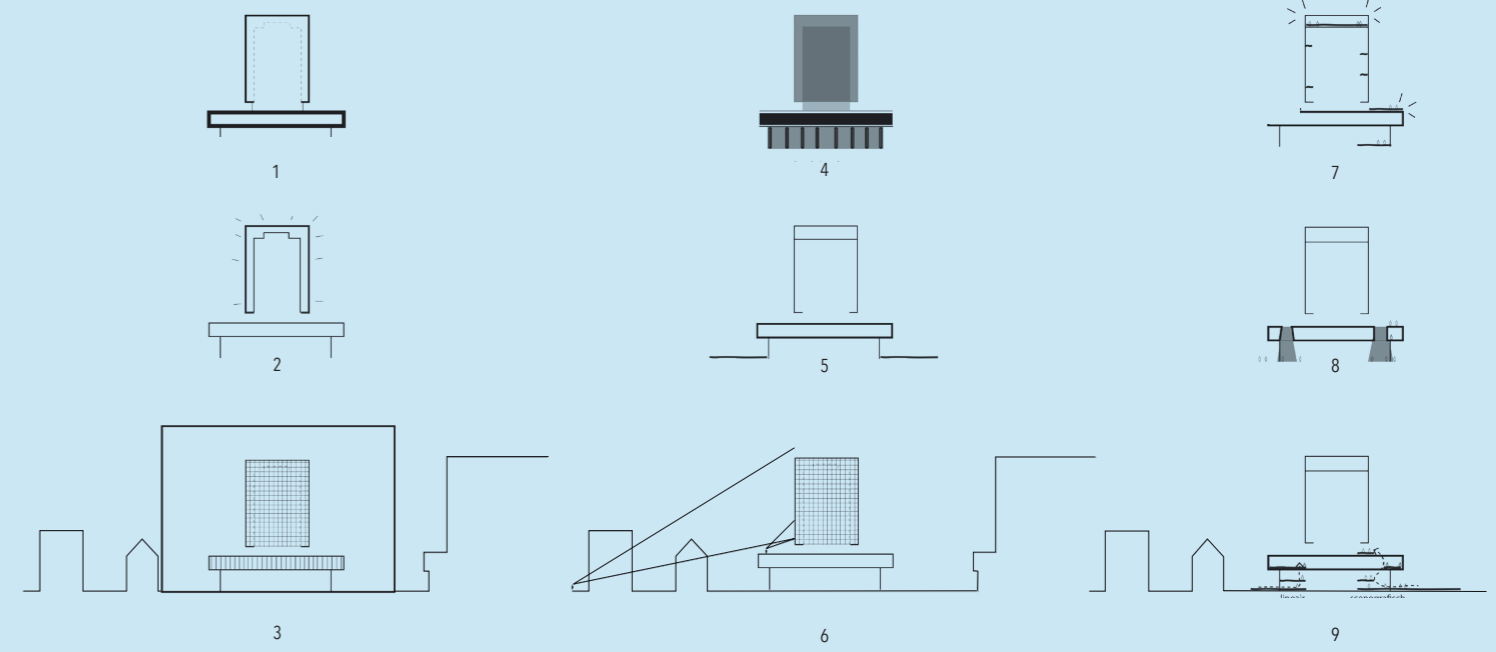
And so it begins

In a late modernist gesture, the Dutch Philips Company constructed its headquarters in the old city centre of Brussels in 1966. Two entire and densely populated city blocks were demolished to make way for a 40,000 m² office tower of 18 levels, including a three-storey-high podium of plinth. A dissociation and discontinuity of the urban tissue was the consequence. The project was to be the inner city 'touch-down' of an oversized real-estate development that started in the Brussels North District and was to combine a series of towers and podia with twenty-something pedestrian bridges and flyovers.

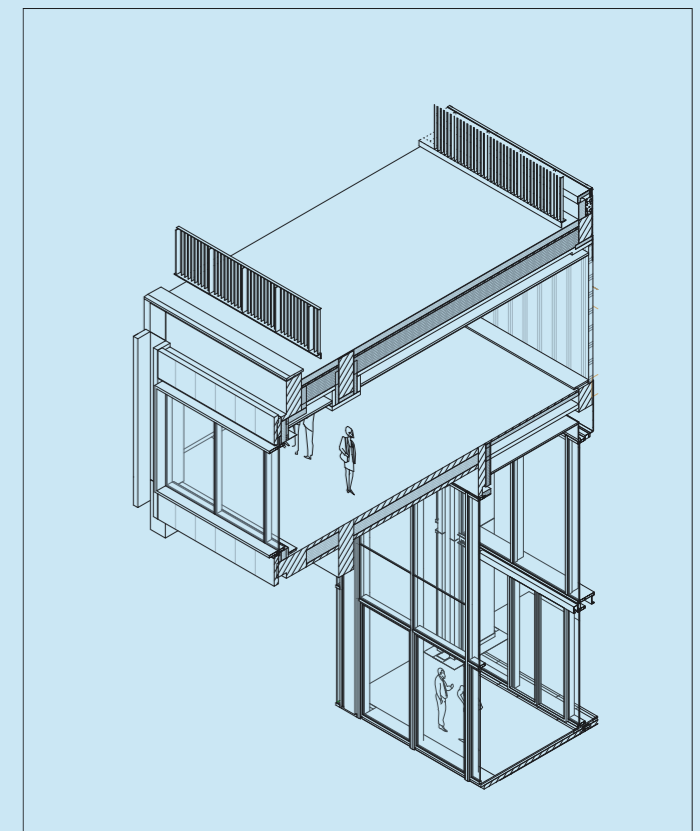
As BTI -Brouckère Tower Invest: Whitwood and Immobil- gained ownership of the edifice, they launched a design brief to build a new real-estate development to replace the existing building. The programme was a multi-tenant and mixed-use project.

CONIX RDBM Architects approached the design brief with a feasibility study. One of the critical questions asked during this preliminary phase was whether it would be possible to keep the existing building and consider it a reconversion, an overhaul? The answer turned out to be a resounding yes!

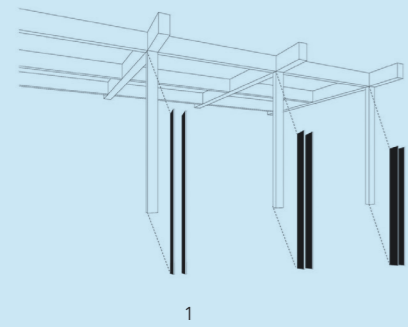
The Philips tower was converted from a mono-functional single-tenant and stand-alone urban object into a multi-tenant office environment with an emphasis on conviviality, publicness and 'spatial engagement'.



- | | | |
|---|--|--|
| 1 understanding the morphology | 4 from a single use to a mixed-use | 7 hotspots |
| 2 a 'light' layer as an offset of the tower | 5 engaging the surrounding public domain | 8 public and collective atria |
| 3 Philips tower as 'one' edifice | 6 responding to the different urban scales | 9 accessibility of the urban platforms |



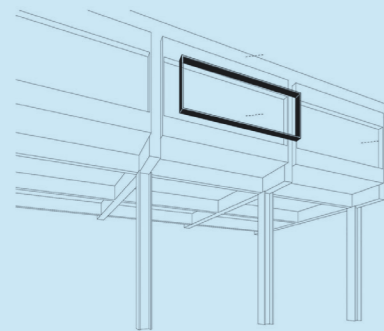
BIM model: sample prototyping for the groundfloor and platform



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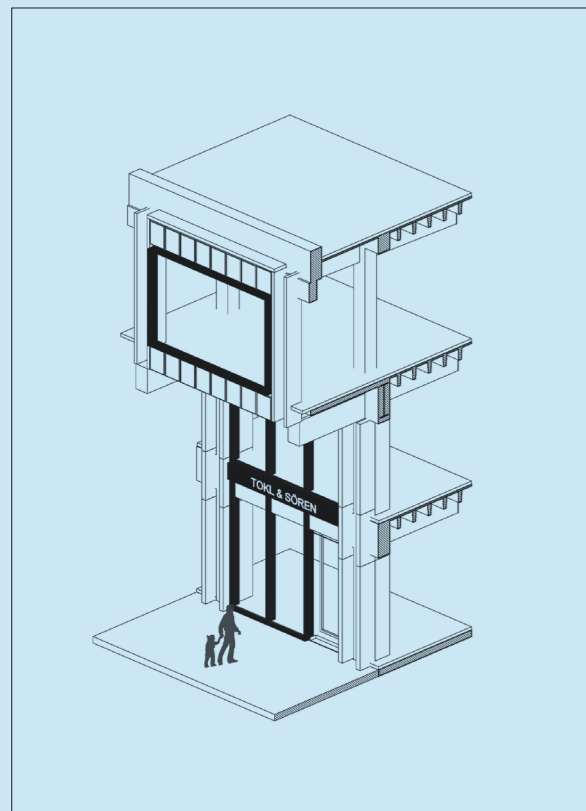


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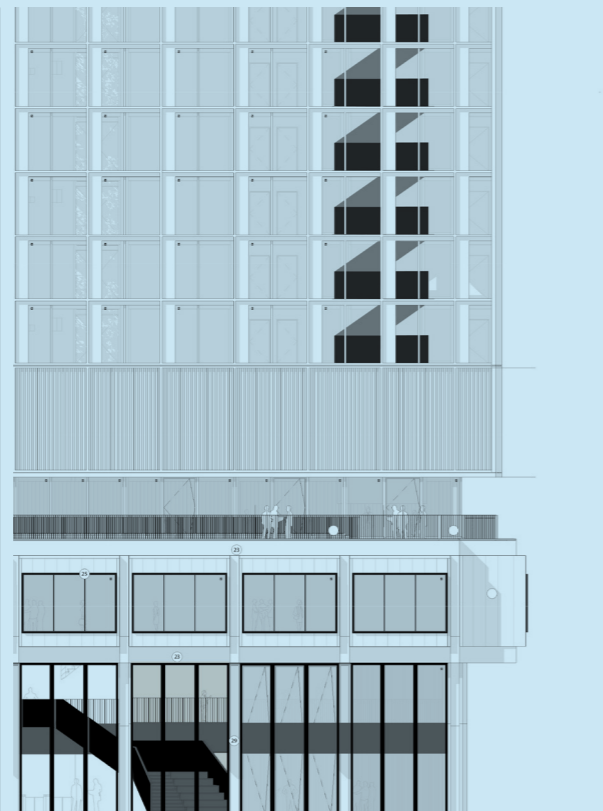


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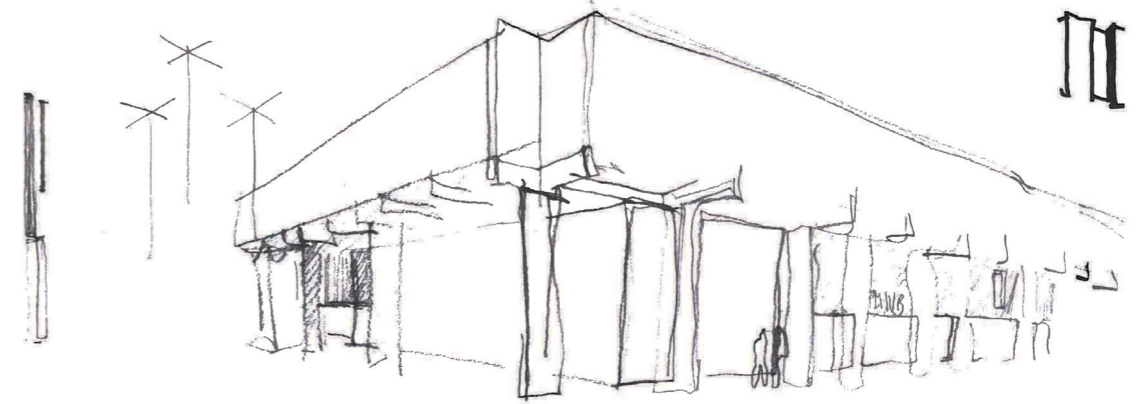
- 1 a celebration of the existing structure and expression
- 2 working with the brutalist qualities by reintroducing the black expressive frames in the second-floor windows
- 3 removing the horizontal bluestone slabs and replacing them with a retail façade



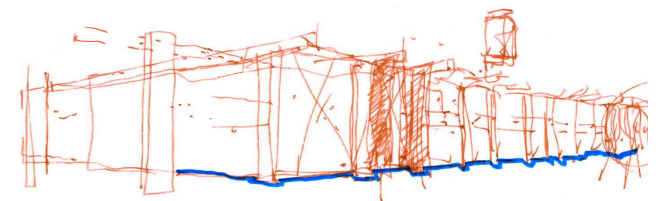
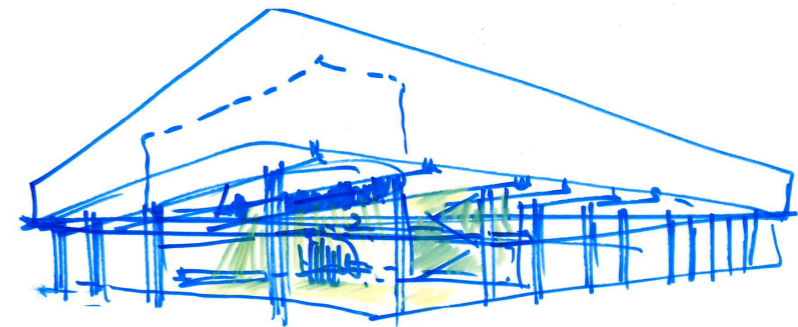
BIM model: sample prototyping for the ground floor and platform



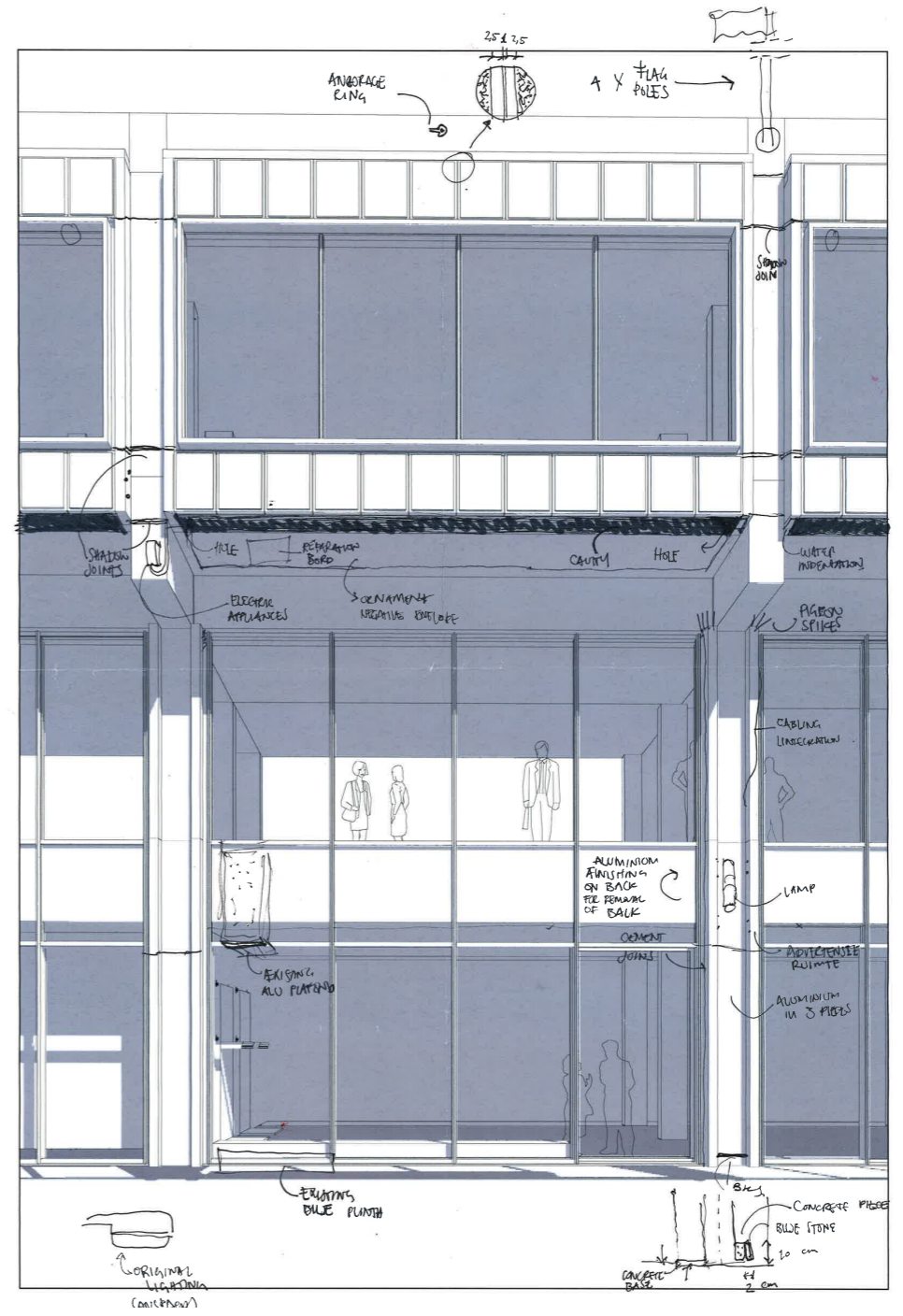
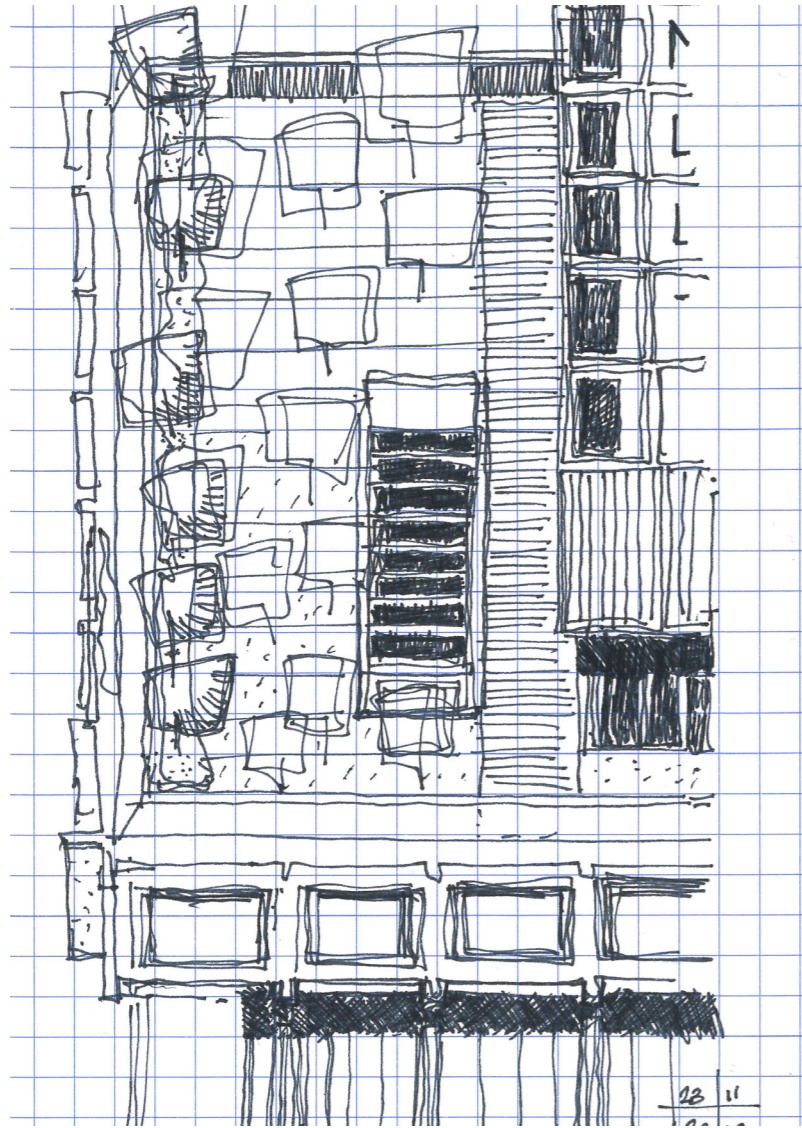
Mixed media: BIM Model and photoshop: stairs



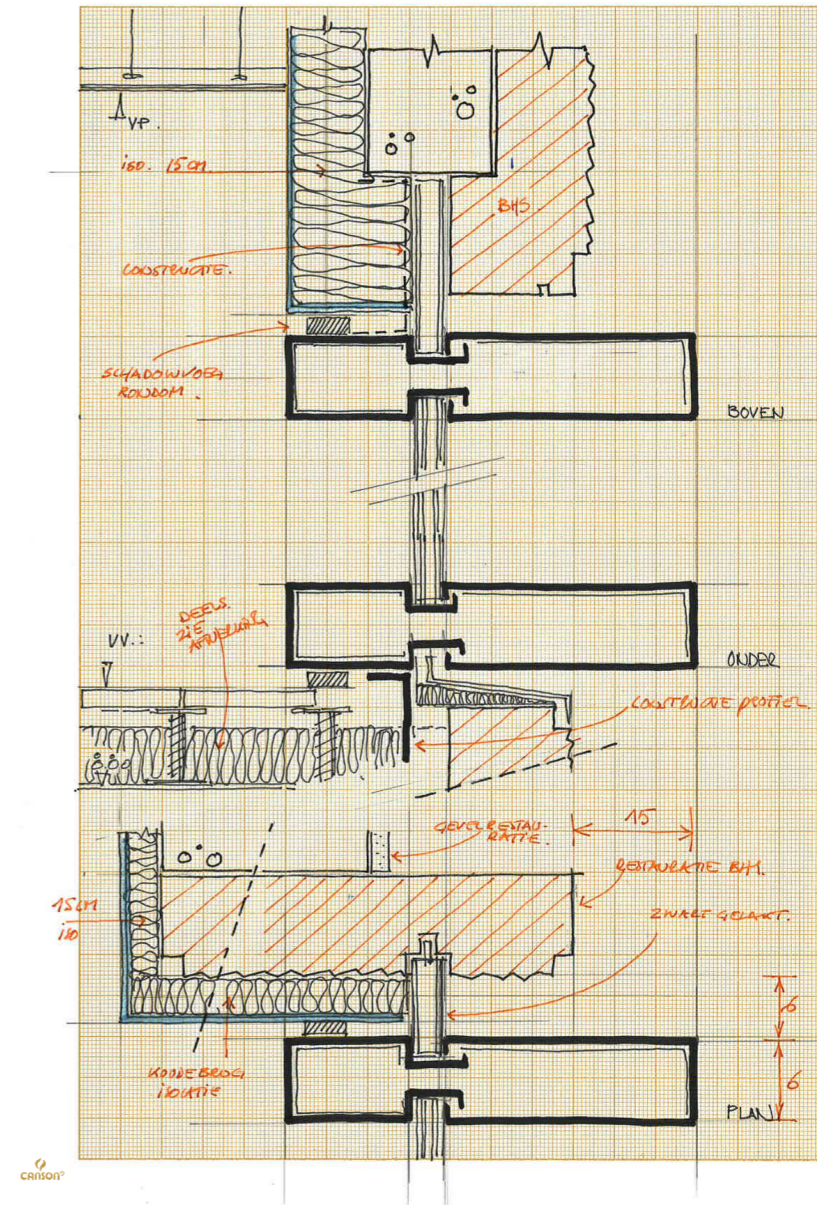
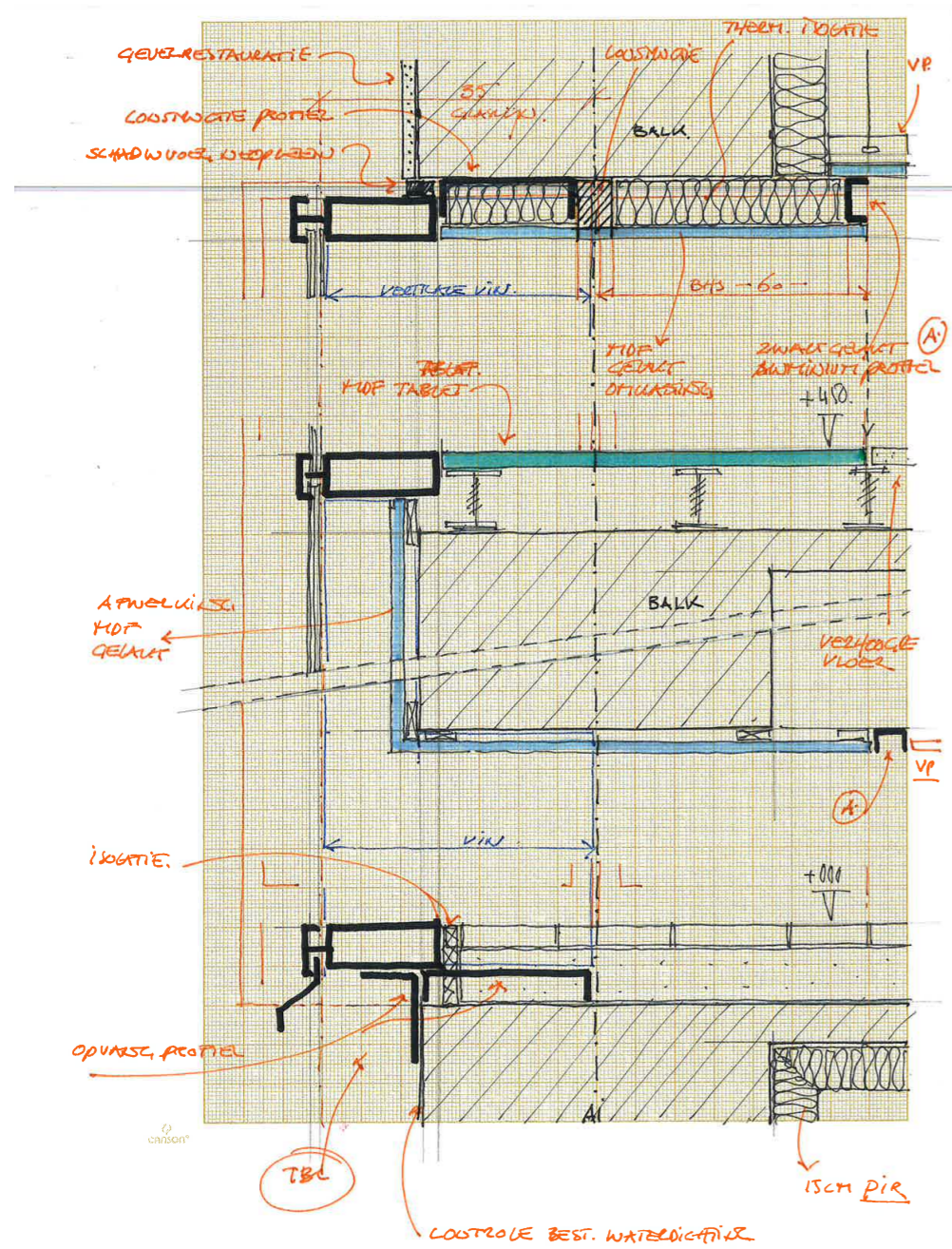
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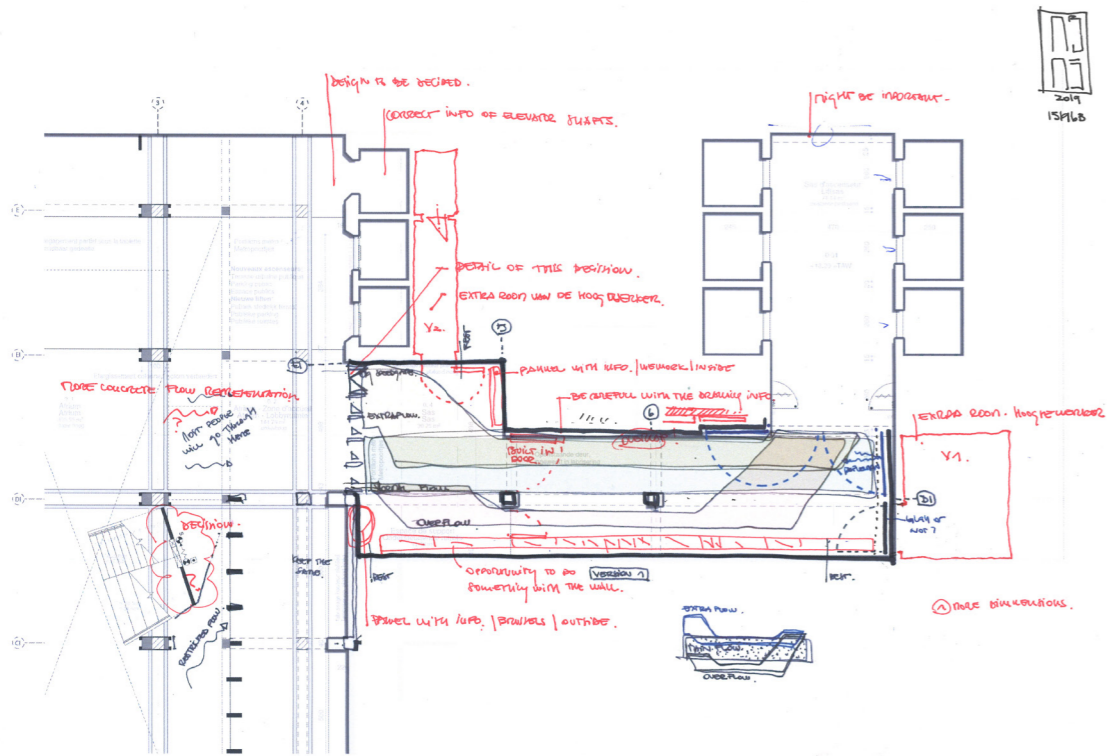
STUDY SKETCHES
The urban platform as seen from below celebrating the expressive architecture.







STUDY SKETCHES
 Detailing the retail façade (left).
 Detailing the reintroduced black expressive frames in the second-floor windows (right).



STUDY SKETCHES
Projecting people flow between the entrances and the elevators.





MULTI

Kristiaan Borret

The public debate on urban development in Brussels is strongly marked by a trauma. A trauma that is still invoked by many today, even though the tragedy happened a generation ago.

The drama occurred during the second half of the last century, and was the modernisation of Brussels' urban fabric. The optimistic belief in the progress of modernist architecture was celebrated by broad sections of the population during the 1958 World Expo in Brussels, but was ultimately shrewdly hijacked in the 1960s and 1970s by real-estate developers and administrators in pursuit of financial gain and the feeling of power to give Brussels a makeover. At that time, there were brutal interventions in numerous areas in the urban fabric. New buildings and a car-oriented traffic infrastructure were usually accompanied by the destruction of historic buildings and squares. When the Philips tower was built in 1969 on the Place de Brouckère by demolishing two entire blocks of houses, it was one of the many urban development interventions that we would find unacceptable today, but was in those times allowed to go ahead. 'Bruxellisation' became the term used for the changes the city underwent during this period.

In the face of this large-scale modernisation of Brussels, residents grew increasingly dissatisfied, which gradually developed into a deep trauma. This trauma is still felt today and has become a strongly entrenched ideology in the contemporary debate on urban development in Brussels. However, I think the time is right to adopt a different attitude vis-à-vis the late-modernist interventions in Brussels, which could be more productive in nature and - why not? - provoked by Rem Koolhaas' thesis of 'amnesty for the built environment'. For the young generations of city dwellers, the results of the 'Bruxellisation' are now part of the familiar street scene and, more so, part of Brussels' identity.

It's a feeling that genuinely exists and for this reason should also be given a place in the public debate. I myself am attracted to a positive and contemporary narrative about Brussels, that of the super-diverse city, with a socio-demographic composition that is unparalleled in Europe. A city such as this is not homogeneous but heterogeneous, and the urban form should reflect this. The disharmony that has marked Brussels and that is always presented as a trauma from the past, could undoubtedly use correction, adjustment and improvement here and there, but is just as much in need of acceptance and recognition, as a true strength of Brussels, which I would like to see as the image of diverse European city of the future.

When CONIX RDBM Architects started work on the renovation of the Philips tower in 2017, fortunately the project architect was too young to be afflicted by the trauma, and he happily set to work, with a passion for the modernist story of this feat of corporate architecture. The property developer, Whitewood, also had the right

ambition and the right vision: valorising the density in this central location with a conservation-oriented approach that simultaneously pushes forward the frontiers of circular construction and is open to public added value. The intention was to completely reanimate the building, in line with the redevelopment of the central avenues as a pedestrian area, which launched a new dynamic for the city centre.



Open debate

As Master Architect, I was contacted by the architects and the developers from the start of the design process to further stimulate the spatial quality of the design. The acquaintance was astonishing and indicative of the open character of the cooperation that followed. The first time we met in person was immediately in the building itself. Most of the interior of the office floors had already been dismantled and we entered a majestically empty floor, a (dirty) white wide space with a view of city life outside. The low sun was shining in. In the middle was a very long table on which all kinds of things were displayed: old photos, archive material, collections of analyses, plans and sections, models, technical details, old and new materials, random finds, etc. Stylishly displayed, a baroque still life, but arranged with a geometric meticulousness that Florence Knoll would have appreciated in a corporate interior like in Philips' glory days! For me, this display and the open mentality that went with it was a striking example of the kind of dialogue, between architect and developer on the one hand and public authorities on the other, that must be allowed to take place to deliver quality. Spatial quality always requires a good dialogue. Regulations provide a minimum level, but are not enough. Regulations can set standards, avoid excesses or exclude blunders, but they cannot guarantee the special quality we're looking for. A good dialogue needs openness, sound arguments and commitment. That's when it becomes an interesting dialogue and spatial quality ultimately becomes a shared value.

Gradually, for the MULTI project, a dialogue about quality developed, which through ongoing exchanges ensured that the original ambitions were continually honed and more and more stakeholders became involved.

While the matter of programme and density is usually an economically driven discussion, in this case, it quickly offered a solution for integrating the technical facilities in a smarter way by creating extra volume so that the limited ceiling height of the office floors was countered with more light and spaciousness to create pleasant workplaces. The insight that a little extra volume is crucial to give the architect the margin to achieve a better transformation of the building - and how this contributes to qualitative reuse - is something that we have been advocating regularly with the BMA team ever since.



The 13th floor of the Philips tower served as a workplace, meeting and exhibition space.

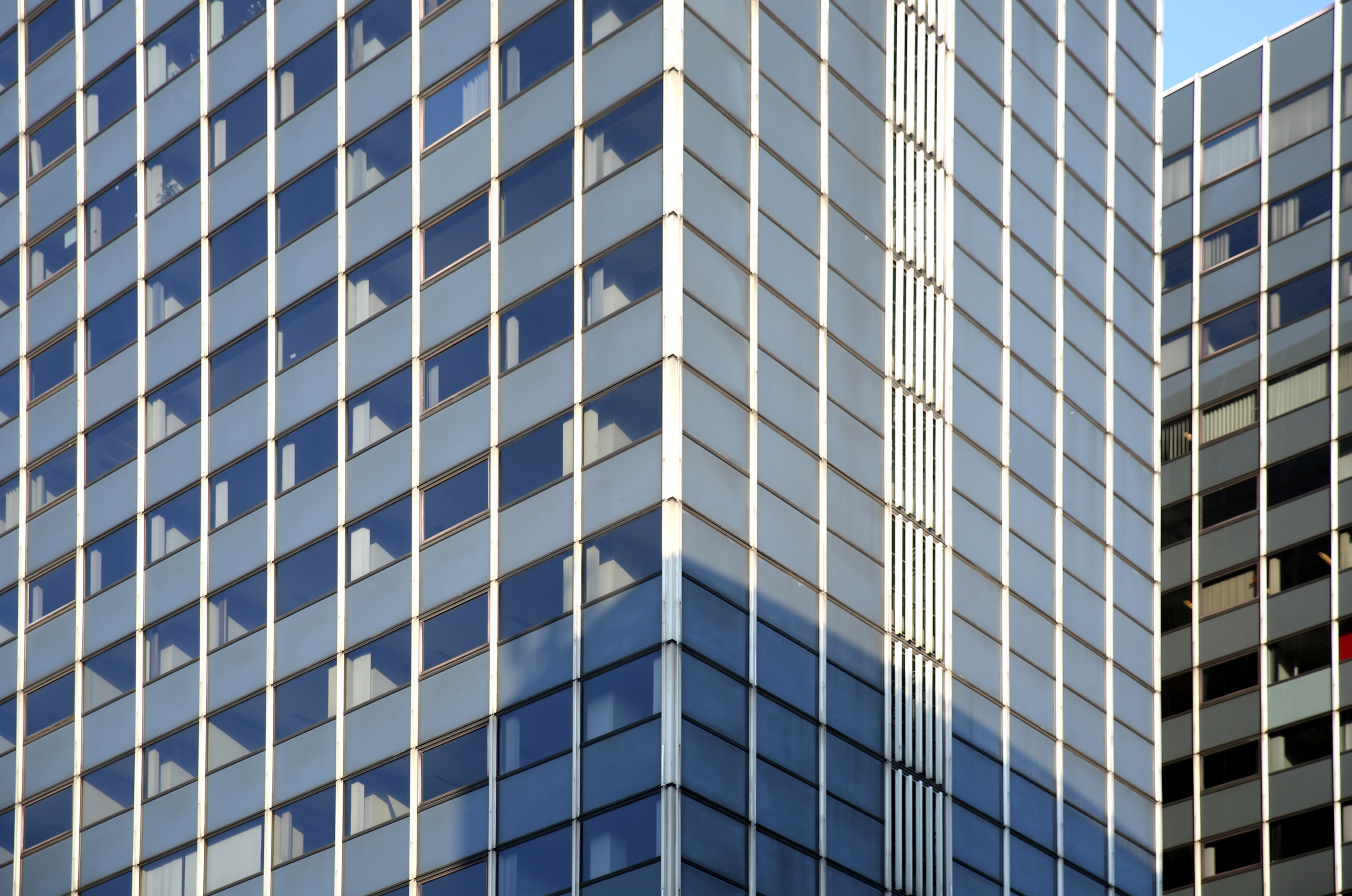
The reuse of materials increasingly came to the foreground as a spearhead of the sustainable approach and ultimately became an important asset. The MULTI project team pushed the boundaries of circular construction in Brussels on a large scale and was justly rewarded for this. Not only were existing building elements significantly reused on-site, but they were also transported to and from other building sites in Brussels. Some of the existing architectural elements were of exceptional quality, such as the large panels in cleaved bluestone. During the dialogues about the design, appreciation for the brutalist 1970s look of the architecture increased, and it was decided to integrate these panels in the new part of the building as well. For this reason, the bluestone had to be very carefully dismantled in one piece for use elsewhere in the project which led to the rediscovery of old techniques and manual crafts. This was another new insight we took from the project: reusing 'free' materials can bring old crafts back to life but also increase the labour hours for processing. From a social point of view this is certainly preferable, because it is better to spend money on upgrading local labour than on the globalised economy of importing materials from the other side of the world.

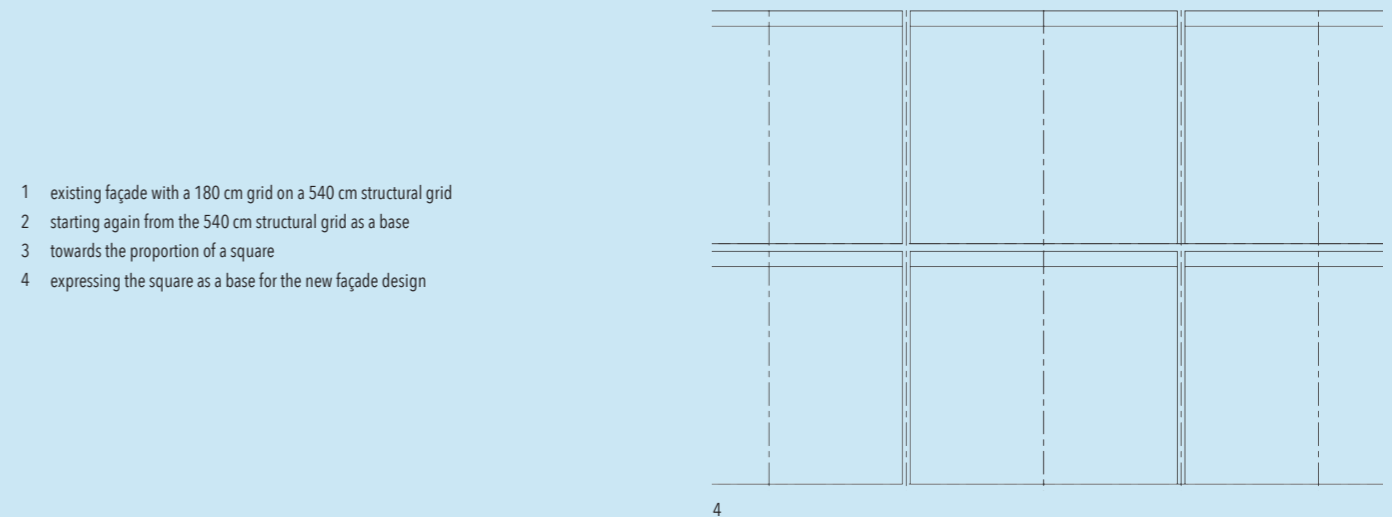
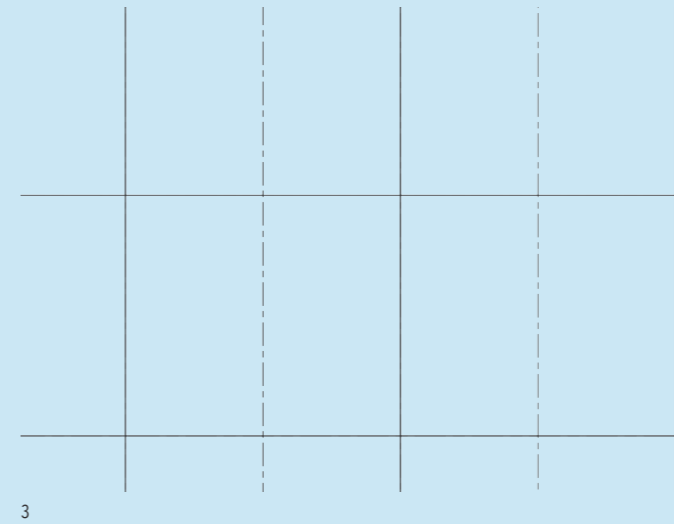
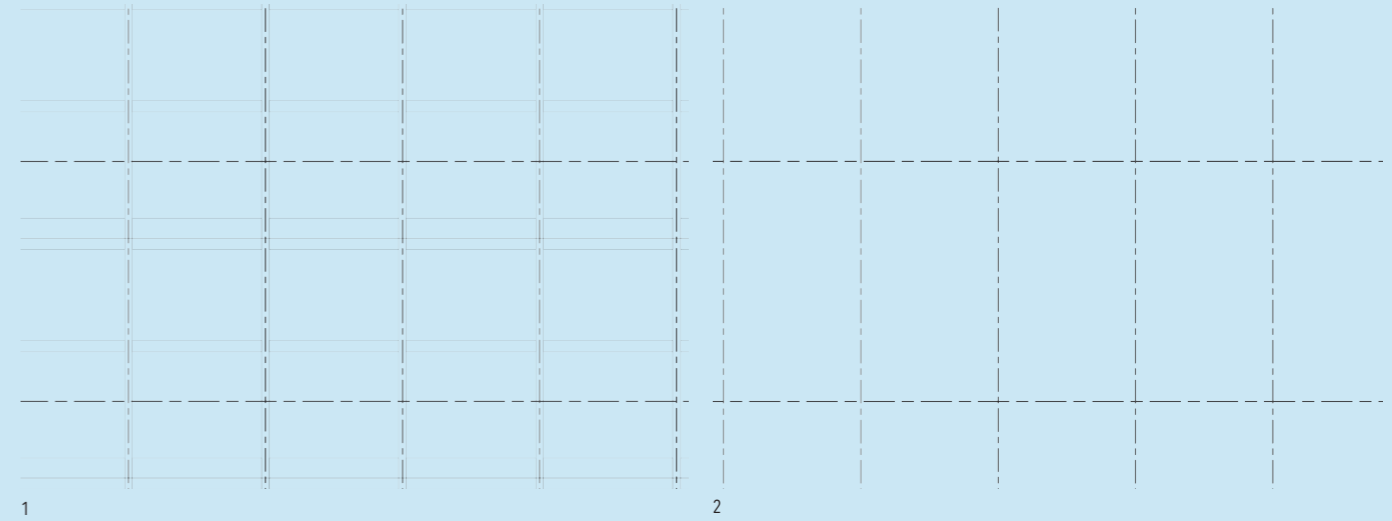
However, the successful interaction in the dialogue between private and public was most obvious when it came to opening the building to the public space. The first idea was to create an indoor shopping arcade, but fortunately the conviction soon prevailed to activate all the façades by directing the new functions on the ground floor towards the outside as much as possible, to the city's public space. However, this public space was not the best. To the side and rear of the Philips tower, along the pavement, there was an open entrance for cars to the underground car park. These long ramps formed a real barrier for pedestrians and were also very dirty and noisy. There was also a special turning loop at the back under the building that was used by STIB buses. That too was a gloomy and lost space and a blot on the surrounding area.

As Master Architect, I was able to take the initiative to use the transformation of the building as a lever to improve the surrounding public area. Several private and public stakeholders became involved in the dialogue about quality: the developer and the architects, the car park operator, the urban planning departments of the Brussels Region and of the City of Brussels, as well as public transport company STIB, the mayor of Brussels and the Minister for Mobility.

On the one hand, the developer was prepared to incorporate the long entrances to the car park within the built-up volume in the plans, i.e. simply with a garage door in the façade. In this way, the car ramps in the pavement could disappear and the continuity of the public space was restored. On the other hand, the STIB agreed to reorganise the circulation and bus stops to eliminate the turning loop under the building. This got rid of this eyesore under the cantilever of the plinth at the back of the building. The façade was shifted toward the Rue De Laeken for better accessibility, thus eliminating the rear effect. A building never stands alone, and the urban quality of a building is about the interaction between architecture and public space. This is illustrated by the adjustments made during the supervision of the design process. The renovation of the Philips tower as a building went hand in hand with cleaning up and upgrading the surrounding public space. Public life on the street is more comfortable now and the building plays a more active role as an urban plinth.

Call it a win-win situation, but it also illustrates our strategy of systematically focusing on quality by working upstream and cooperating as early on as possible in the design process. The MULTI tower project is a great example of how quality improvements can flourish thanks to the close interaction of a good dialogue between private and public stakeholders.

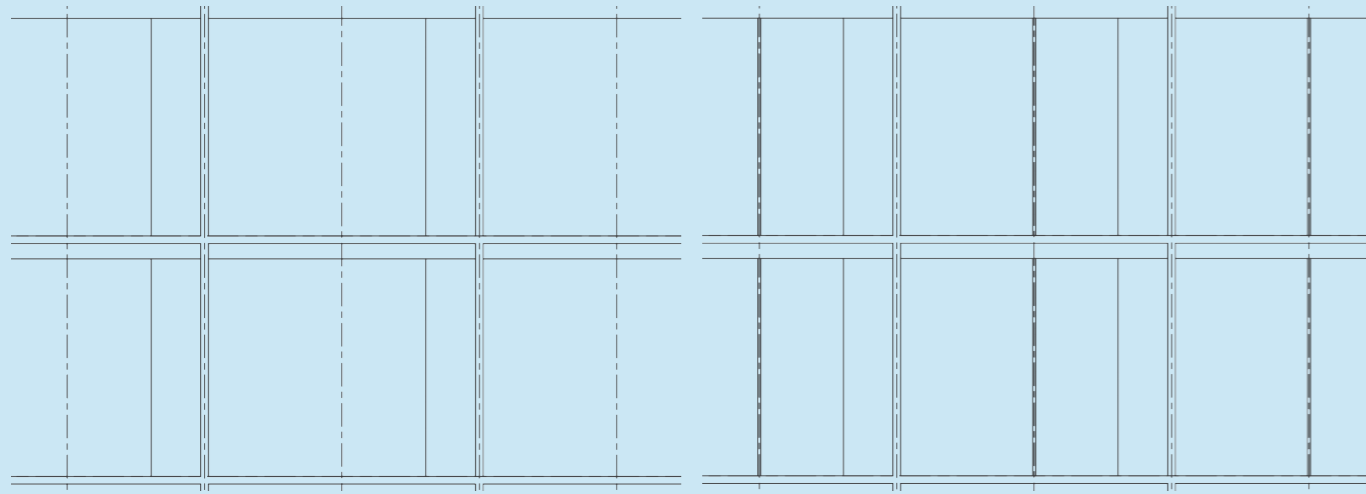




- 1 existing façade with a 180 cm grid on a 540 cm structural grid
- 2 starting again from the 540 cm structural grid as a base
- 3 towards the proportion of a square
- 4 expressing the square as a base for the new façade design

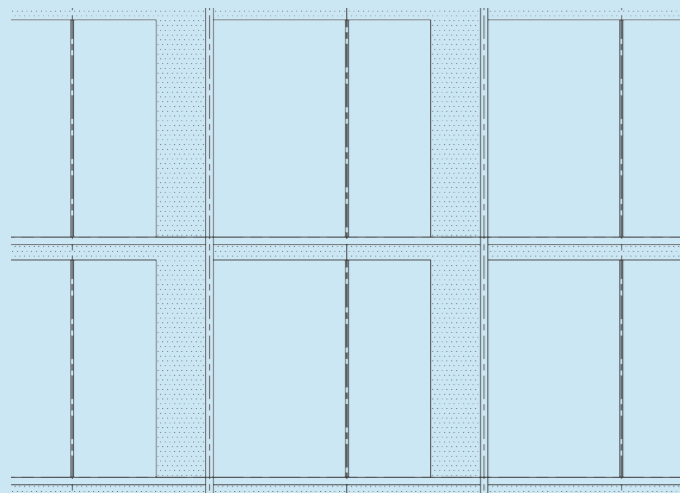
AUTOCAD DRAWINGS

Starting from the existing structural grid and in line with the rationality of the original façade and tenant a new rationality was developed.

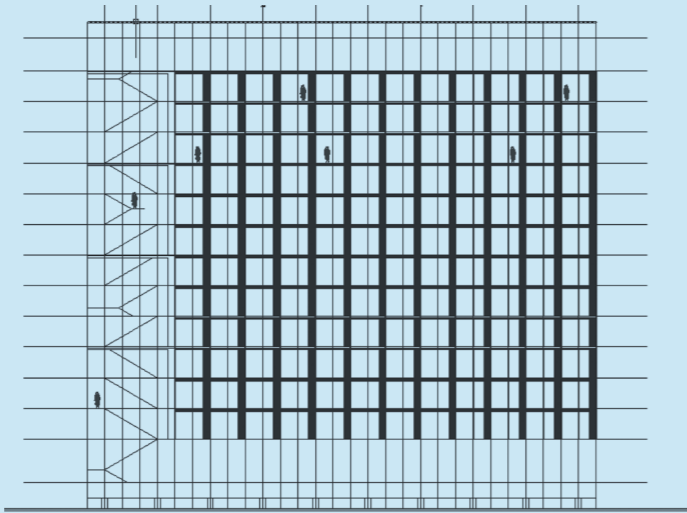


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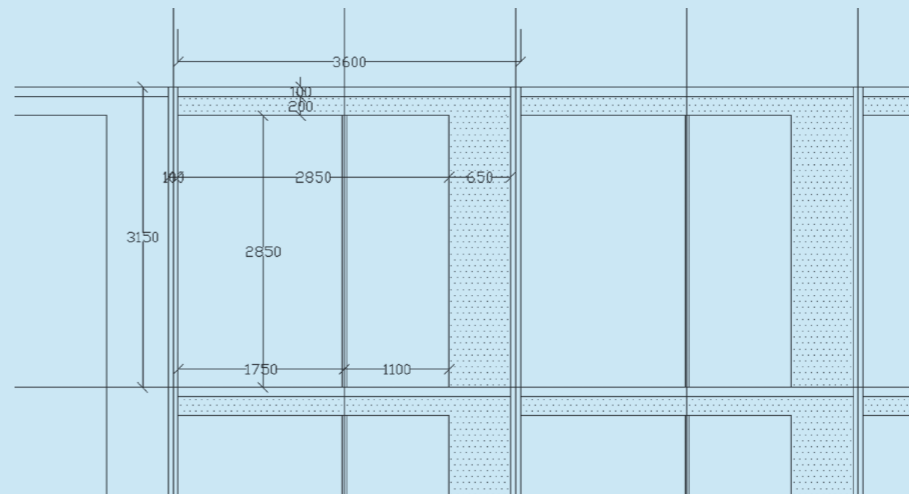
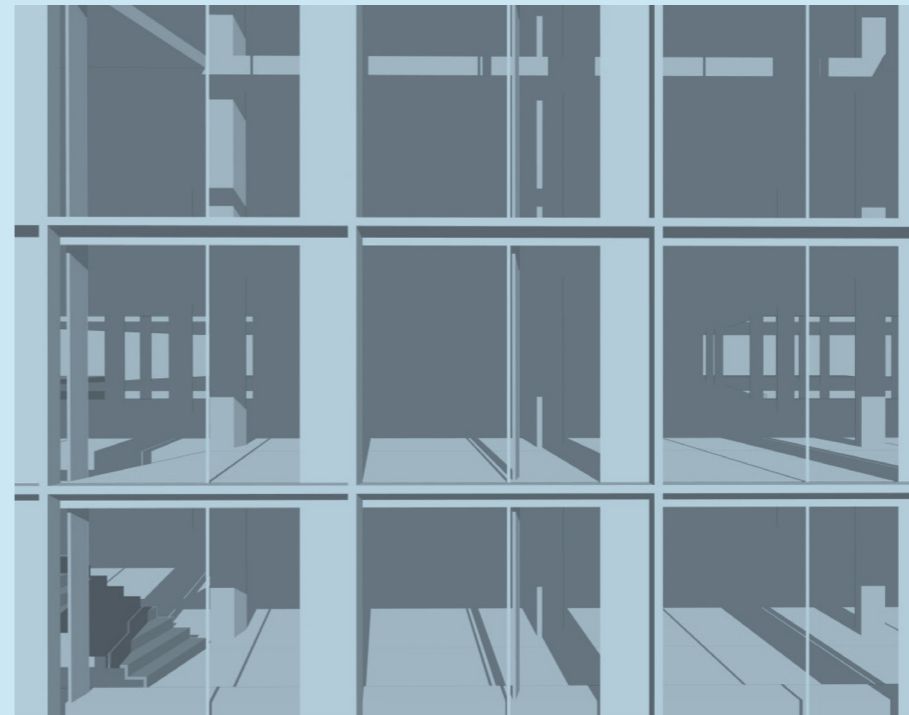


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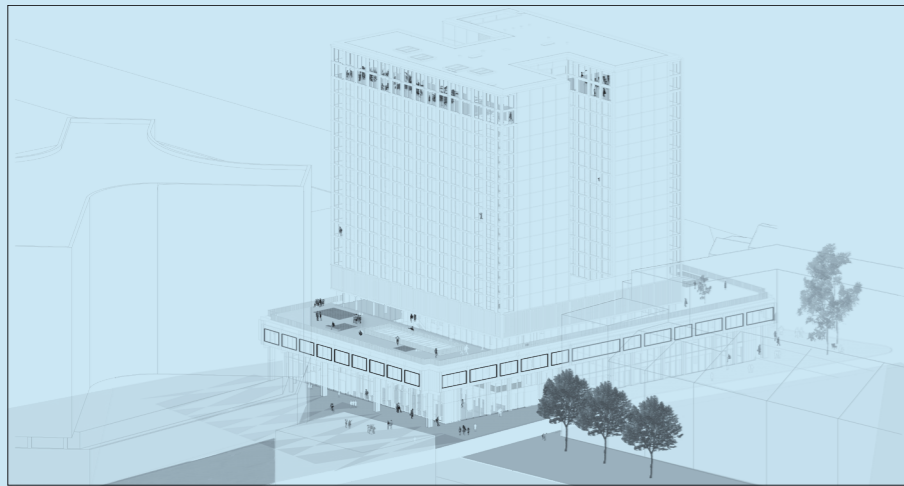
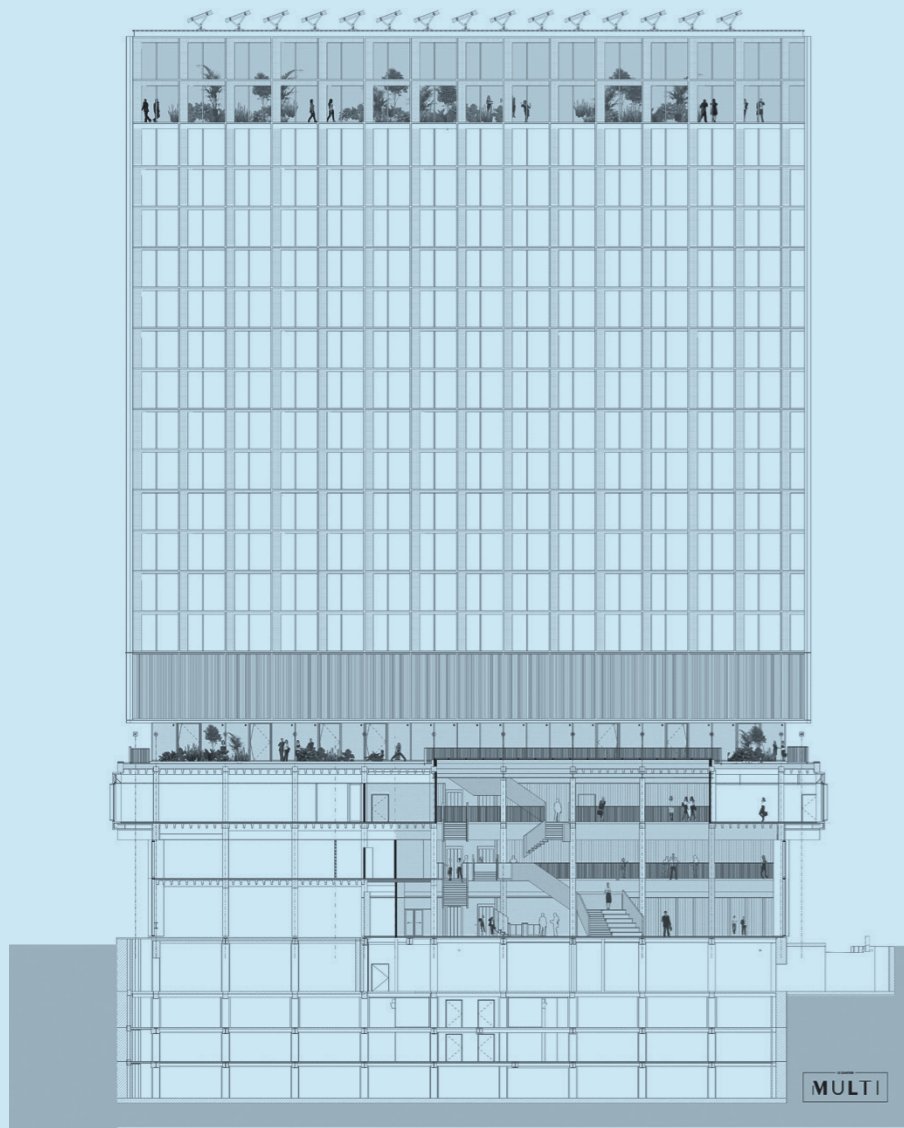
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- 5 providing a horizontal line to cover the construction
- 6 creating a square as transparent and glazed opening
- 7 providing a vertical profile in syncopation with the 540 cm structural grid
- 8 providing 75% overall transparency and 25% opaque façade surface to merge view, daylight and prevent overheating



AUTOCAD DRAWINGS

The design of the new façade aims at an increase of daylight entering the workspaces and benefit from the views. At the same time an expression of shadow and texture is obtained with the small protruding canopy and matte fine-grained opaque ceramic cladding.



SECTION
First synthesis drawing integrating the proposed façade, the urban platform, the top floor, winter garden and the new atrium.



A case of severe bruxellisation between two urban conditions

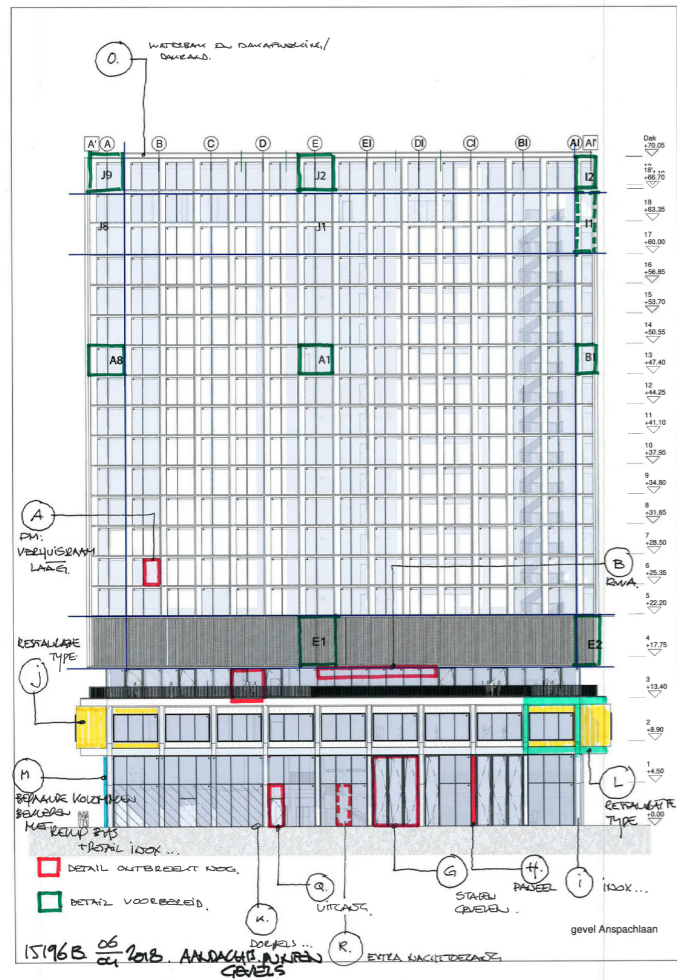
To approach the reconversion of this iconic 1966 office tower, an in-depth understanding of the original intentions, and how they were realised (or not), is paramount.

Because of speculative real-estate developments in the 1960s, the Philips tower is the exponent of 'Bruxellisation': the drastic modernisation of the urban fabric. In its current state, the Philips tower was a dissociation and discontinuity of the urban tissue. The tower was perceived as being out of proportion in relation to its surroundings. Because of its robustness, the mainly opaque façades, some in precious bluestone, the prominence of the parking entrances in the public space and the presence of a bus underpass, the Philips tower was not contributing to the quality of the public space. It was predominantly considered an urban accident, vilified even. The Philips tower forms a duo with the Munt building. Both designed by Groupes Structures. They both use the same volumetric vocabulary: a three-level plinth with a platform, an intermediate level and a tower seemingly floating above the plinth, clearly inspired by the Lever House designed by SOM (NY).

The Philips tower is situated between two types of city fabric. On the south side, it flanks the Boulevard Anspach and Boulevard Adolphe Max. This zone is one of the main shopping areas in Brussels. To the north side, the Philips tower faces the small grained district of Sainte-Catherine, a lively area with small restaurants, cafes and the remnants of the old port. The Philips flagship store and the headquarter lobby were originally on the Boulevard Anspach. The ground floor was open here and contained the entrances and retail spaces.

Toward the picturesque neighbourhood of Sainte-Catherine, the façade is closed, dark and uncommunicative (there's no interaction between the inside of the building and the public space surrounding it). The parking entrances eat into the public space on the ground floor, creating a discontinuity of the pavements. A bus route passes under the plinth and creates an extra barrier for an unobstructed use of the public space by pedestrians.

The building has an H-shaped tower of 16 levels on top of a storey plinth. There's a four-level underground car park. The edifice has a low floor-to-floor height, making the integration of contemporary techniques extremely difficult. The façades needed an update to address issues of daylight and energy efficiency. At the same time, the building offers extraordinary 360° views of the Brussels skyline.

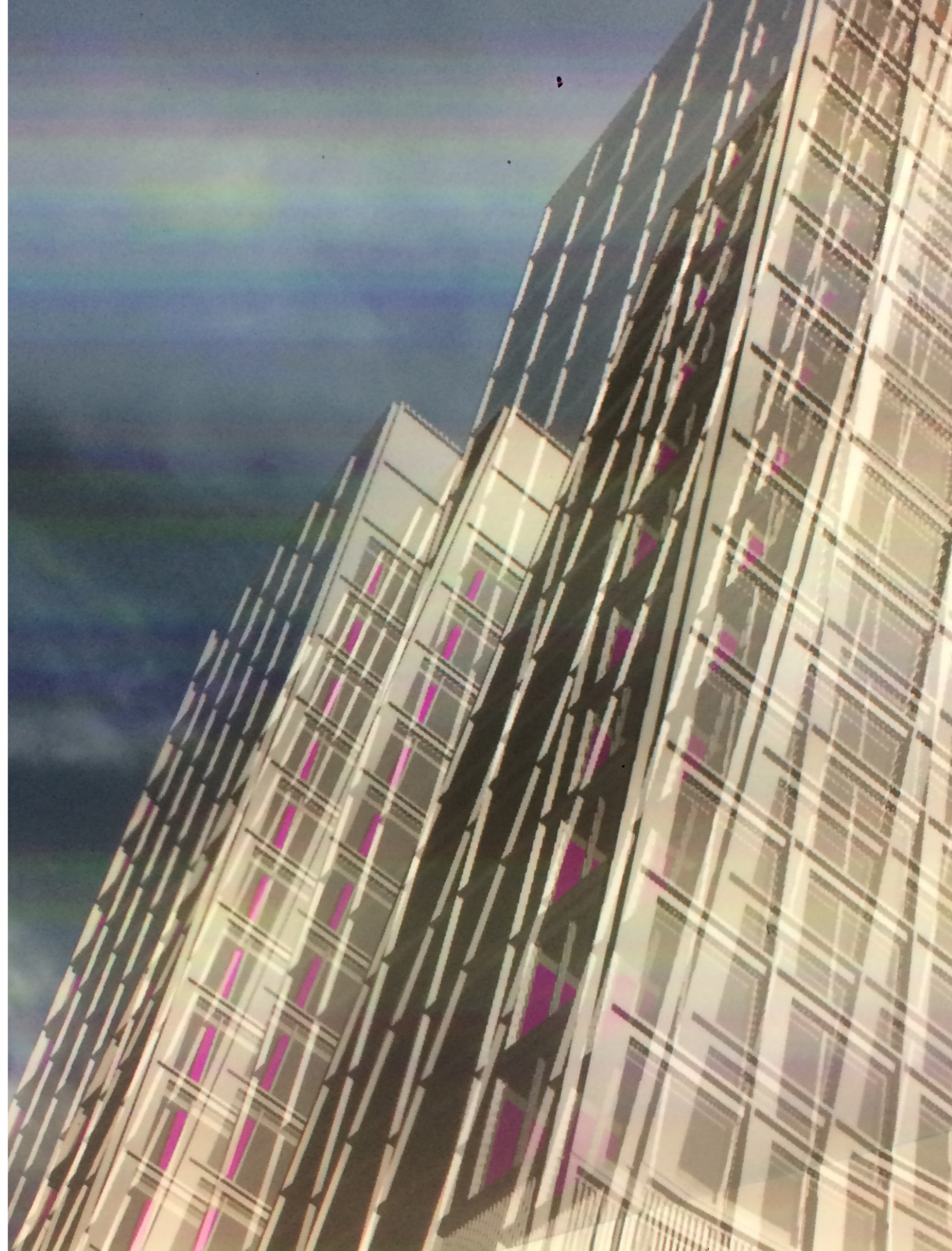


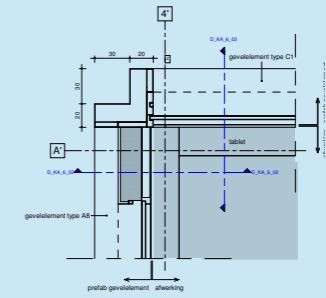
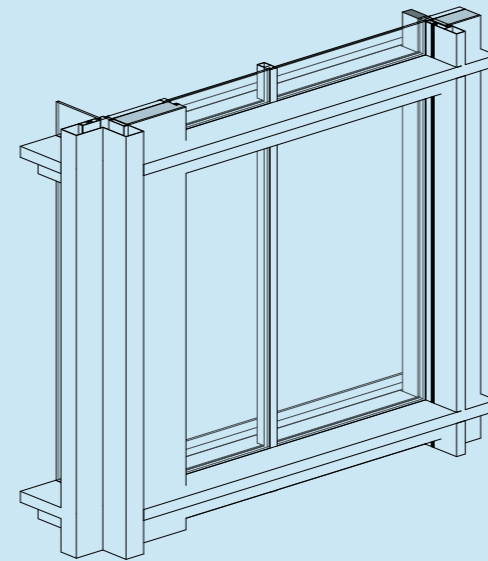
Atlas of unitised façade details: extract



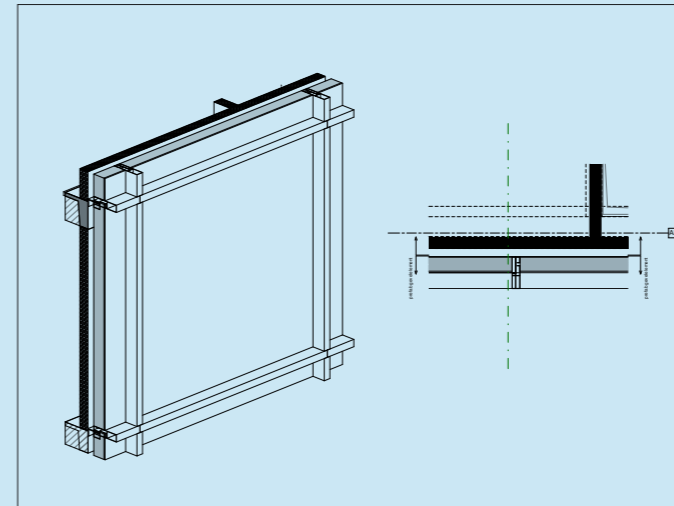
Scale 1: a mockup of the unitised façade

OPPOSITE: AVALON
Virtual reality mockup of the unitised façade.

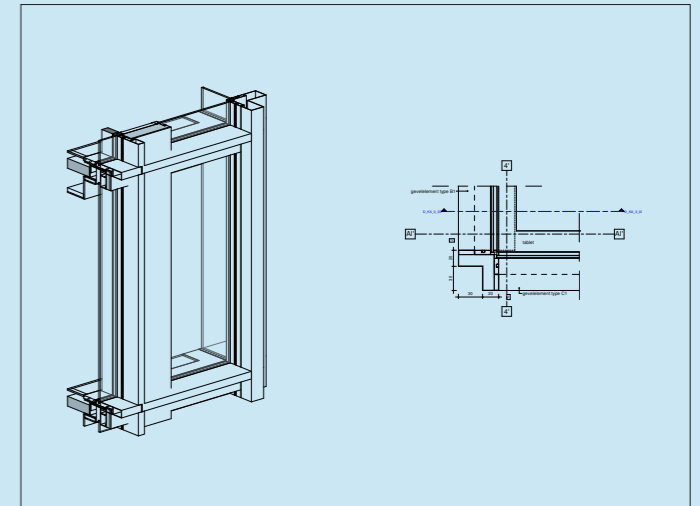




Zero element

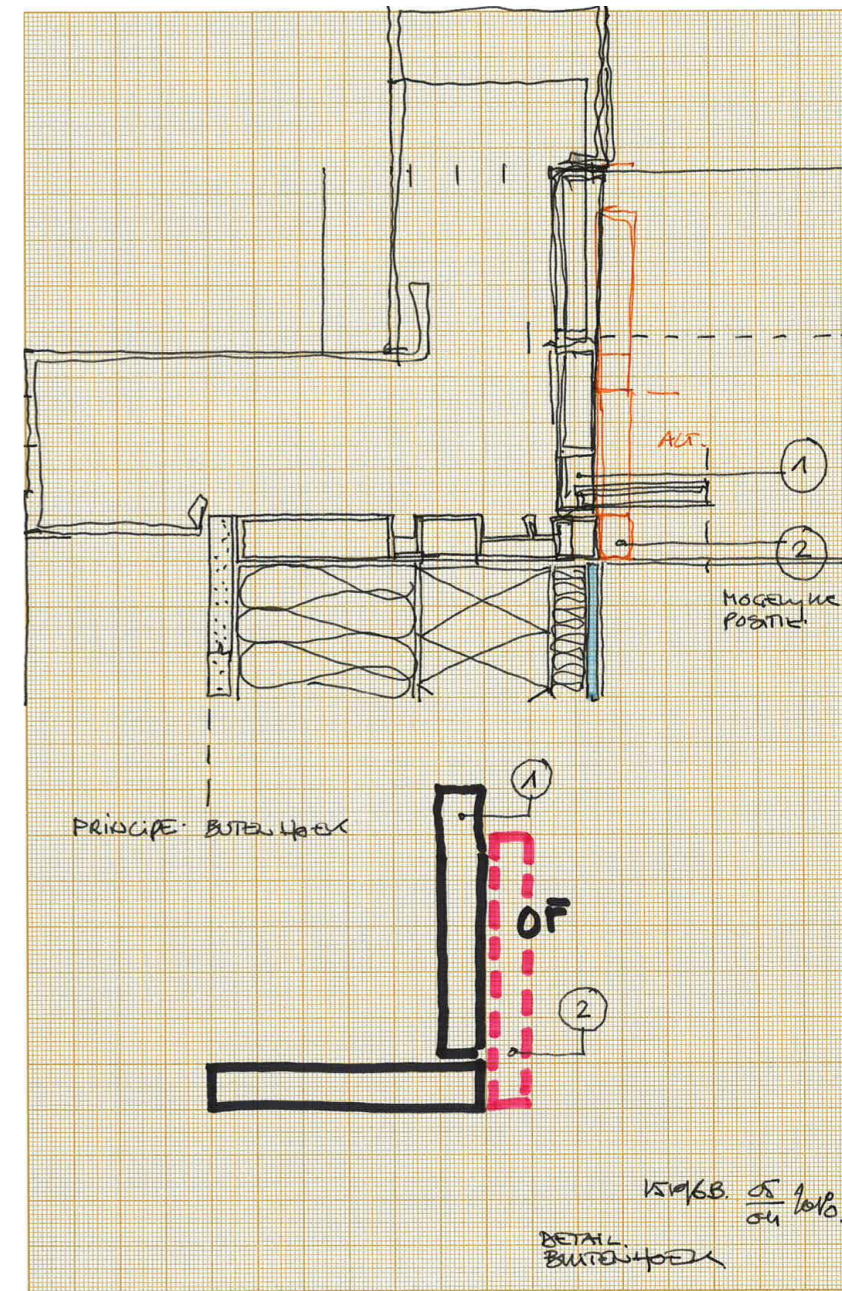
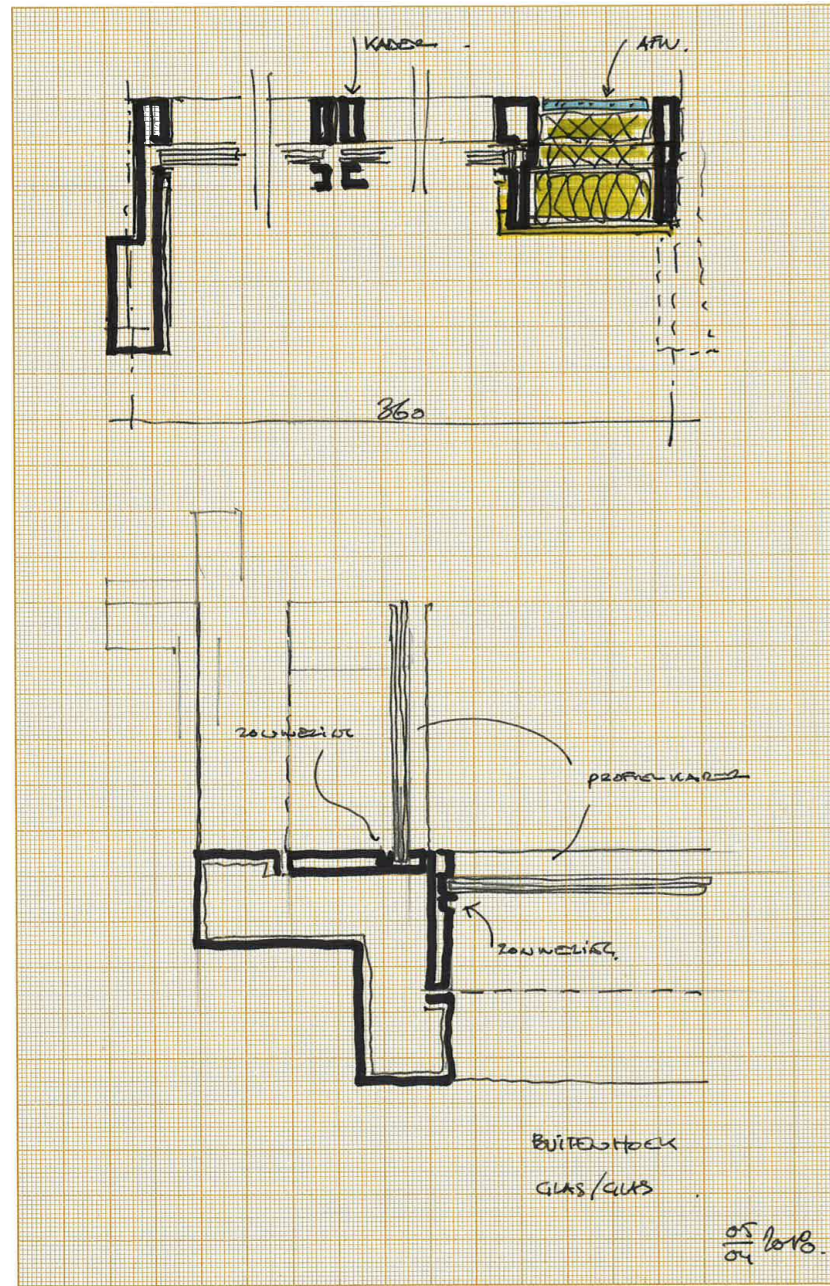


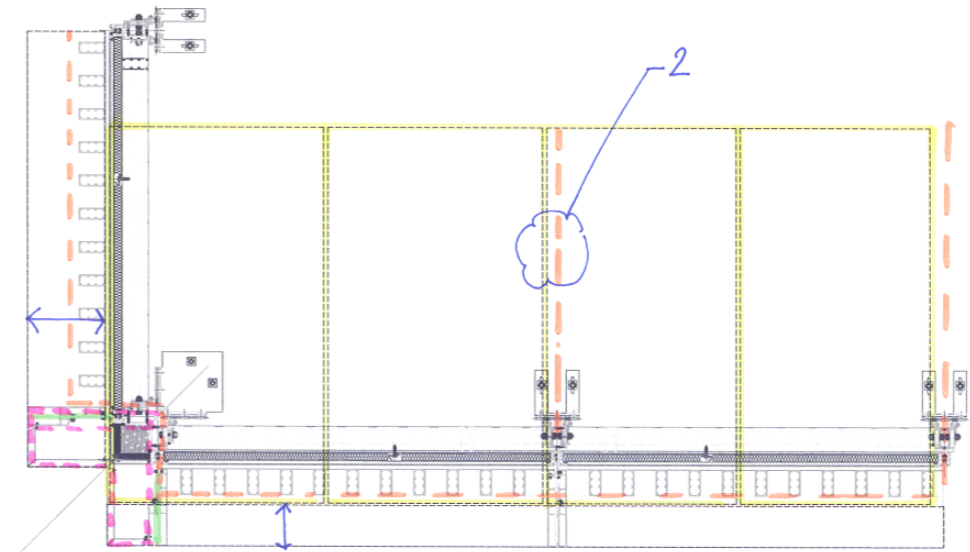
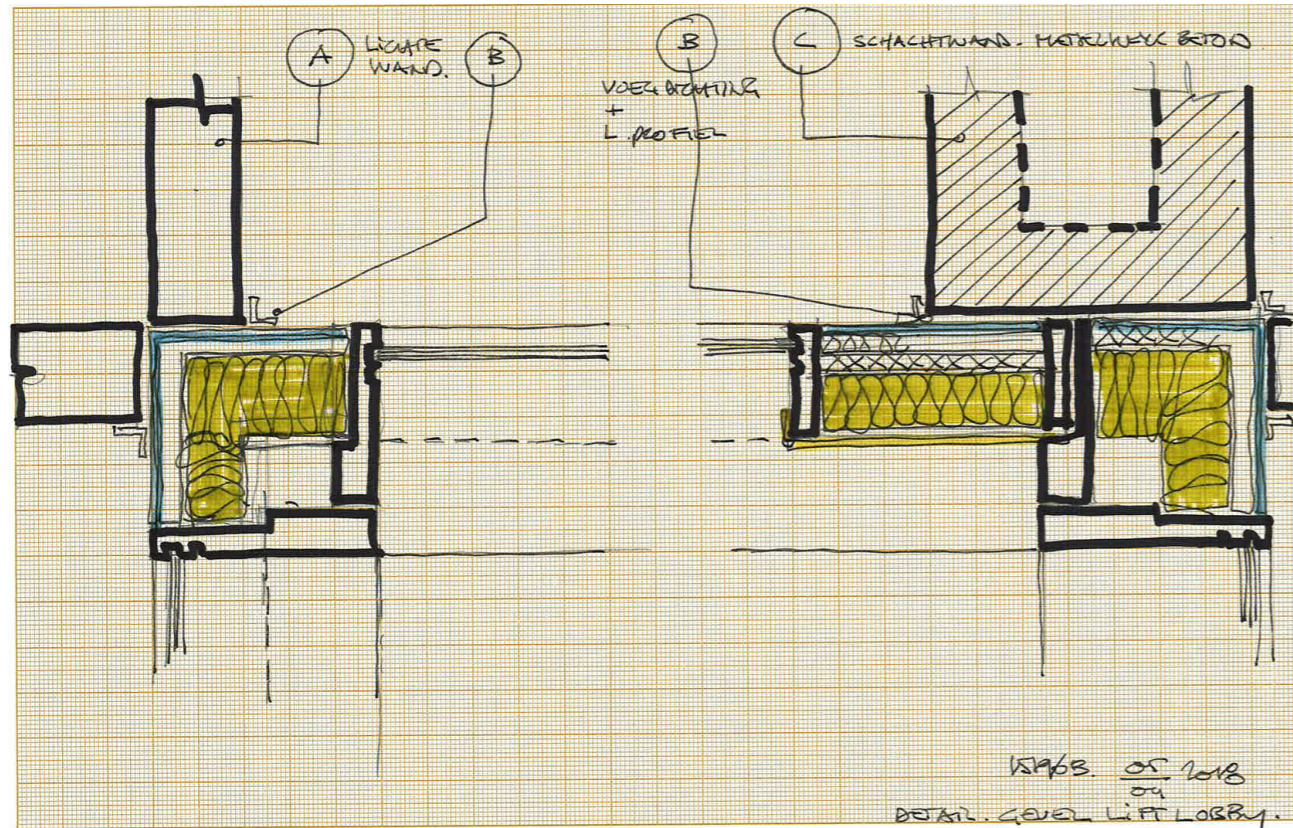
Variation 1



Variation 2

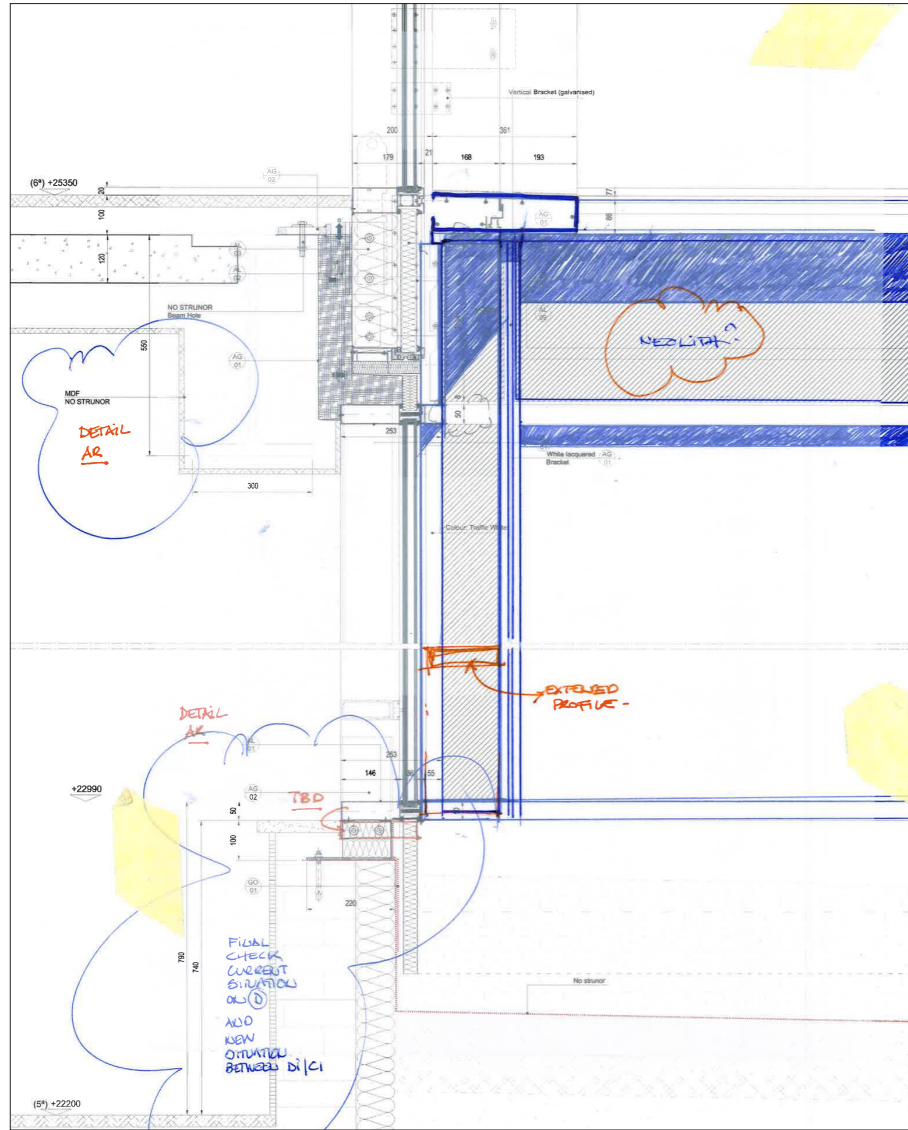
BIM MODEL
 Starting from the basic façade element called the zero element, the façade is composed out of variations on it.





STUDY SKETCH

Indicating and defining the joints on different façade elements of the 3D corner at the lower part of the tower.



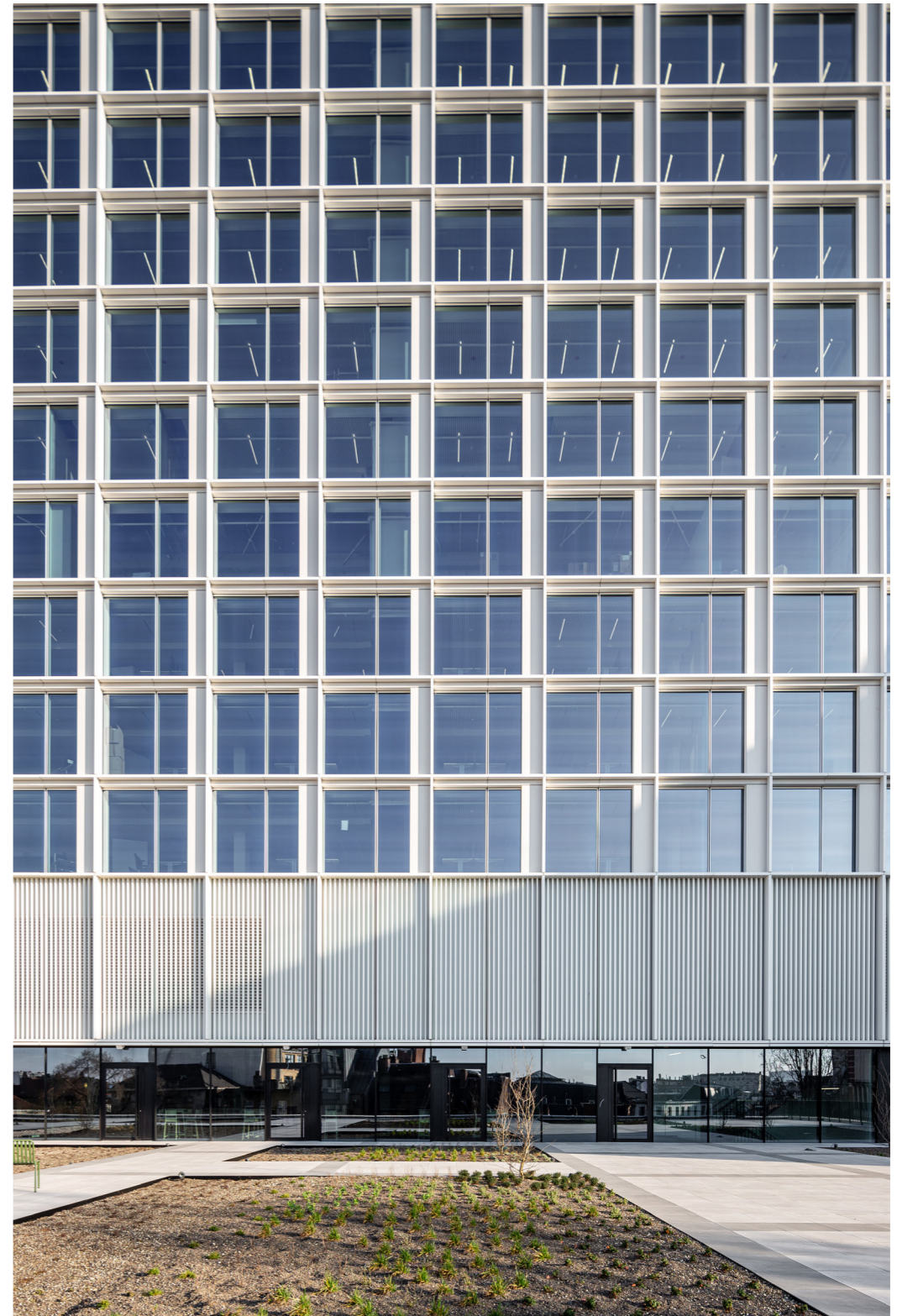
Study sketch: detailing the façade based on the shadow.













How ambitions can inspire other ambitions, a clients perspective

Valérie Vermandel (first author) and Gwen Vreven

In November 2015, Whitewood acquired the Philips tower, its first larger scale acquisition. This was Whitewood's way of highlighting its potential and ambition to the market.

We weren't, and still aren't, the largest or the oldest player in the office real-estate market and we would like to point out that this is not our core ambition.

We knew we couldn't compete in terms of pricing, which is why we chose to differentiate ourselves from other market players through characteristics that truly define us as a family business: open communication, an ambitious sustainable project (not just for PR reasons) and a clear choice for quality. A young and agile company, we knew we'd be able to incorporate new trends and products within our portfolio faster than the larger well-known parties on the market and we clearly aimed to follow that path. Being truly urban and sustainable were the ambitions for the former Philips tower, and we aimed to do that through open communication and innovation.

Before acquiring a building, in the due-diligence phase, we analysed the potential of a site both on building level (quality of the existing, transformability), on a legal level (What is possible here?) as on a market level (Does it respond to the current demand and at what price?). On a building level we will perform a first check on, among others, the structure, the floor-to-ceiling height, the efficiency of the floor plans, the contaminants and the state of the technical installation.

When we acquired MULTI, in a due-diligence phase, the first idea was an energetic and health-oriented renovation: we would remove the asbestos, insulate the building and change all the technical installations. In 2015, the future of the area was not yet well defined. Was it going to become a pedestrianised area or not? This renovation scenario was therefore a safe option: investing to create a better building, without taking the risk of larger adaptations.

As it became clear the area would be developed, we thought it was worth the risk to opt for a larger redevelopment and decided to commission a feasibility study from CONIX RDBM Architects and to open the discussion with the administration, to find out what their ambitions were.

The first step in this kind of project is: will we keep the structure or not? In the case of MULTI, it was clear from the start that the demolition of the existing structure was out of the question for the following reasons:

1. Although it is considered a scar in the inner centre by some, the former Philips tower represents part of the city's history, and therefore has a value when it comes to understand urbanism in the 1960s.
2. The building was well built. The structure could be renovated and the floor to ceiling height made it possible to implement new technical installations to respond to current regulations.
3. The demolition would represent nearly 10% of construction waste for the Brussels region and have a huge impact on the neighbourhood. We were not looking at the CO₂ impact as we do now for all our projects, but we considered at the time that reducing transport as well as the use of new materials could only be beneficial from a sustainable point of view as well as from a planning point of view.

From a cost perspective, it would probably have been cheaper to demolish it at the time, but we were convinced that from a planning, permit and commercial perspective it would be an advantage to choose the more sustainable option, i.e. combining ideology with a business plan.

The feasibility study conducted by CONIX RDBM Architects was crucial in our choice as it pointed out the importance of the building in Brussels' history as well as the feasibility to keep the structure and implement new qualitative functions that responded to current standards. One of the important elements was the quality of the concrete and the floor-to-ceiling height that could be guaranteed. We were also charmed by the options that were presented to have an impact on the neighbourhood, in particular the integration of the parking entrances within the building to enlarge the pedestrianised area, moving the buses (going under the building at the time) resulting in a new square as well as the use of the terraces for collective and public functions, thus opening the building to the neighbourhood. It was inspiring, but the main questions remained: will this be feasible? It was like a Tetris game, every party had to move forward together to achieve the result that is visible today.

After the feasibility study the following moments were very important:

- Meeting with the city of Brussels that indicated that the pedestrianised area would become a reality and getting the approval internally to take that gamble and create the project in that philosophy.
- Meeting with the BMA and concluding that if we were able to improve the public area (moving the buses, integrating the parking entrances), it wouldn't be a problem to widen the building and implement the techniques and stairs in the extension. This was crucial to us, as it was necessary to guarantee the floor-to-ceiling height and to be able to finance the large interventions on the ground floor.
- Meeting with the cabinet of Pascal Smet, Minister of Mobility at the time, and the STIB about moving the passage of the buses from under the building to behind the building.
- Reaching an agreement with Interparking, after which they approved the integration of the parking entrance and exit in the building. This combined with the move of the STIB, made it possible to create a new urban square on the Rue de Laeken.

- Introduction to Rotor, a young company specialised in Urban Mining that would help us integrate this new flow of materials within the building. The first inventory of our own building and the presentation of what was available on the market was an eye opener.

It's important to understand that the valuation of a commercial building, from an investment point of view, is not directly related to the choice of materials, but that it is related to the cash flow that it generates, in common terms: what is the expected yearly rent generated by the building today and for the years to come? Divide this by a yield and you get a rough estimate of the value of the building. Why then choose a clear goal related to materials coming from urban mining? For two reasons. Firstly, we were convinced that this path represented the future but the market at that time was not ready for it, and to tell the truth neither were we. Putting an ambition on urban mining was a way for us to give the project team room to innovate and see what the actual boundaries were today and how we could integrate this within our projects in the future. Secondly, by being a pioneer we were defining ourselves on the market as a new and young developer. We were convinced that by creating a more sustainable building, we could also attract potential tenants and buyers and that the risk and cost related to the integration of these materials, would give us a commercial advantage at the end. Today, the market is still not ready, but we're convinced that by consequently implementing a reuse ambition and learning from these experiences will make it possible to change the way we look at construction. We're also very glad that our partner Immobel, who acquired 50% of the shares of the project in 2020, shares the same ideology and helped us to achieve the goal for MULTI and set even more ambitious goals for our other joint-venture project.

We learned a lot about reuse during the MULTI project and we're not ashamed to say that not everything went according to plan. The investment made by Whitewood and Immobel, to obtain these new insights, will benefit our new projects in the future. If we must give three takeaways this would be them.

- One of the aspects is the financing of building elements. As the market is not yet mature, as developers we were faced with the problem of 'securing' materials even before a building permit was issued. In this case we took a risk for some very valuable batches, but we were limited and had to hope that other batches wouldn't be sold by the time we would build.
- A second aspect is related to logistics. Dismantling a building is fine, keeping materials is great, but where to store them temporarily? Taking time to analyse this in detail before tendering and describing it very specifically in the tender file is very important to avoid high costs and multiple moves during the duration of the construction. We think that the public authorities could really have an added value here, as for now storage is very limited in Brussels and we were obliged to move several batches out of town.

- The importance of guarantees, and their description within the tender files. When asking a contractor to propose materials within a tender file, what we expect as guarantees should be clear to avoid endless discussions.

Regarding the question, 'When will you decide whether to go for a specific reused material?' I think the best answer is to look at the risk factor. As investors, we will always ask ourselves: how bad is it if it goes wrong and what are the odds that it will go wrong? Choosing materials such as bluestone pavers is therefore less risky than to reuse structural elements from external sites.

For us, MULTI is a true example of teamwork, with the public authorities, private owners as well as our amazing project team and contractors. It's important to state that from the start we tried to understand the needs of all parties and tried to find a win-win situation for everyone involved. Being open and honest, combining public ambitions and business plan realities, is the path to follow for us. Even in the project itself the ambitions changed and evolved through time, always putting them a little higher. The evolution related to carbon neutrality is a great example of showing how ambitions can inspire other ambitions.

Indeed, when we started the project, the importance of carbon neutrality was not as great as it is today and was mainly considered from an operational point of view. Nevertheless, in 2017, engineering company CES conducted a first analysis of the feasibility for a geothermic installation as well as an alternative with heat pumps on the roof. A geothermal installation was not feasible, as we have an existing car park that would otherwise turn into a pool, the heat pumps were possible, however. At that time, we chose not to go for that option, as our former tenant was more interested in more space than in carbon footprint.

It's only when our partner Immobel joined us around the table in 2020 - Brouckère Tower Invest - that the (operational) carbon footprint of the building was back on the table.

In addition to the aim to create an exemplary circular (re) development project at the beginning of 2021, Immobel expressed its additional ambition for MULTI to become the first climate-neutral office building in use in the Brussels Office Market, fully in line with the EU's ambitions to become climate neutral by 2050. Compared to 2017, the market had evolved and there was a clear demand for carbon-neutral projects. Therefore, the heat-pump plans of 2017 were picked up again and with our technical partners on the team, CES and SWECO, we analysed if it was still possible to adapt the project and reach this new goal. Even if it was challenging, we decided in mid-construction to change the production techniques and we're grateful for the willingness of all parties involved, as again teamwork made this ambition possible. At the same moment, and also partially due to a lowering of the carbon footprint, Immobel attracted TOTAL Energies to lease 18,000 m² of office space in the building, sharing the same values.

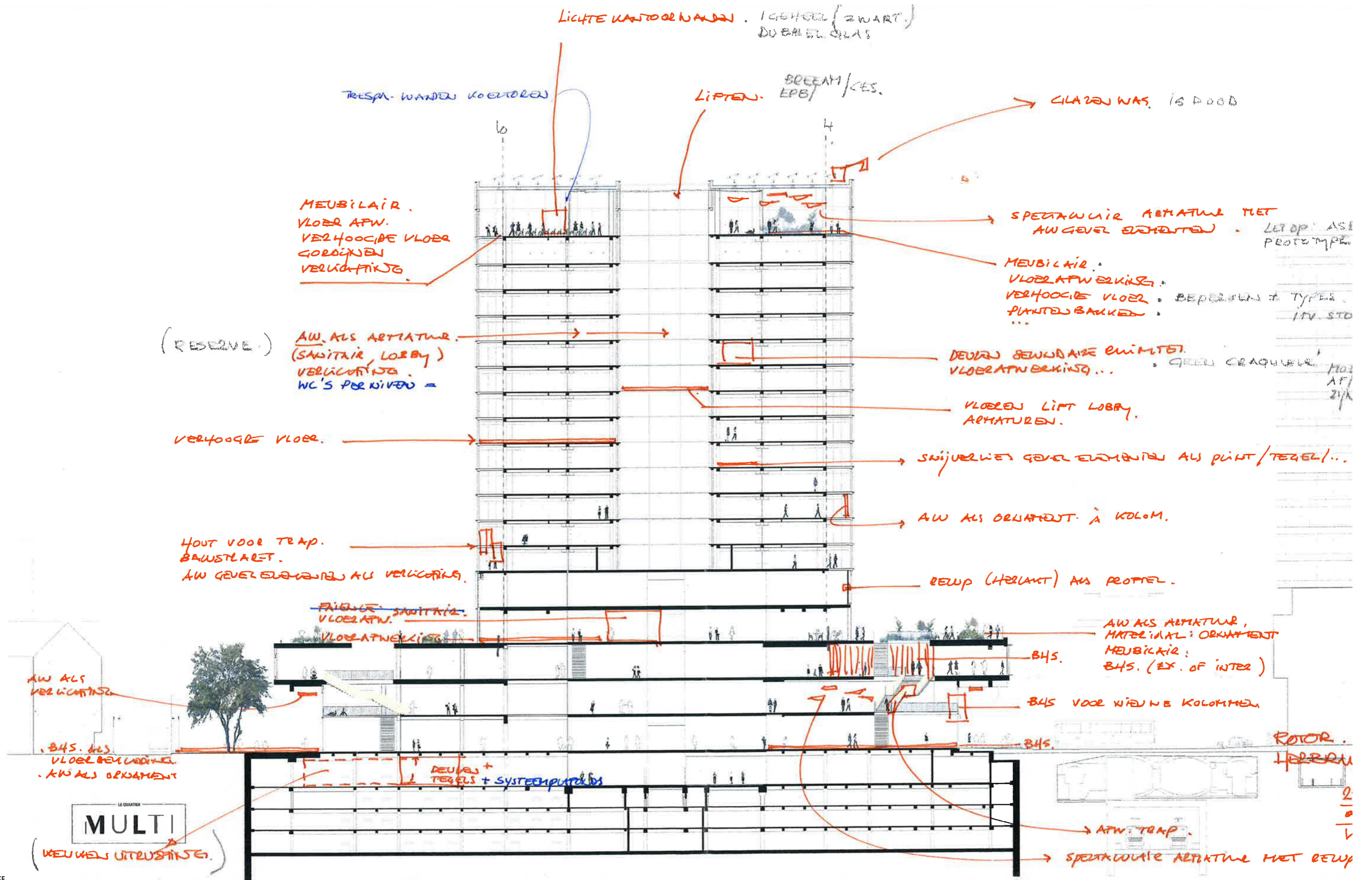
After an in-depth analysis of the existing technical installations, the decision was made to install 4 additional heat pumps on MULTI's roof (level +19). In combination with the existing solar roof panels and green electricity, this resulted in the CO₂ neutral solution.

Architecturally the double-high level +18 was split into 2 levels to create an additional floor plate at level +19 to install the heat pumps. The exterior façade towards the Fishmarket (Rue de Laeken) was redrawn from a closed to a more open façade to optimise the ventilation for the technical installations.

The change in turning MULTI into the first fossil-free building in use in the Brussels Office Market, makes it a reference point for future projects and challenges the debate to preserve, optimise and reuse, where physically possible, our existing buildings as opposed to demolishing them.

MULTI will benefit from a lower energy consumption due to its high-performance technical installations. Although in new projects clear carbon goals are stated, this was initially not the case for MULTI. Nevertheless, thanks to the choice of keeping the structure and implementing urban mining, the impact of the project was limited to 231kgCO₂eq/m² or a yearly impact of 3,85kgCO₂eq/m² year over 60 years categorising the building as an A-grade in the carbon heroes benchmark. From an ESG-perspective, due to its lowered impact on climate, awareness of added value in reuse and scarcity in material supply, MULTI sets an example for the next-generation projects to come, not only in terms of environmental or social benefit, but also increasingly as an economic benefit for investors in a diversified and greener portfolio (ESG).

Is MULTI the best project on earth? Certainly not, but we truly believe it was a step in the right direction, finding a balance between feasibilities and ambitions. It was a first step, setting a clear ambition on urban mining for the first time, and we hope that we were able to inspire and that new projects with higher ambitions will soon arise. It is not an end, it is an evolution.





STORAGE

The process of reclaiming materials from the site demanded to 'refresh' knowledge on how to demount carefully (using sand as a go-between...) and safely storing in limbo before installing again in situ.

Public debate and public interior as a condition for exchange and the project as civic edifice

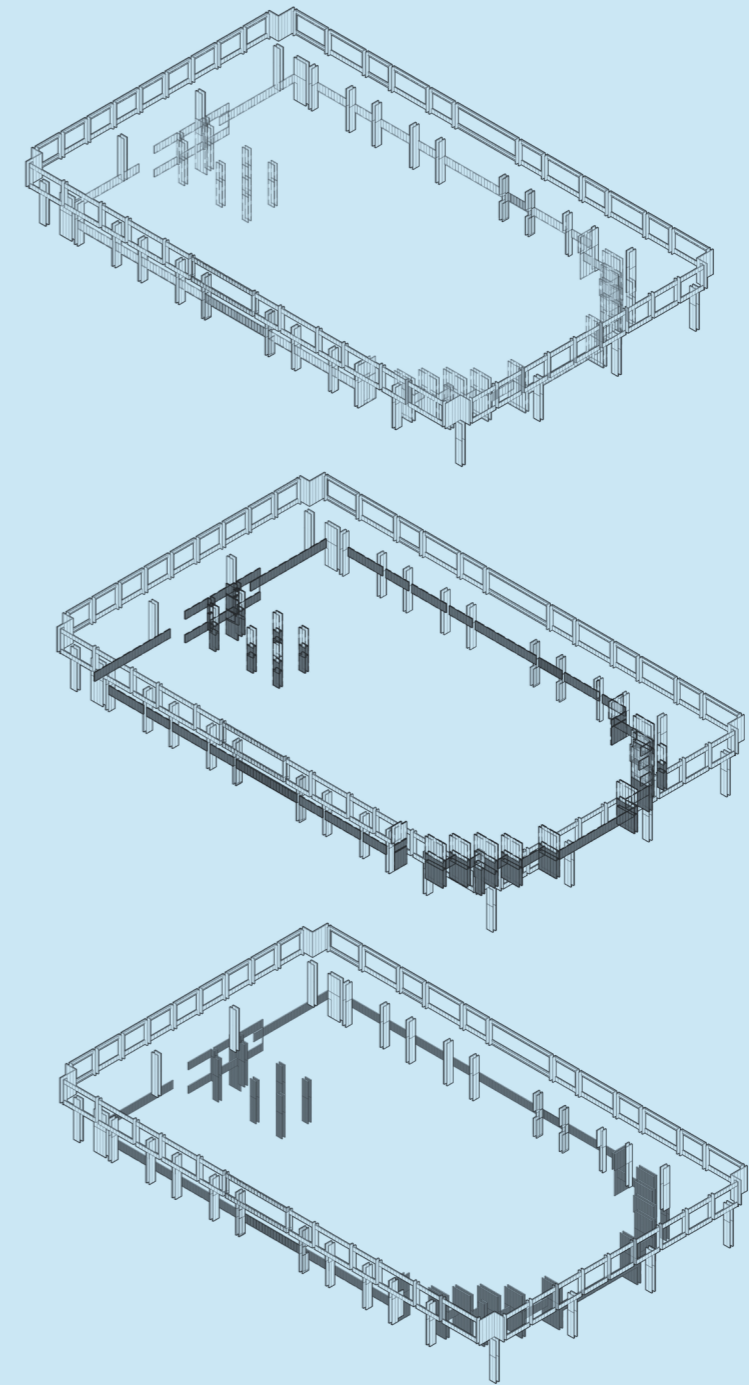
The most important design decision is the fact of working with the existing building instead of demolishing it. Not having to demolish first means a shorter timeframe and moves the revenue forward. Secondly, the demolition would bring with it a lot of mobility issues, not to mention waste. But above all, this 1966 brutalist/modernist construction has some great qualities. This means that the proposal is not one of pure conservation but is based on an integration of existing valuable elements and quality materials. Most of all, it started from an understanding of, and work within, the framework of the original intentions of the project!

When dealing with an emblematic, iconic 'urban accident', every intervention demands a thoughtful approach. The goal was to conjoin the project within the urban condition. Working with the existing building was the first step. A second was to bring the design process within the public realm and create a public debate based on transparency. To conduct this dialectic design process in public, this open communication, only physical architectural artefacts were presented on a large table during meetings and stakeholder interactions. This enabled everybody to bring their concerns and suggestions 'to the table'. Someone could even change things and say, 'turn the table'... But above all it meant that all the stakeholders are 'together at the table'.

The development of the project during the design phase was placed in the public debate in collaboration with architect Kristiaan Borret and other municipal and regional administrations. The idea of exchange is key to our understanding of the urban condition. Exchange in the form of knowledge, money, goods, diseases, ideas; but more importantly exchange of space: interior and exterior, open spaces, private and collective spaces, interstitial spaces. If we want exchange to happen, there needs to be an interface, an overlap.

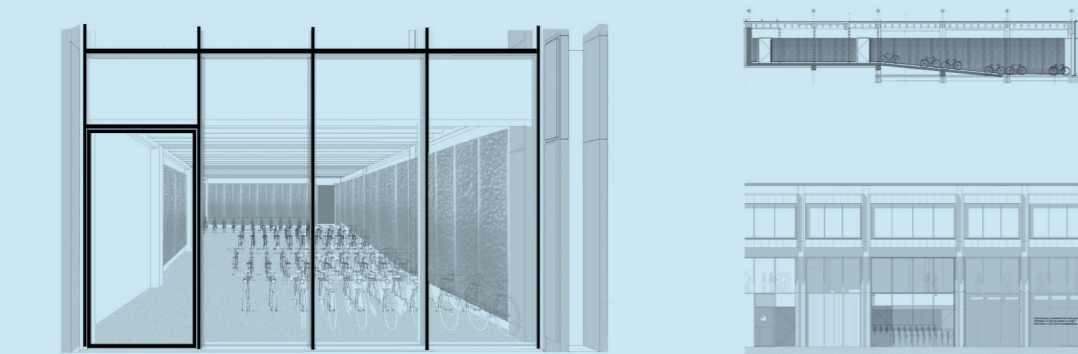
This reconversion facilitates and enhances this idea of urban exchange with an emphasis on the public interior, striving to make it a 'civic' edifice. The interventions convert the existing urban obstruction into an urban space exchanger.

As the Philips tower is situated between two distinct urban neighbourhoods of different morphology and scale, it has the potential of acting as an intermediary, a facilitator. The design tries to realise that potential and transform the currently closed and dissociated project into 'an urban space exchanger' and an urban platform. To overcome the risk of becoming a self-effacing intermediary, the project's interior is developed as a continuation of the public space.



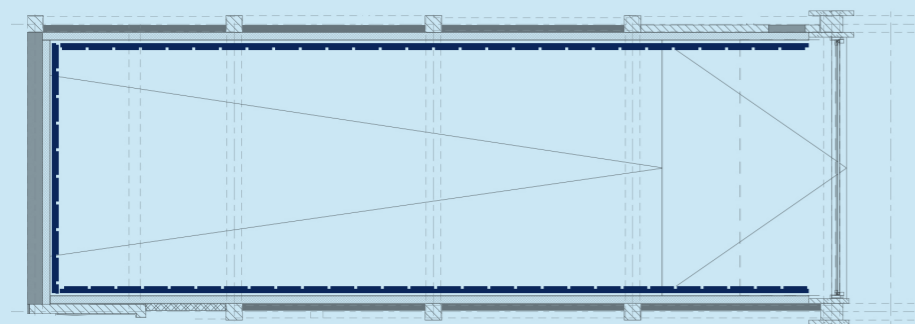
BIM MODEL

Documenting the position, dimensions and quantity of the existing bluestone slabs. Dark coloured elements indicate those to be reclaimed.

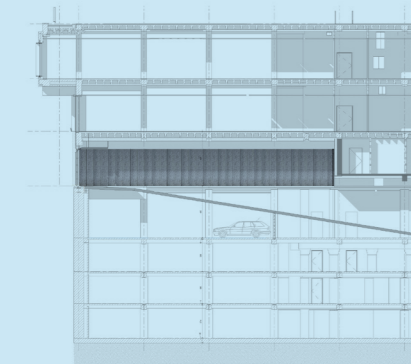


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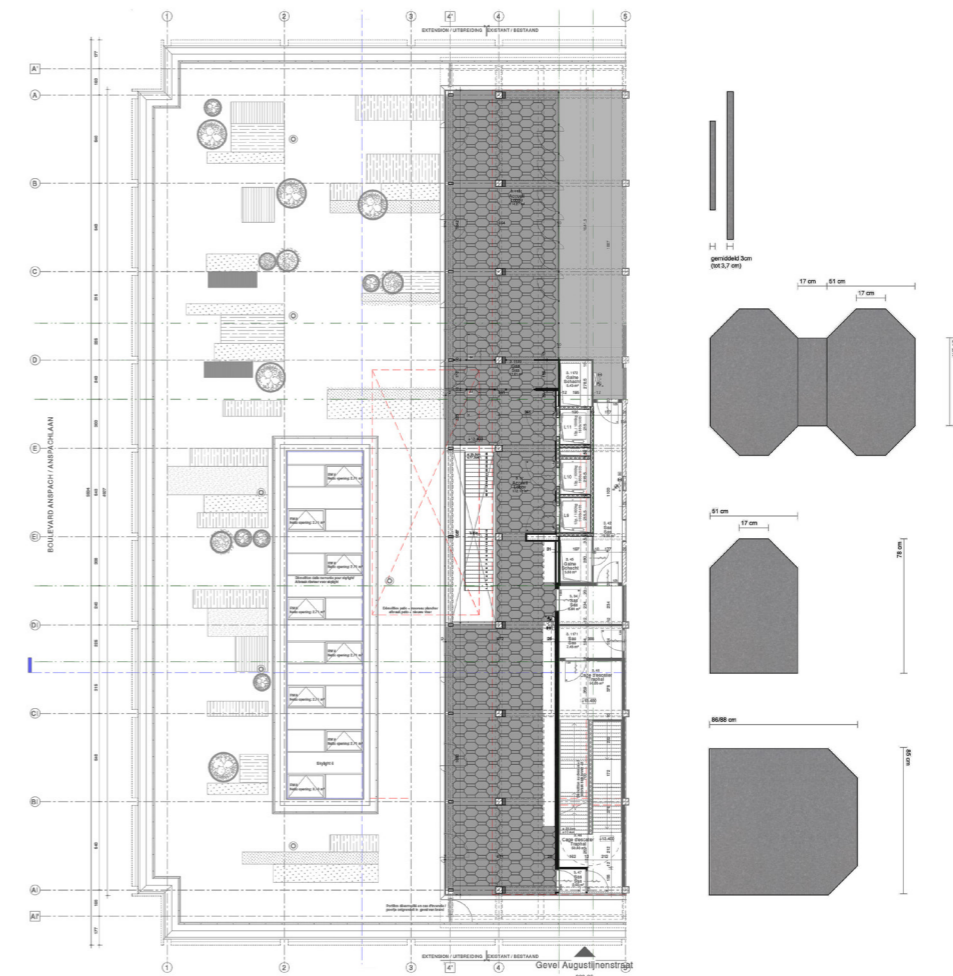
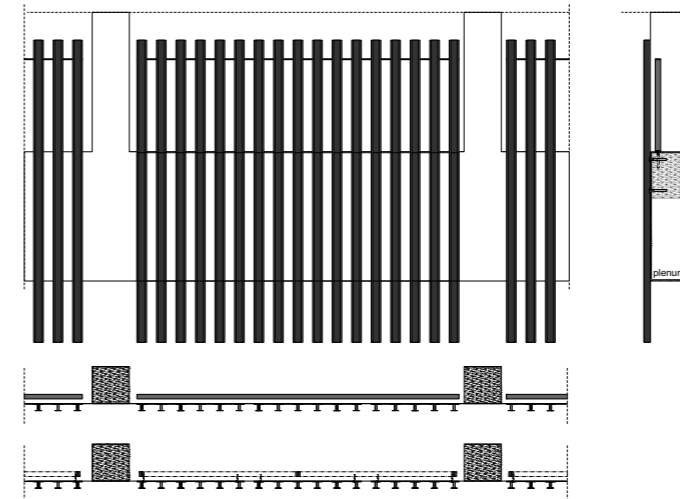
- 1 perspective
- 2 façade
- 3 plan
- 4 section

Bluestone cladding for the interior walls of the bicycle parking

STUDIES FOR REUSING BLUESTONE CLADDING

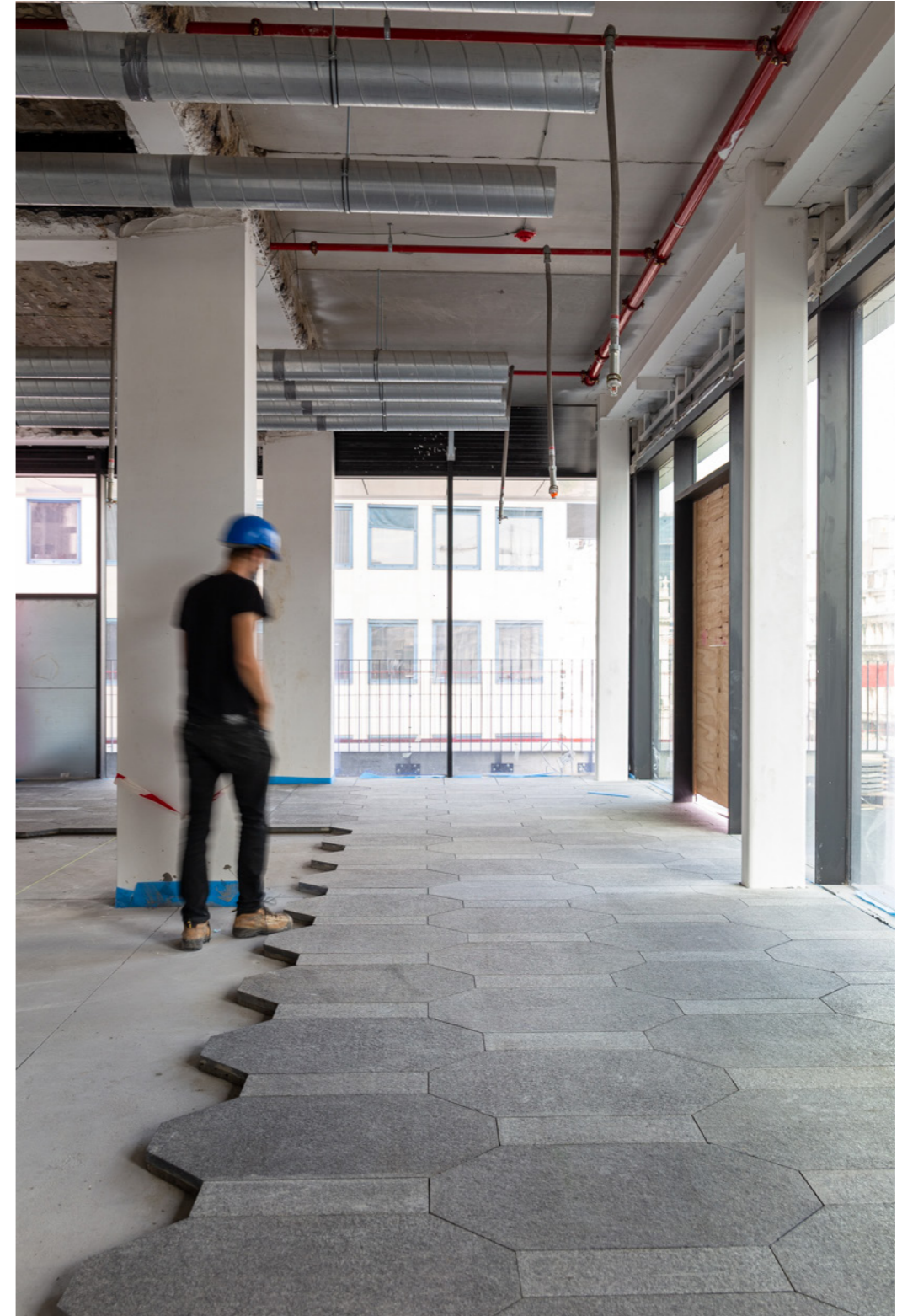
Following the atlas of reuse, different alternatives for reusing the reclaimed bluestone are explored.





REUSING ALUMINIUM AND NATURAL STONE
 Some 500 aluminium façade profiles from the Philips tower have been repurposed into lighting fixtures and balustrades. The natural stone flooring as part of the third floor has been reclaimed from a demolished office building. This original floor was designed by Jules Wabbes.





Reuse in the MULTI project quantity and quality – two goals

Arne Vande Capelle and Lionel Billiet

The story of reuse in the MULTI project is a multi-layered one. For Rotor, it was one of our first large-scale design consultancy assignments. In this type of mission, we provide input on how reclaimed elements can be integrated in contemporary construction projects—an area in which the reuse tradition is long gone. It was clear from the beginning that the redevelopment of De Brouckère tower was going to be a real challenge in that regard, finding itself at the high-end spectrum of contemporary redevelopments. But we were excited to mediate between the existing reclamation sector¹ with its constraints on one hand and the contemporary high-end construction practice with its many formalised and highly codified protocols and processes on the other.

Reuse was and still is poorly covered by most sustainability certification schemes like BREEAM, so our involvement was kicked off by defining a ‘reuse goal’ to give us a guiding target throughout the project.

As the integration of reclaimed elements into projects poses the biggest challenge, we decided to focus our attention on this. From all the elements that were to be integrated in the project, 2% (measured in weight or value) had to have had a former life.² This might seem like a small amount, but as reuse is a practice long lost in construction projects like this one, it is in fact, quite ambitious.

Apart from the quantitative goal, there was the additional intention to actively develop an appreciation for the original tower, and redevelop it in a way that makes sense architecturally and culturally. If a modernist building in Brussels is lucky enough not to be destroyed but redeveloped, it receives a complete makeover, almost without exception. The renovations of the Astro, Midi or Finance towers, for example, all attempted to erase as much of their original modernist features as possible in order to have the building merge into the background of the city. This is not only unconvincing as a sustainability strategy, but it also means making the same mistake as the post-war modernists: not recognising the qualities of what already exists.

The MULTI project did not want to repeat this mistake, but instead to reconcile Brussels with this part of its history.

Reuse during the design phase

This attitude of ‘reconciliation’ proved to be an excellent way to initiate tangible reflections on the project. A visit to the Philips company archives in Eindhoven revealed some stunning pictures and drawings of the original tower. The terrace on the plinth used to have a pink stone floor; the entrance hall used to be twice the height, have a stone floor in a beautiful pattern, and be illuminated by an absolutely magnificent piece of lighting consisting of 4500 light bulbs; and the office floors were an early version

of today’s landscape offices, complete with a beautiful colour scheme, conviviality, plants, and an enviable view over Brussels. Integrating reclaimed post-war modernist materials would be of great help in bringing back the grandeur of the original project. It also proved to be an efficient framework within which other, more anonymous materials could also be quickly taken into account.

In the first phase of the project, this translated into a pretty efficient protocol. During 2018, once every two or three weeks, Rotor presented examples of reclaimed materials to CONIX RDBM Architects and Whitewood (Immobel joined later as co-developer).

These might have been actual batches of material available in Rotor DC’s stock or network, general types of materials that we know are commonly available on the reclamation market, unique products that we encountered while visiting reclamation dealers, materials present in the tower (as one of our first assignments was to make an inventory to assess the reuse potential of the elements on-site), or any other opportunity we encountered. When the team confirmed its interest in a specific batch, we would conduct additional research, all the while continuing to scout for other options. Being involved early in the design stage meant we could dedicate the necessary time to this.

This resulted in a list of around fifteen candidates for reuse in the project. The aluminium H-profiles from the façade of the tower and some of the immense blocks of blue limestone from the façade of the plinth would be reused in situ, as well as generic materials like the suspended ceilings, and more specific elements like the elevator engines. Rotor DC would supply a flamed-granite floor designed by Jules Wabbes that was dismantled at the General Bank, hexagonal acoustical ceiling panels from the De Ligne building, and fire-safety doors. We also found a batch of blue limestone flooring slabs at Maris Natuursteen. Furthermore, we identified other elements as potential candidates for being integrated in the project, such as raised floor tiles, glued-laminated timber, wooden indoor and outdoor flooring, and sanitary appliances that could be collected at a later date by Rotor DC or the contractor.

Towards the end of this first step in the process, our research was presented in a small exhibition in the tower. We displayed all of the material samples that we had collected. In some cases, samples on which the first treatment and colouring tests had been done. It is interesting to note that one of the main barriers for reuse at that stage was the aesthetical choice for a fairly restrained colour palette, consisting of black, white and grey. This kind of framework is logical when working with new materials because it allows a project team to find its way amongst the endless options for new construction materials that are presented by the industry. Applied to reclaimed materials, however, it further limits an already limited array of options. Here it meant, for example, that the option of the wooden indoor flooring was cancelled when the aesthetic demands (colouring the wood black) and the technical ones (the floor had to be very wear-resistant) appeared to be very difficult to combine.

But overall, the selection of materials at this point in the process was pretty diverse and robust, combining batches of materials from all the different reuse channels described above.

Reuse during the execution phase

After the design phase, our proposals were integrated into the general specifications of the project, and passed on to the contractor, Cordeel Group. Many of the reuse specifications were left relatively open because the collaboration was envisioned as a ‘Bouwteam’. The transition to the execution phase was not an easy shift. During the design phase, we always met with the same people from CONIX RDBM Architects and Whitewood, our interventions were framed very clearly, and for the duration of those meetings, everybody was willing to accept the constraints of reuse and see how the project could be adapted in function of reclaimed elements instead of the other way around. But at the start of the execution phase, it wasn’t very clear as to who should take ownership over the previously made decisions and take the initiative to develop further options. Along with the much slower pace of the construction phase, this meant that reuse was divided into a set of separated elements, and that for the rest of the project, Rotor’s involvement became much more punctual. Also, many more people were involved in this stage of the process, and quite a lot of them had not been properly introduced to reuse and the constraints it implies.

At some point during the execution phase, it was decided that reclaimed materials shouldn’t cost more than their new equivalents, or that the additional cost was to be in proportion to their added architectural value. At first glance, this looks like a fair instruction given the market segment in which the MULTI tower positions itself. But it also implied that each choice made during the design phase would be competing with new products from now on. And not only is most reuse today certainly not cheap, just finding out the exact price for the supply and installation of a reclaimed element already involves a significant amount of work. You have to find the people willing to install the materials, propose variations to certain common execution details, put a price on the possible preparation that is needed before the materials can be installed (cutting, sawing, colouring, etc.) and so on. This makes reclaimed solutions much more fragile in contrast with ‘standard’ solutions, for which a quote is much easier to get. Especially because there is very little space for this kind of budgetary uncertainty in the contemporary relationship between contractors and their clients.

Successes and stumbling blocks

Reuse in situ

Nevertheless, the integration of most of the in situ reclaimed materials went very smoothly. The idea to reuse the elevator engines on-site (one floor was added to the building, so they had to be dismantled and placed one floor up) was passed on to the respective engineers and installers, who integrated it into their normal workflow. The aluminium profiles that were dismantled from the tower’s façade were anodised in black and installed as lighting fixtures and balustrades in the atrium. The project team had always been fond of these materials as their presence on the original façade had no other function than expressing an idea of verticality and the modernity of the tower.

But maybe the most impressive case of same-site reuse were the blue limestone slabs that were dismantled and reinstalled on the reshaped rear façade of the plinth. Because of the uncertainty about the original fixing method, this process involved preliminary research done by the demolition contractor De Meuter, an expert from Carrière de Hainaut (the quarry the stone was extracted from in the 1960s) and other specialists in building restoration techniques, as well as the use of dismantling tests to find the right technique to carefully loosen the blocks and bring them to the ground. The surgical precision with which this operation was carried out is absolutely spectacular given that the biggest of these elements weighed 800 kg per piece!³ Afterwards, the stones were brought to the premises of Rotor DC and stored for around one year before being reinstalled.

Other materials that had been salvaged in situ to be reinstalled in the project, such as 750 m² of suspended ceilings, were thrown away in the end. Although their original technical sheets were kept in the building archives, it was concluded that their fire-safety standards would not meet the requirements for the collective areas.

Design follows material properties

The flamed-granite floor by Jules Wabbes, supplied by Rotor DC, was one of the first materials to be proposed by Rotor for the project. Very early on, it was decided to place the floor along the trajectory from the ground floor to the public terrace (a very democratic second life for the former executive floor from the General Bank). And three years after the initial idea, that is exactly where the floor has been installed. The only compromise that had to be made concerned the building’s expansion joints. Instead of the joint following the hexagonal pattern between the tiles, it had to be one straight line, cutting right through the middle of some of the slabs.

The trajectory of the bush-hammered bluestone found at the Belgian reclaimed materials dealer Maris Natuursteen during the design phase took a few more twists and turns. Initially considered for the terrace, it later became clear that these tiles could not be laid on terrace pedestals because their edges were too irregular. However, Maris Natuursteen indicated that they could slice the slabs to halve their thickness so that they would be suited for interior flooring in the atrium. The architects were able to pick up the ball and run with it. A beautiful pattern for the atrium was designed that uses both the bush-hammered upper halves, and the smooth lower halves of the slabs, while referencing the atrium’s original (long-gone) floor. Here, the design by CONIX RDBM Architects and the expertise of Maris Natuursteen really hooked into each other to create a result that would never have been considered if they had been working with new materials.

The project team’s appreciation of both of these batches of materials is maybe best exemplified by the fact that additional efforts were carried out to have them reinstalled on lime mortar instead of with cement glue to ensure their ability to be reclaimed in the future.

Additional logistics

We initially proposed that reclaimed hanging toilets could be one of the materials we collected and prepared for the project. Currently, the market for second-hand modern toilets is very limited, although a huge number of toilets

from office buildings are replaced each year, much sooner than their very-long life expectancy requires. As Rotor DC had developed a deep-cleaning method to remove the limescale out of the bowls and make the toilets as new again, we would just need some time to collect the necessary amount. The batch would consist of different models, that were to be divided per model over the different floors.

But Rotor DC only reclaims and cleans ceramic toilet bowls that meet several requirements: they are easy to dismantle, have a very-long life expectancy with little to no deterioration of quality, their technical characteristics are easily checked via their original technical sheets from the manufacturer, and they are still compatible with today’s construction regulations (which is much less often the case for the pipes, flushing systems and other accessories). This meant that the reclaimed bowls would have to be complemented with new fittings during the installation.

Similarly, a batch of thirty fire-safety doors that were salvaged directly from the WTC 3 tower would have to be combined with a new frame, as their original frames were specific to a modular partition system. Regulatory and practical issues had been solved by contacting the Belgian Fire Safety Institute and the original manufacturer of the doors (who was able to supply compatible door frames). But in the end, for both the toilets and the fire-safety doors, the additional logistics of this reuse operation generated a kind of reluctant hesitance. So, when the reclaimed toilets proved marginally more expensive than equivalent new ones, this option was cancelled. And for the fire-safety doors, it was decided that the amount was too small to justify the extra effort. Proving the reusability of such common materials—which are massively discarded today—would have been very meaningful due to their repeatability and scalability, but this innovative aspect alone was not enough to defend those choices.

Supply terms

Reclaimed raised floors are unique on the reclamation market since to our knowledge, there exist only two dealers in a reasonable radius around Brussels that sell this material. Both of them have large amounts of stock, and are able to supply vast quantities. The project team decided to work with the youngest company, only recently founded, as their communication and services were more in line with the expectations of the commissioner and the contractor. Discussions with them started relatively early in the project, as we stressed the importance of ordering sufficiently in advance. The idea, after all, was to install more than 15,000 m² of reclaimed, high-quality raised floor tiles. An amount that requires time for the company to collect; much more time than for new materials.

Something that didn’t help was that halfway through the negotiations, the supplier (a new company, as already mentioned) was suddenly very close to bankruptcy and had to find new investors. Luckily, this worked out and they were able to resume activities, but valuable time was lost. Even though negotiations were restarted, by the time the contractor was ready to place their order, the supplier deemed it no longer feasible to collect this many tiles in the remaining time frame.

Experimental reuse with third parties

Another idea that was launched during the design phase was to do something with glued-laminated timber that made good use of its excellent technical and aesthetic properties. It was eventually decided that the wood would be used as interior wall cladding. Glulam can be sliced and processed, and it works rather well when coloured black in such a way that its surface patterns remain visible.

As this type of reuse for glulam beams is very experimental, the process required many steps. Two work phases (and budgets) were needed to pursue this option. First, a small prototype was required for the necessary R&D, to answer questions such as: what are the optimal dimensions and treatments for the wood, how should the supply and processing be organised, how much will it cost, how much time will it take, how can the panels be attached to the walls afterwards, and more technical questions, such as how many volatile organic compounds will come free after installation, and will the wood be stable enough. Afterwards, the necessary amount of glulam beams would have to be collected; a process that would ideally start a year ahead of the installation of the wall cladding.

But the budget for the R&D phase and the prototype phase was never released. The project team decided it could spare this study cost by directly asking carpentry subcontractors for quotes. Finding candidates proved to be very hard given the large number of uncertainties remaining. Cordeel Group’s own carpentry department was willing to install the wall cladding only if it was to be realised with fresh wood. When an external carpentry subcontractor willing to take up the gauntlet was found, and the technical questions were eventually resolved in favour of reuse, a lot of time had already been lost. A race against the clock began. All the administrative aspects, the technical details, the collection of the wood, and the logistical questions had to be addressed together. The contractual discussions between Cordeel Group and the carpenter were tense because of the need for an important advance payment for the collection and processing of the wood. In the end, the option was cancelled because the final price offer of the carpenter was deemed too high. This increase was partly due to the urgency of the request.

What makes this failed experiment more bitter than the others is that the prototype had largely been executed at the expense of the new subcontractor because of the hesitance of the project team, and that a large part of the materials collection was already carried out by Rotor DC at that point, as there was simply not enough time to wait until the end of the R&D to start collecting. This half-hearted and rushed attempt resulted in a bad experience and a loss of money for the two SMEs involved. Finally, it was decided that the walls wouldn’t be finished at all. The gypsum drywalls would just be painted black instead.

The unique and the generic

A common criticism of the reclamation market is that it places too much emphasis on ‘special’ and ‘unique’ materials, and that it should address more generic materials as well. But if we look at the results of this project, it was the ‘unique’ materials that made it all the way to the end and were installed in the tower. The more generic or anonymous choices, such as the toilets, raised floor tiles, and fire-safety doors were defeated by the inertia of common construction processes.

These materials can constantly be compared with new building materials that serve the same function and have the same or at least a similar aesthetic, which is not the case for decade-old flamed-granite flooring, bush-hammered blue limestone slabs, or in situ reclaimed façade elements that played a big role in the original expression of the building. But for the generic materials, this part of the equation is simply not in play. This made it much harder for Whitewood, Immobel and Cordeel Group to assume a different decision-making process since the usual way of working with new materials meant no difference for the project's architectural, visible value. Even though, also for the more generic materials, this is needed, as proven by the examples above.

The absolute merits of the MULTI project are that it preserved an eyesore and transformed it into a beautiful building that will definitely push Brussels' appreciation for its modernist heritage by means of a set of smart and mostly punctual interventions; that it refrained from completely erasing all traces of the building's former materiality; and that it allowed reuse to shape the eventual result. The adoption of all of the reclaimed materials that have been integrated followed a reciprocal process in which the design is the direct result of that particular batch's aesthetic and technical possibilities, and in which the project team had to adapt its decision-making process and functioning accordingly. But the project also showed that reuse choices are easier to defend when there isn't immediately a new equivalent to compare them to.

Something else to take away from this project is that, in fact, getting the reclamation market and contemporary construction practices more in sync is not actually that hard. Yes, the glulam (glued laminated timber) panelling was way beyond budget, but a reclamation dealer that cleans reclaimed toilets and offers the necessary fittings to complement their installation would probably have unlocked the issue of additional logistics here. On the other hand, an increased willingness from Whitewood, Immobel and Cordeel Group to provide reclamation dealers with enough time to collect the necessary materials by ordering them in time, instead of postponing this to the very last minute as is customary for new materials, would have probably meant 15,000 m² of reclaimed raised floors in the building.

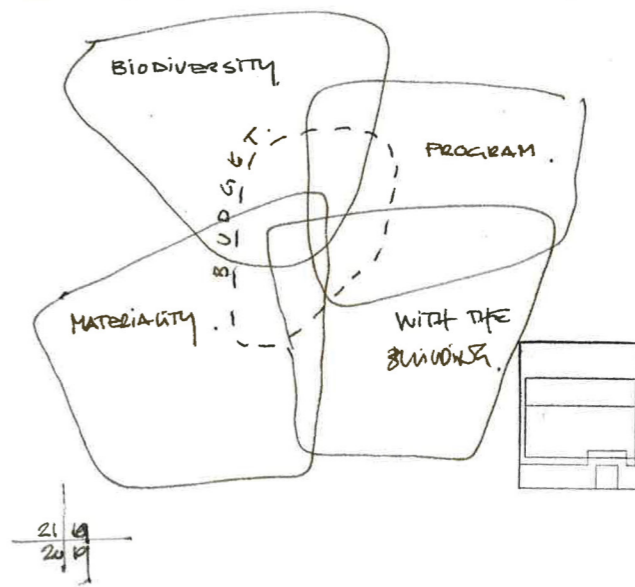
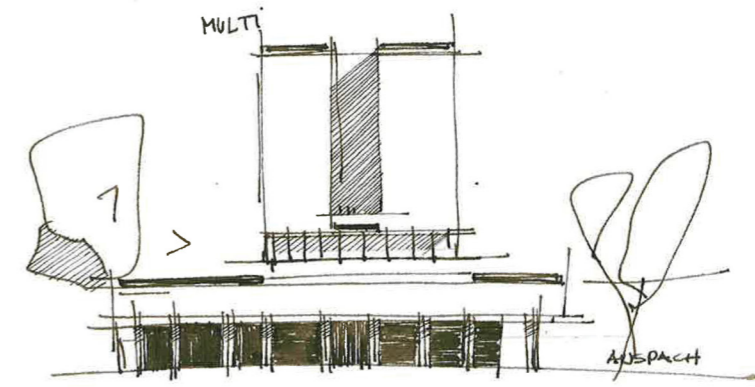
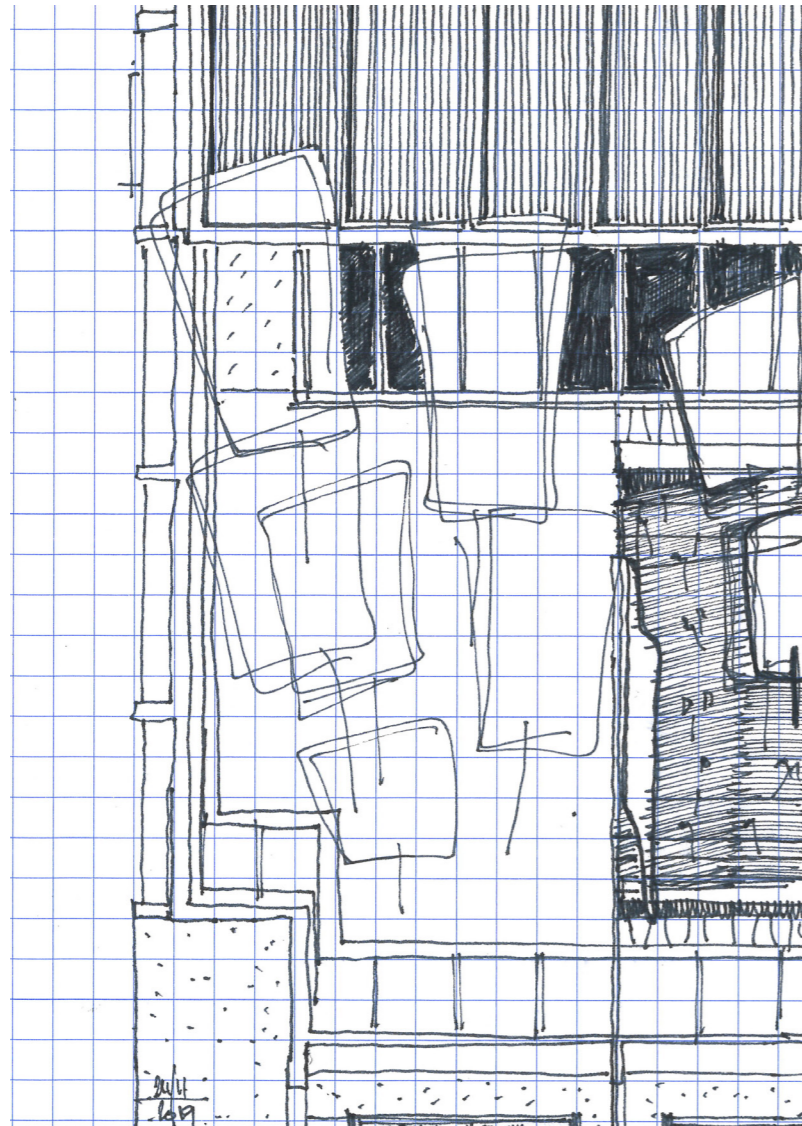
Of course, the fact that such a reclamation dealer doesn't exist (yet), and the fact that it is unusual for contractors to place large orders in time, is due to a legal and economic framework that has been shaped over the last 50 years, solely with new materials in mind—an issue that will have to be solved on a level far beyond that of individual project management. But we can't keep hiding behind that. Players in the construction sector can perform very significant moves towards a more sustainable future, even simply by moving step by step out of their comfort zone. For the MULTI project, aiming at 2% reuse was such a step. Despite the limits and biases of measuring a sustainable impact in weight, the target set at the beginning of the project provided crucial leverage throughout it. And by working in this way, we can push construction practices from within, which is ultimately needed if we want to change the legal and economic framework that shapes our actions.

¹ See opalis.eu

² It is important to note here that it makes absolutely no sense to combine preservation, reuse and recycling into one number. Not only are the orders of magnitude of these three strategies just too different to come to a sensible number, but their ecological impact also differs completely, and they entail entirely different socio-economic realities. Lansink's Ladder is right to prioritise preservation, then reuse and then recycling.

³ See: <http://rotordb.org/en/news/reclaiming-blue-limestone-slabs>





Part 1: A series of collective spaces within a strange body

To overhaul the Philips tower and converting it into a civic edifice, MULTI, the following gestures drive the design: first, a stitching of the lower levels (plinth) to the surrounding public space and the streetlife. Second, the creation of a certain porosity and permeability through the introduction of a series of collective spaces, topped with a winter garden on the 18th floor. Third, by integrating the parking access into the footprint of the plinth, the sidewalk is extended, and new public spaces are created. Fourth, an offset of the tower volume combined with the realisation of a high performative façade, reduces the energy consumption and increases the possible uses of the floor plan. The proposal works with the building's rationality and in the process, becomes a celebration of its somewhat brutal materiality and form.

Two public atria are proposed within the plinth. The vestibule, a larger-scale atrium, faces the Boulevard Anspach and the pedestrian zone and will remain publicly accessible. A central stair and elevators lead you to the urban platform on the third floor. At the same time this brings daylight deep into the originally dark plinth. The second atrium was proposed as a space with a series of lanterns (skylights) and will relate to the smaller scale of Sainte-Catherine. During the further development and in relation to tenants' requirements, this has not been realised.

On the 18th floor, a double height winter garden is provided as a civic meeting centre.

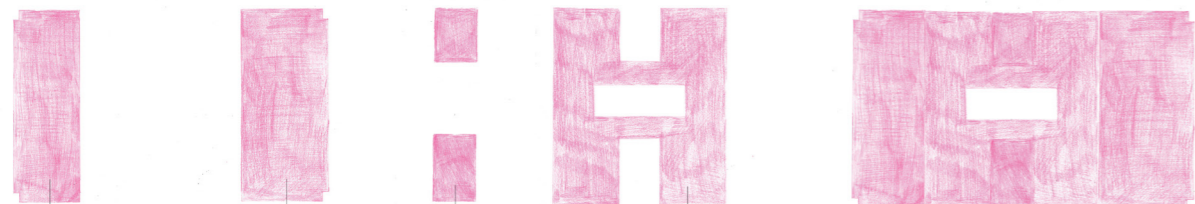
As for the special techniques: The free height typical of these tertiary constructions for the 60's and 70's is rather low (315 cm floor to floor but with a T-floor construction of 34 cm thick). Which means that the integration of current techniques of HVAC, insulation and energy use reduction is difficult. Especially when combined with an optimal use of space. To address these issues, a high performative tower façade is proposed at an offset of 250 cm from the existing structure. This combines the integration of new special techniques with an increase in rentable surface. To keep the proportions of the tower in balance, an extra double height floor on the top is realised. Because of this extra level, new types of functions become possible such as the winter garden and the auditorium. (note: due to a later change towards a fossil-free project, the auditorium had to give way to the new heat exchangers). The existing technical floor was, and still is, situated on the fourth floor, squeezed between the platform and the tower and on the top floor.

With regards to the materiality of the proposal, the new façade is, contrary to the existing black volume, white, with a non-glossy texture. The base for the design is the rationality that is characteristic of the existing building and the square plays an important role. The unitised façade elements have been prefabricated. They are designed to reduce the amount of material needed and to use as much mechanical fixing and as less glue as possible. This leads to a 95 % circular façade system. In relation to overheating, 25 % of the façade is opaque and the façade elements have a certain protrusion generating shadow.

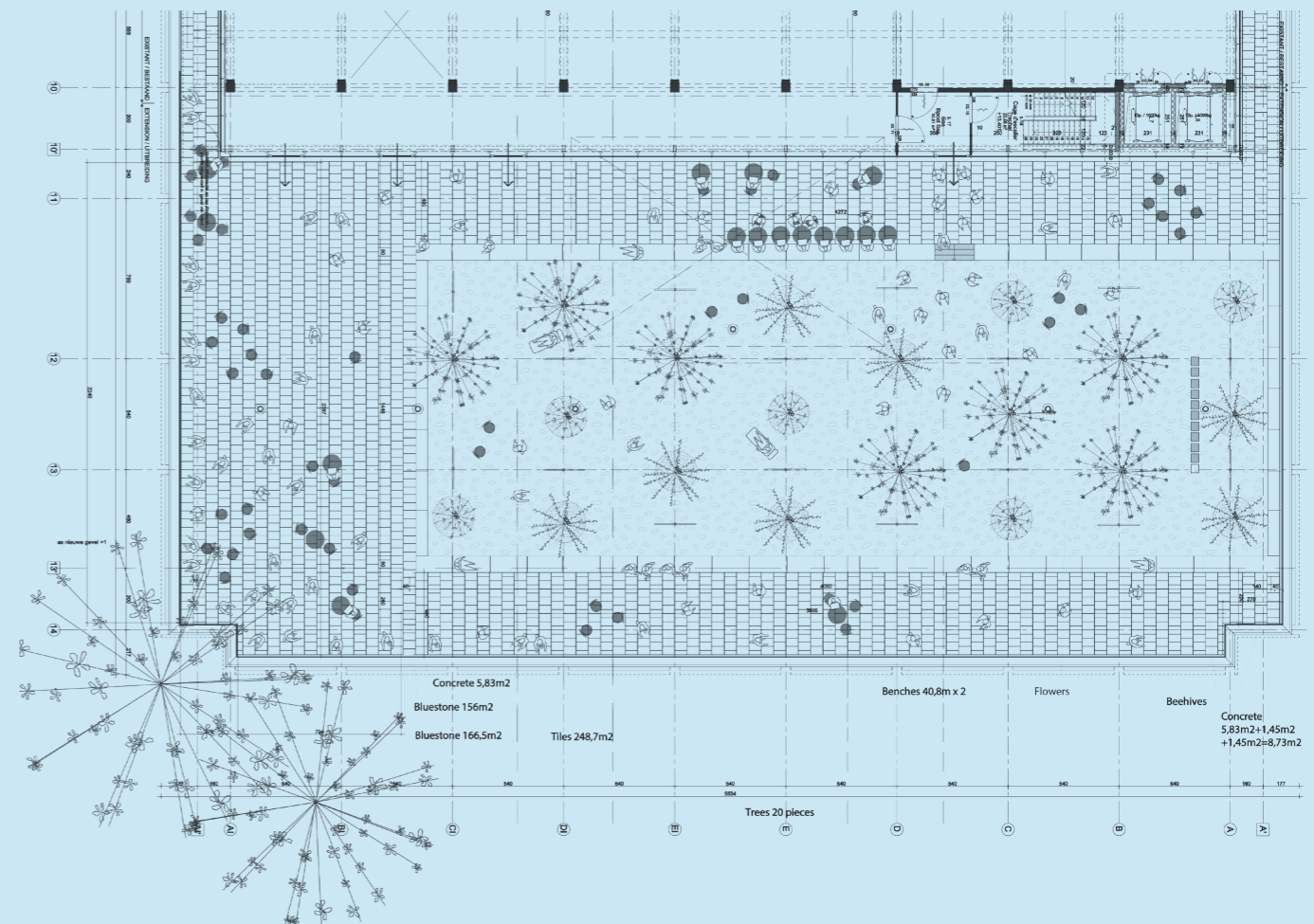
OPPOSITE: WORKING MODEL: LANDSCAPE DESIGN

The landscape design proposed a biodiverse urban patch by using the all roofs on the different levels and provides them with adapted planting.

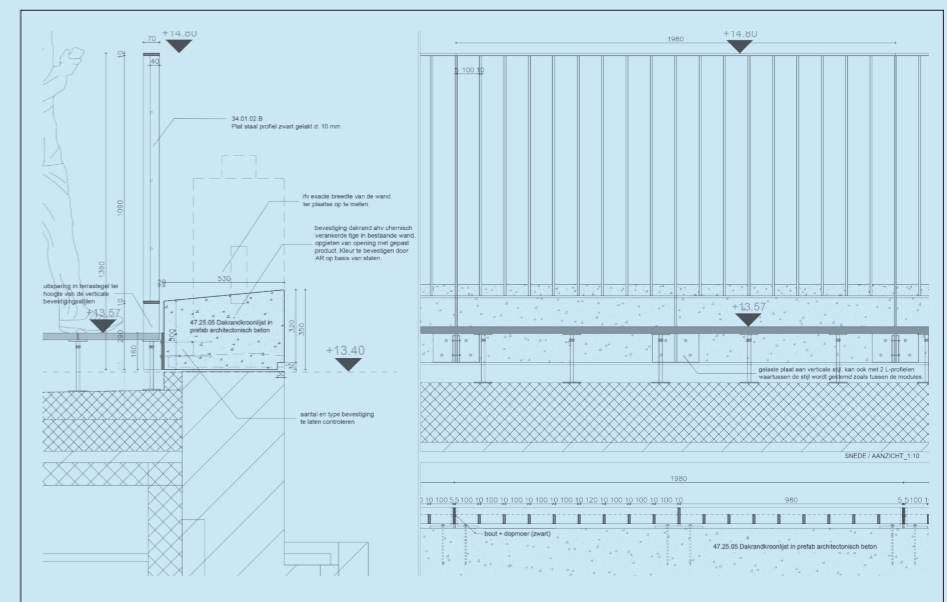




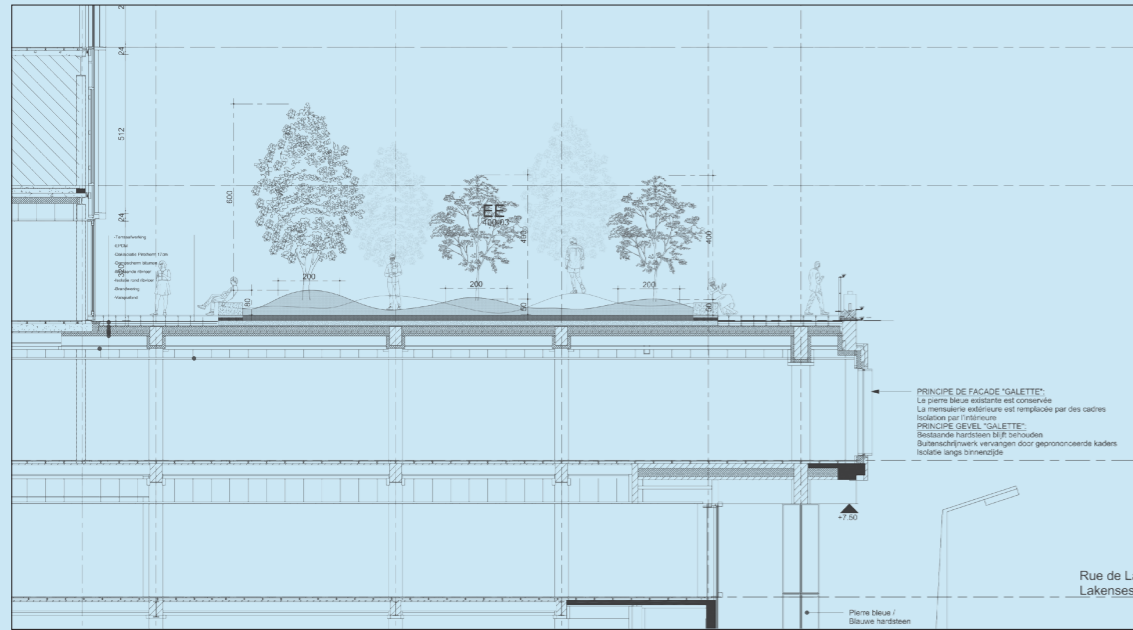
CONCEPT SKETCH
The rooftops of the different levels (+3, +5, +18) form a single biopatch.



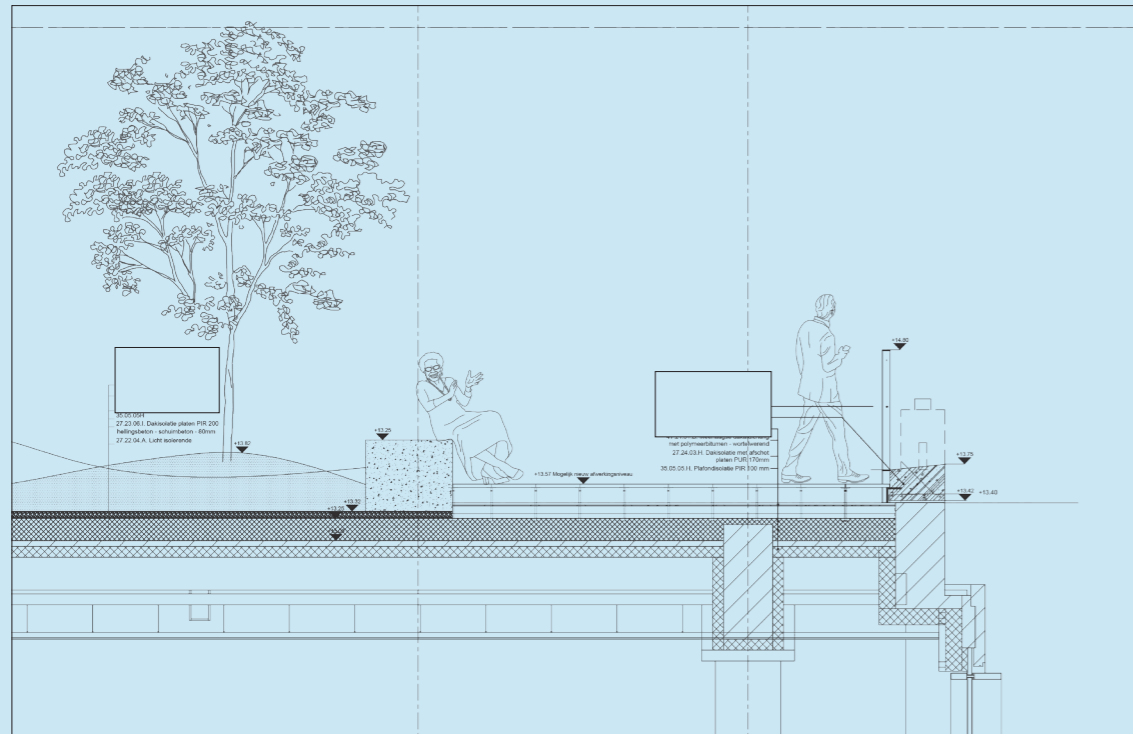
CAD drawing: positioning the trees based on the structural grid of the platform.



Detail



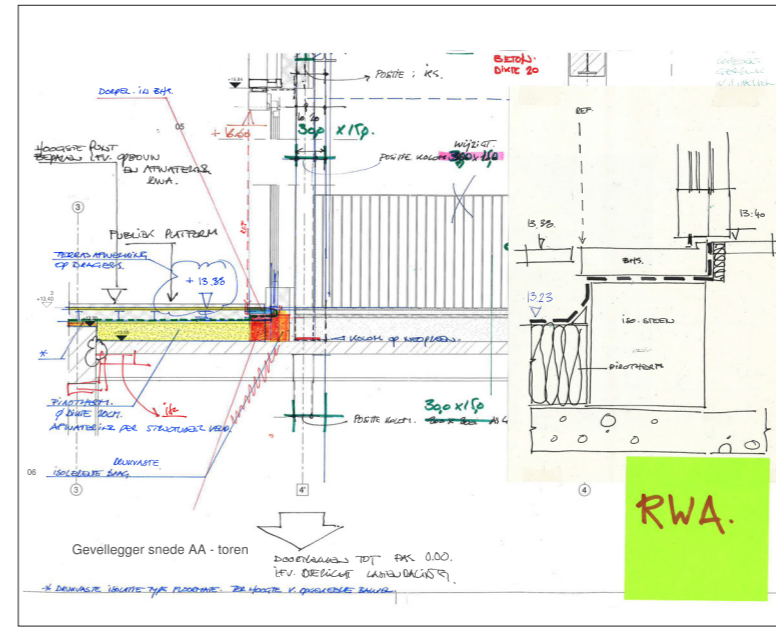
Section



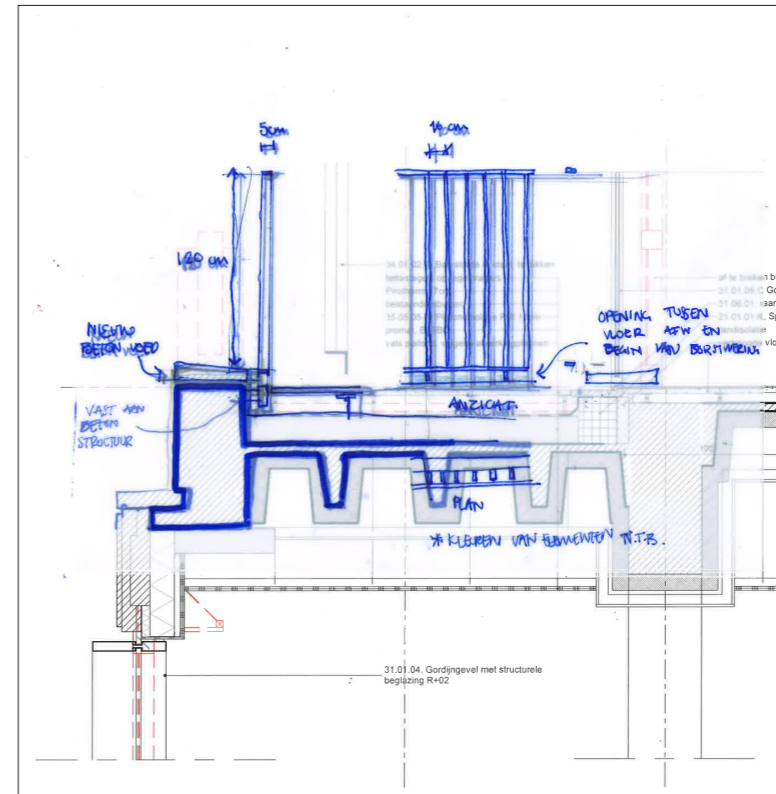
Detail

AUTOCAD DRAWING

Section and detail of the collective garden on the third floor. Proposing an undulated landscape in order to minimise the load and to maximise the planting depth. The trees are always placed on the structural grid, serving as an implicit indicator of the structure.



Section



Section



Integrated practice, a human centered operand

Frederik Jacobs and Tomas Ooms

Value

What if we stepped away from the idea that designing is finding a solution for spatial problems? And instead see it mainly as a practice of realising value for others. It is evident that in a real-estate project one links value with financial profit. And of course this plays an important role.

A blended world of BIM and design thinking.

Architectural projects also imagine and project other, different types of values. Some of these are difficult, if not impossible, to predict, let alone include in a digital model of the project and simulate.

Given the primary location of the Philips tower in the centre of Brussels and the fact that a pejorative public appreciation of the brutalist building existed, it was clear that any project developed on this site should address and achieve a series of values that are beyond the financial value of the real-estate operation.

The most important of these values are explored in the different contributions to the book: public debate, public interior, post-war recent heritage, private development with public ambitions and critical circularity. This part would like to discuss how BIM and integrated practice has been explored, in supporting the realisation of these values and ambitions.

The 'graphic documents', used to give the account of 'working with', have in common that they are more often than not, a hybrid. They are a combination of a digital base that is augmented with sketches, annotations.

How do you incorporate a discourse on value and architectural ambitions that goes beyond the pure quantifiable information such as surfaces, bill of quantities and what not in a protocol of integrated practice of BIM (Building Information Model of Management)?

CONIX RDBM Architects was one of the early adopters of BIM. Ten years of an intense learning curve created expertise in the implementation of BIM, predominantly in the building permit and tender and construction phases of a project. For the design team of MULTI, the introduction of BIM in the design process was a first.

The focus of the BIM team is the construction of a model with the intent to attain and retain all construction-related data, whereas the focus of the design team is representing the project ambitions and values.

In practice, this meant a fruitful collision emerged in the collaboration of the design team and the model team. Both had other expectations from the same model. Looking back at this collaboration of building the model and the project together, some central observations can be made. These questions all revolve around the model and the project design-values and deal with the position and role, the possibilities and impossibilities of BIM in the

process of achieving the values as set by the project team. Some of these questions are very pragmatic and some are more philosophical. Some don't have a complete answer, let alone a definite answer. But they all 'radiate' out of this crucial question in the middle.

Some questions

How can BIM be integrated, used and abused in a form of design thinking that leads to the realisation of architectural goals and ambitions or values?

When you want to explore if a design proposal will achieve the values the project team has set, the proposals and steps leading to those proposals need to be communicated to the project team. This means that the way you represent your thoughts, insights, even doubts, play an important and crucial role. Therefore the design team was continuously looking for ways to integrate these architectural representations, which can be abstract and conceptual, in the BIM model. Or at least figure out and try out how the BIM model could support this. The focus on the working documents in this book includes examples of how this has been tried. This key question revolves around finding a form of representation and information that is linked to the project's ambitions and values. You also have to consider how information that is contained and stored within the model can be accessed. This is rather straightforward in the case of hard data such as a bill of quantities or clash detection but it is much less clear when it comes to conceptual data.

How can the construction of the model itself lead to new insights and discoveries?

Drawing is one way through which architects try to appropriate, and come to grips with the spatial questions of the project they're working on. The activity of drawing, sketching is a manner of understanding and incorporating insights about how a design, site or existing building works. This also goes for when you construct and build a BIM model. The person making the model is bound to develop an understanding of the project and maybe make some discoveries. How do you share this knowledge and the insights that are produced?

How does information travel from the model team to the design team? And vice versa? Part of the answer lies in what type of input is required to obtain a pre-set kind of output. The required form of the output relates to how these data are stored and incorporated in the model. By setting the expected output beyond the traditional output of a BIM model, common ground is developed within the project team.

How do you keep track of the design thinking in a BIM model?

Drawing, sketching and making working models (maquettes) always has something unequivocal or ambiguous. More than one design option can exist in a sketch or drawing. Some lines overlap, a façade drawing can temporarily not correspond to the section or plan for instance. But a sketch can also contain a certain chronology of design moves. A column can be proposed in one location one moment and the next moment in another location for some motivated reason. Different concepts can be tried out simultaneously in the same drawing.

Obviously, one can ask the critical question whether this is something that is needed and even relevant in a BIM methodology. And probably the answer is no. However, in construction a lot of mistakes are made because at some point a very deliberate design decision has been taken (move this column there because...) but along the way this 'because' is not graphically present in the model. In that sense, finding a form of integrating this 'because' is highly relevant. More so because the 'because' is not only related to the pragmatic but more often to the value. We propose this because we have an ambition to obtain that specific value.

How can the BIM model become more than a data repository? How can it evolve beyond a dataset from which we can recall data that we have placed there ourselves in the first place. What is needed for BIM to become a tool or method that supports value creation in design processes? BIM is a very closed environment or system whereas design is characterised by the complex and the open ended, at least in design thinking that looks for creating a diverse set of values. This openness is associated with conceptual design. The goal would be a method of constructing and harvesting from the model hoping it can lead to unprecedented and unexpected but relevant new insights.

Within a design process, more than one 'model' exists. How do these very different models with very different receivers or audiences for whom the model is intended, communicate?

Feasibility study, architectural design ambitions, operational requirements, financial calculations, technical standards and regulation are just some of the 'models' at play in an architectural project. And all of these models somehow need to communicate and relate. Each and every one of those models needs interpretation. The models themselves are just that: models. The designer is required to be the interpreter, the interlocutor, the translator and relator.

How far should the agility of the model be stretched? BIM models are time consuming to modify. But during preliminary phases or in a situation where the way of constructing the building is to be defined in a later project stage (after obtaining the building permit for instance).

How can the model become a model of ideas and concepts? In a sense we return to the first question. It remains important to keep asking these questions because they reflect on the architect's role in a contemporary building trajectory. It's a question that deals with authorship and ownership. It situates itself in between design thinking through a drawing, making, and critical thinking process on the one hand and a component-oriented process production on the other. BIM can be a very powerful method and tool in monitoring data, such as quantities, regulations and what not. But it lacks the ability of supporting value based design thinking as an open and complex creative process.

Should this be integrated in a BIM environment? How can forms of abstract reasoning be included in a BIM practice (and BIM protocol?)

Some answers and more questions

Obviously this is a plea for a human touch as a form of integrated practice. The role of the architect and with extension everybody involved in MULTI, has in a sense always been to 'see relationships' and to relate.

Not only to highlight existing relations but also to create and realise new and unexpected ones. And on top of that trying to understand these relationships. This means to see how things are connected and how a change in one (model) affects another if not all of the others. And at the same time a designer is expected to formulate strategies for tinkering, resetting, reconfiguring, directing etc. these models.

During the design process the team looked for ways of blending and hybridising a design method and a BIM methodology. The BIM model was augmented with sketches and different study drawings. However, we didn't find an effective method of incorporating this in the model itself. It remains a goal.

The annotation is a way of making visible and understandable what has not been drawn or is not obviously visible but important. The annotation is a form of information and aims at obtaining a level of information in the model that surpasses the level of detail. The annotation can also keep track of design decisions (the because). The model therefore contains the history of its own creation and development. This means that someone can backtrack and figure out why something is the way it is. It's a form of information continuity within a project.

Since the value of a project is not always defined and expressed in quantifiable data such as quantities of material, square meters, etc., the process leading to certain design decisions needs to be open and transparent. It should allow for discussion, debate, deliberation and contradiction. To support this transparent dialogue, the architectural documents should be open and contradictable.

From the same point of view there is a process of 'weighted appreciation' involved. What do we value? How do we value? And we have to acknowledge that some part of this weighted appreciation is 'emotional' and sometimes even irrational.

What if we consider BIM to be both 'open' and 'closed'? And determining if it is 'open' or 'closed' is in the eye of the beholder? Access to the data and translating the data through a 'story' into information would then depend on the competences and expertise of the beholder. Creating manual sketches is very much a physical act involving different bodily senses and sensations. It is probably some form of recognition that makes the manual, hand drawn sketch easy to understand and relate to. Drawing, or thinking by hand, is a combination of intellectual and sentient use of the body. We are talking here about 'interpretation'.

The BIM model is able to retain and contain a huge amount of data and release these data in a linked and integrated yet analytical way. Through tweaking and setting templates, the way the data are turned into information is adapted to the user. The proper and most appropriate language is adopted. This is done by appealing to specific knowledge and competence but also expectations of the receiver. In the preliminary phases of the project, two types of images of the project were produced: one was a photorealistic render and simulation to reassure the client and investors.

The second was a more academic representation of the architectural ambitions and urban aims directed at the administration. Both based in the same project but aimed at different audiences, regardless of their professional competences and expectations.

The selection of documents explores those moments when the limitation of BIM or the analogue sketches and drawings emerge, interesting things happen and the added value of using the two methods in parallel becomes apparent.

Yet another is that the above realisation challenges us to describe the interface, the relationship between the two, in the code, the DNA of the design for which BIM is a perfect carrier because by putting the code in and thus going parametric, you enable the model itself to iterate through all the same reasoning than before when a parameter is changed and generate the new status of the project. As such, it is a challenge to elaborate the reasoning and thus make it even more contradictory. Parametric design where not only physical parameters are used but also human scientific, philosophical, etc.

Emerging research lines: prototype, BIM and the civic

The first of such a research line deals with the insight in the importance of designing with flows and the role of 'progressional' insights and knowledge. More and more assignments and design briefs are less clearly defined and are more open-ended. Projects are less stand-alone and need to be entered into a rather complex reality. The design is then identifying currents (the flows) and trying to tie them and create closed circuits: circularity.

A second line of inquiry is that during the design process, it became clear that working with the concept of circularity has some particularities. One of those is the need to prototype. Several prototypes are being made to test the re-purposing of harvested materials. You don't always know up front what is available and how this will behave in the new situation. Without going into the technicalities, this created legal voids when it comes to certification, for example. This will be one of the many challenges for the field of circularity.

Another observation is that within a circularity mindset, a lot of agility is required of a designer and maybe even more so of a client. Because it's never clear what materials will be available, when they'll be available, what shade of colour they will be, what are the specifications of that material, what are the dimensions, etc. It will pose a new paradigm for the designer (but so many cultures did this before us). Although currently a hot topic in architecture (and the economy at large), circularity probably will only really take on or get some grip the moment reusing materials is cheaper than sourcing new materials.

A third line links circularity with BIM (Building Information Modelling). Throughout the design process and during the construction phase, an atlas of sites of harvesting and reusing is kept. This document shows where materials come from and where they're going to be used in what form. This atlas is amended with flow charts that show the route of the used materials. It's a kind of graphical material passport.

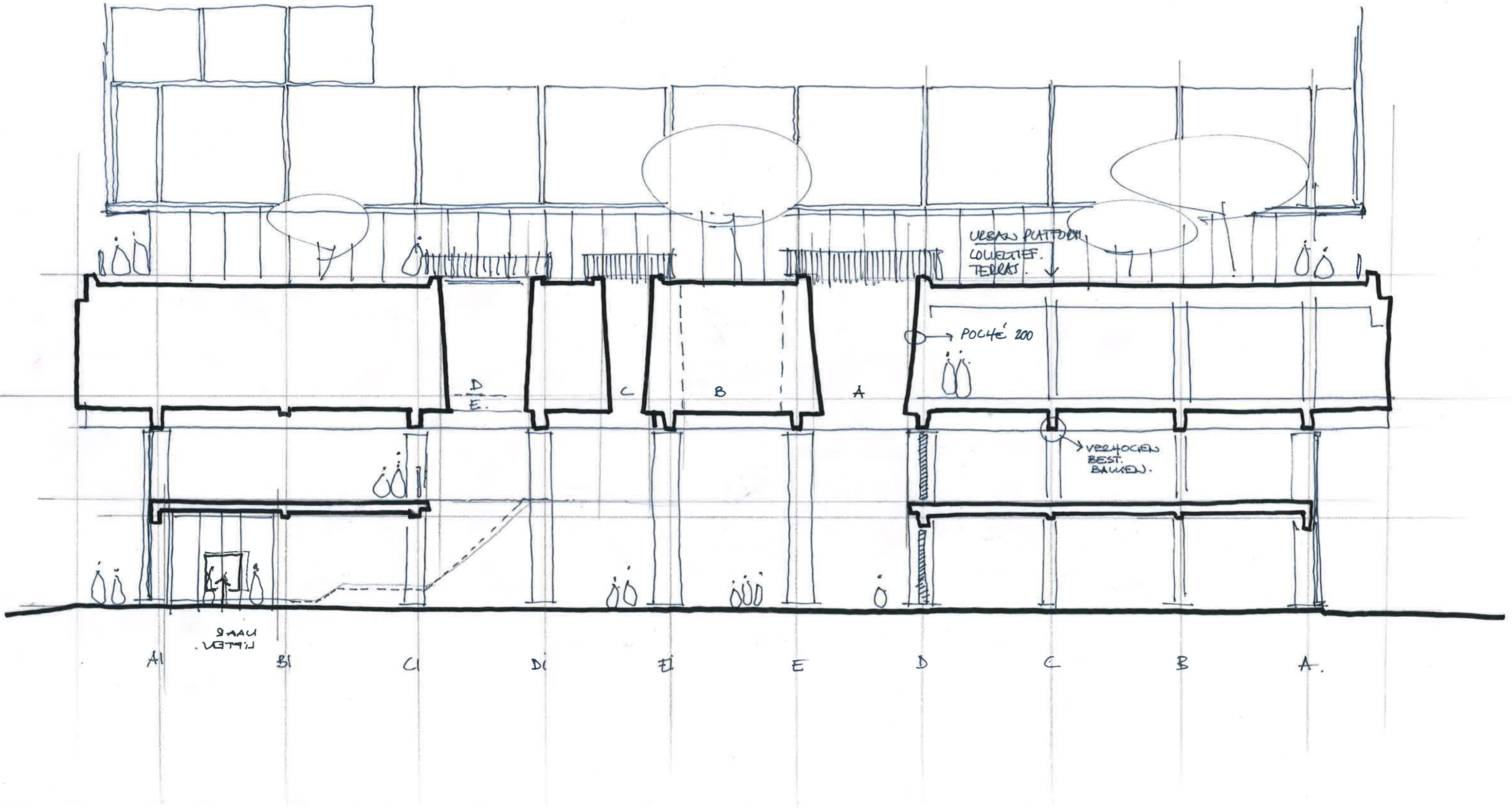
Currently the project team is exploring the potential of BIM in relation to the theme of circularity. Starting from the question of how BIM can support the knowledge of circularity?

Material passports are already established as a possibility. But less obvious lines of inquiry such as ways of calculating the impact of the circularity. Or whether it's possible to express circularity in terms of performance? Another is to make sure that the procedure for disassembling parts of the building is integrated in the BIM.

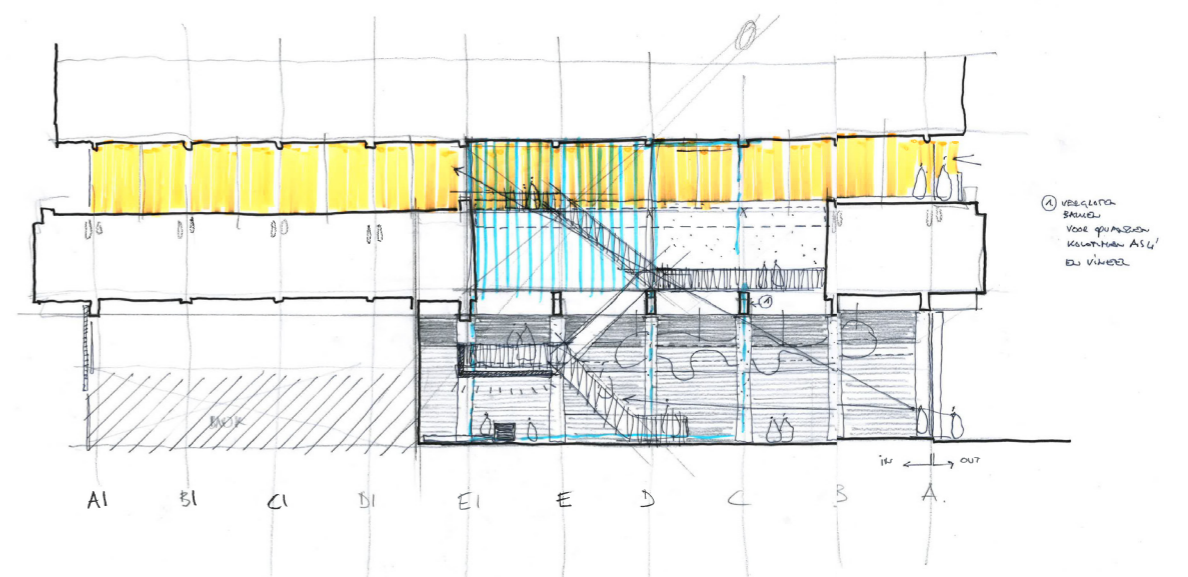
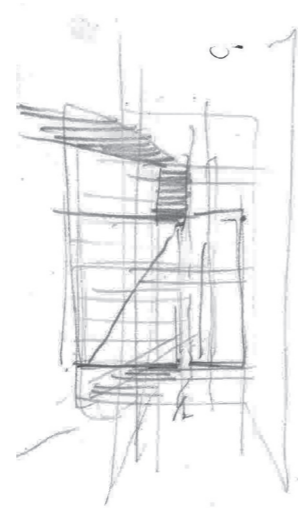
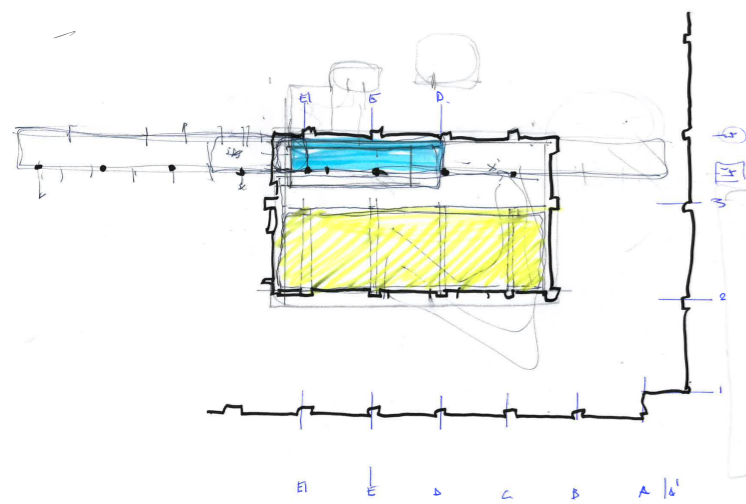
The next step is the integration of this information in a usable way in BIM and the integrated practice. The questions that popped up in the application of BIM to the project is a question of representation. It's a question about the role of the drawing in (architectural) practice and how the BIM can become a design method early in the design process.

And a fourth line of inquiry is more philosophical in nature and is related to the intent of the reconversion of the Philips tower: the agency of the impact of private space on the public realm and the idea of the civic. How can you ensure that the proposed publicness of these large scale real-estate project is continued over time, maintained and supported by its owners and the tenants? And what can we as designers contribute further to this debate. For my practice, this means exploring the concept of the urban space exchanger and the idea of the urban platform in a condition of distinction and overlap, towards the edifice as a civic gesture.

Note: It is clear that these reflections are related to a specific setting in which the BIM team does not include the designers and vice versa. In other settings, for instance, ones in which the design team is also working directly with the BIM model, some of these questions do not arise or arise in different forms.

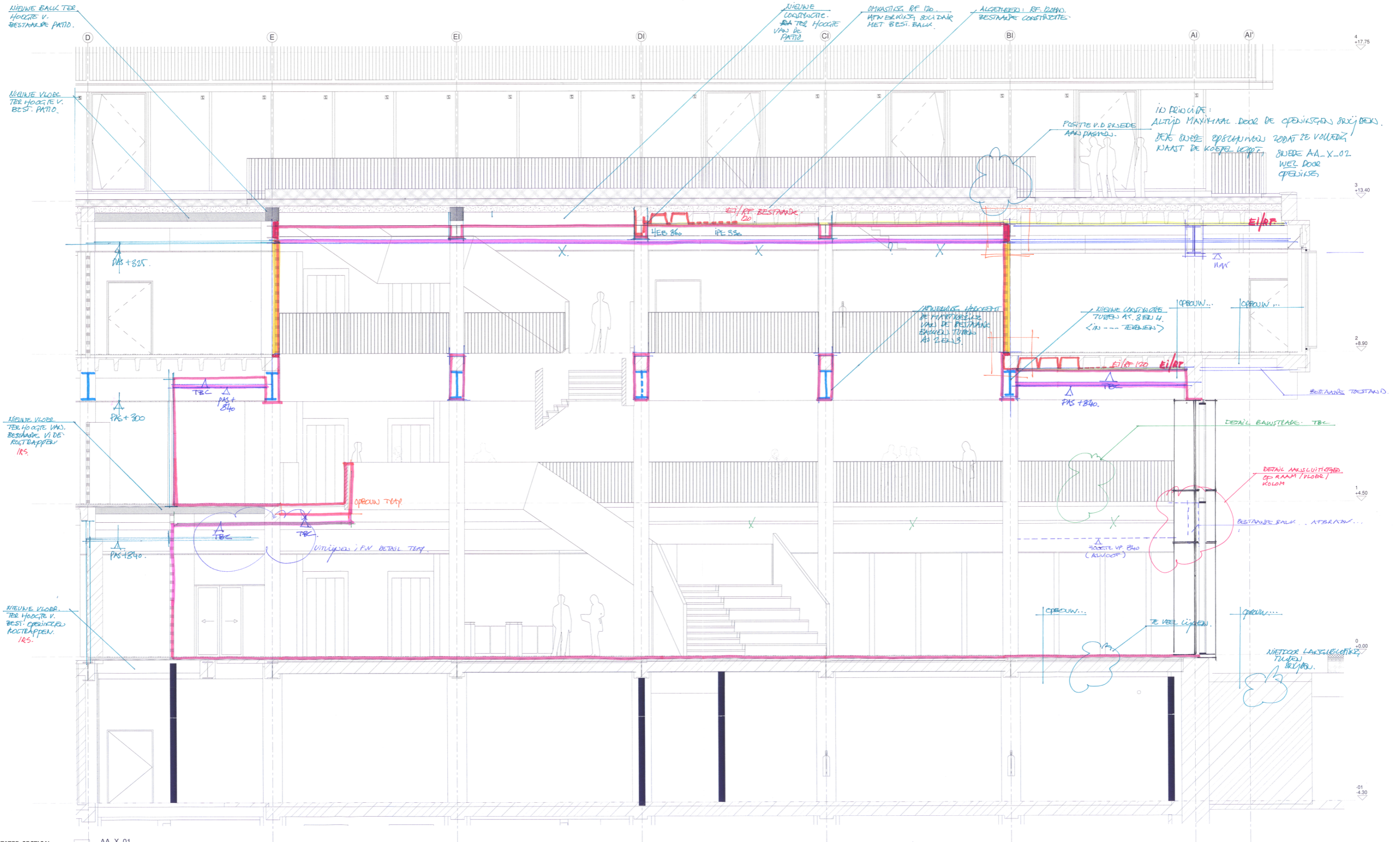


CONCEPT SECTION
 Three lanterns bring light into the groundfloor and refer to the small scale urban space of the place Sainte-Catherine.



CONCEPT SKETCHES

The new atrium connects the urban platform, the entrance space and pedestrian zone in one fluent movement.



ANNOTATED SECTION
 Section through the atrium defining the finishings and wall compositions.

AA_X_01
 1:50





Part 2: A series of collective spaces within a strange body

The plinth volume is restored in its original brutalist detailing and materiality but with a more open and engaging attitude towards the public space surrounding it. This way the originally disconnected interior will be stitched and conjoined with the exterior, the pavements and pedestrian zone.

The integration of the parking access within the footprint of the plinth is an important feature of the proposal. The parking entrance and exit are combined into one access, thus reducing their spatial impact. The decision meant there's less retail surface to rent, but it increases the amount of public space. Consequently, the pavements have been enlarged and the continuation of the public space and its pavements is restored.

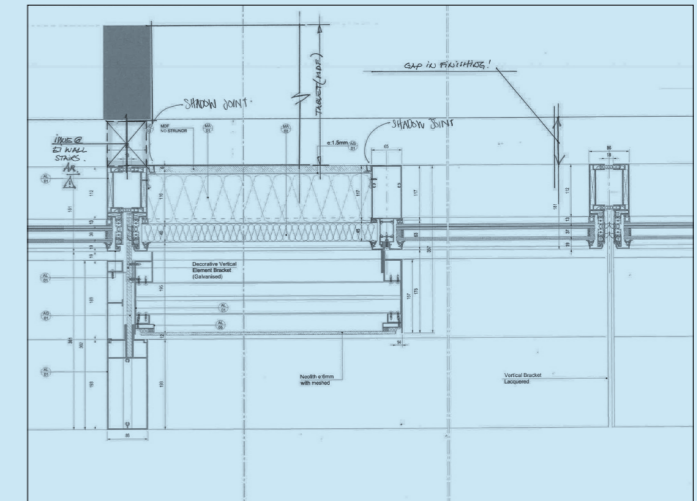
The original bus underpass has been removed and the bus terminal that was alongside the Philips tower has been distributed more evenly over the surrounding streets. The sum of these actions allows for a new public square facing Sainte-Catherine to be created on the west side of MULTI. This new public space refers both in scale and atmosphere to the Sainte-Catherine neighbourhood, attracting sunlight in the afternoon, while being linked and related to the public interiors in the plinth and leading to the series of collective spaces.

As an urban space exchanger, the project supports the new pedestrian zone that is realised in front of MULTI. The reconversion of the Philips tower maximises the public accessibility for the public. The Philips tower has these large platforms on the third floor which were originally intended to be connected to the North District urban development. The reconversion proposes to 'actualise' these platforms on the 3rd floor on either side of the tower by linking them (for the first time) to the public space. They will become urban civic platforms overlooking the urban spaces around. These platforms will be refurbished as urban terraces and urban gardens.

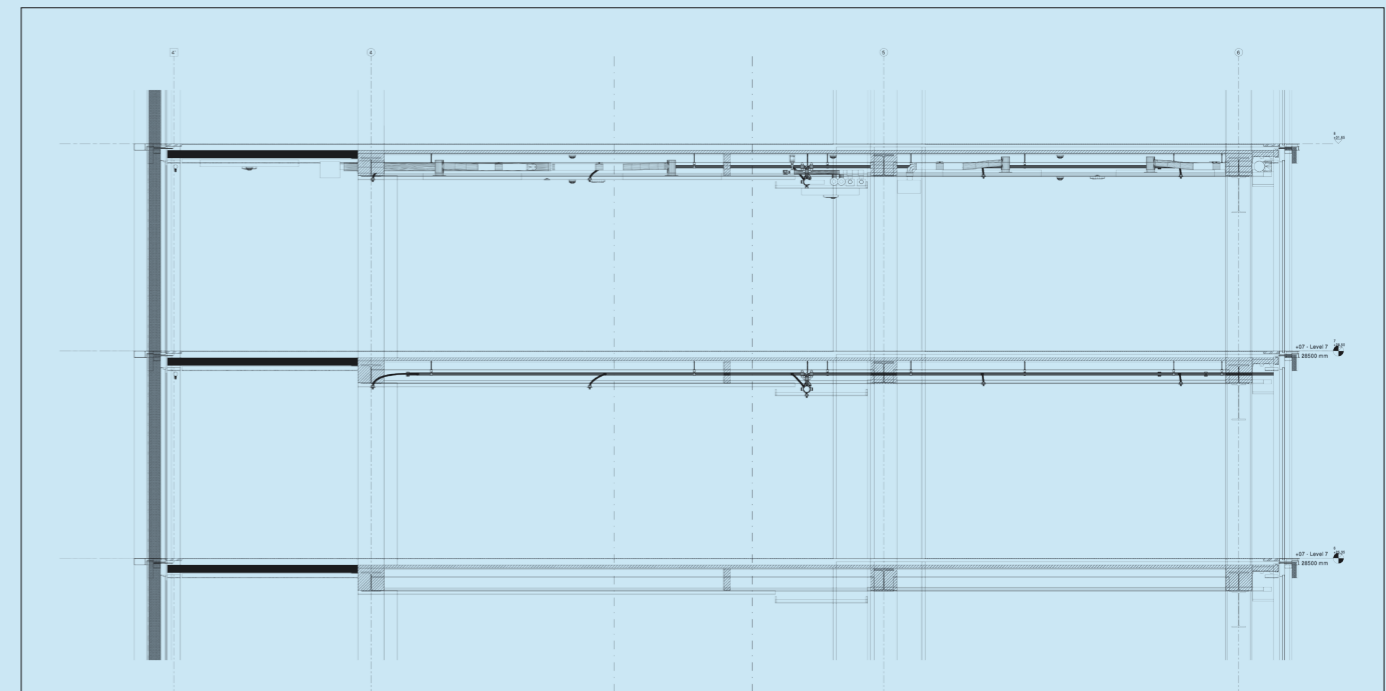
An important condition that had to be taken into account was that parts of the building are owned (ground-lease) by other companies and thus remained in use during the whole of the construction phase. On the ground floor, part of the building is owned by BNP Paribas Fortis bank and was in use throughout the reconversion. The same goes for the underground car park with a capacity of 500+ spaces. This also remained in use except for the final months when the car park itself was refurbished (and the new access was constructed).

MULTI has a BREEAM Excellent score and obtained the Be.Exemplary 2017 award.

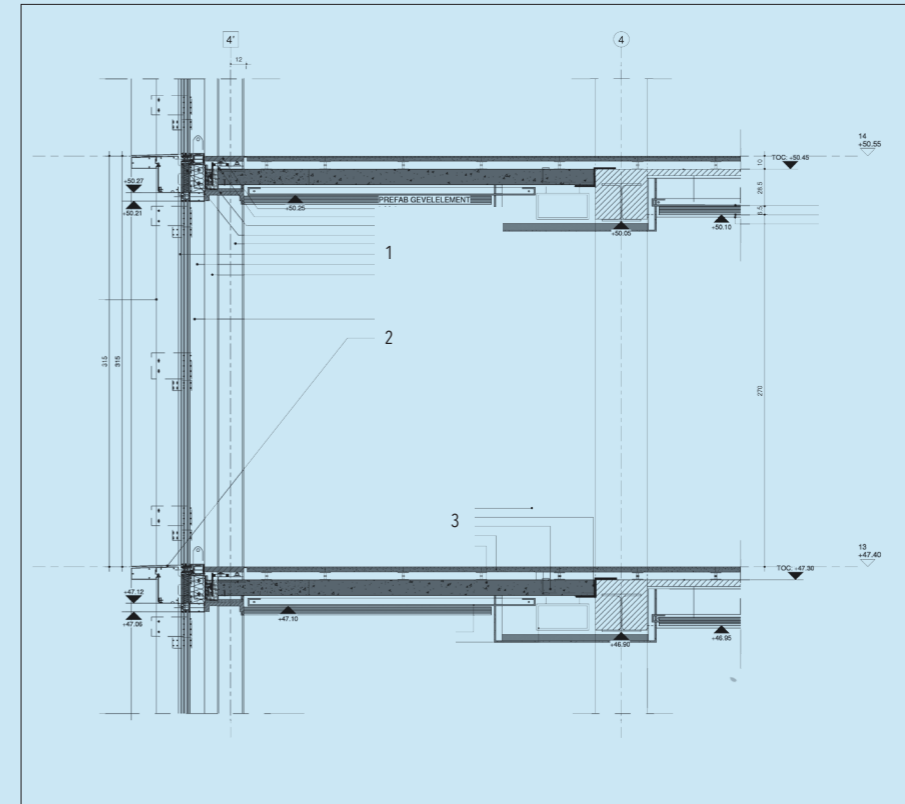
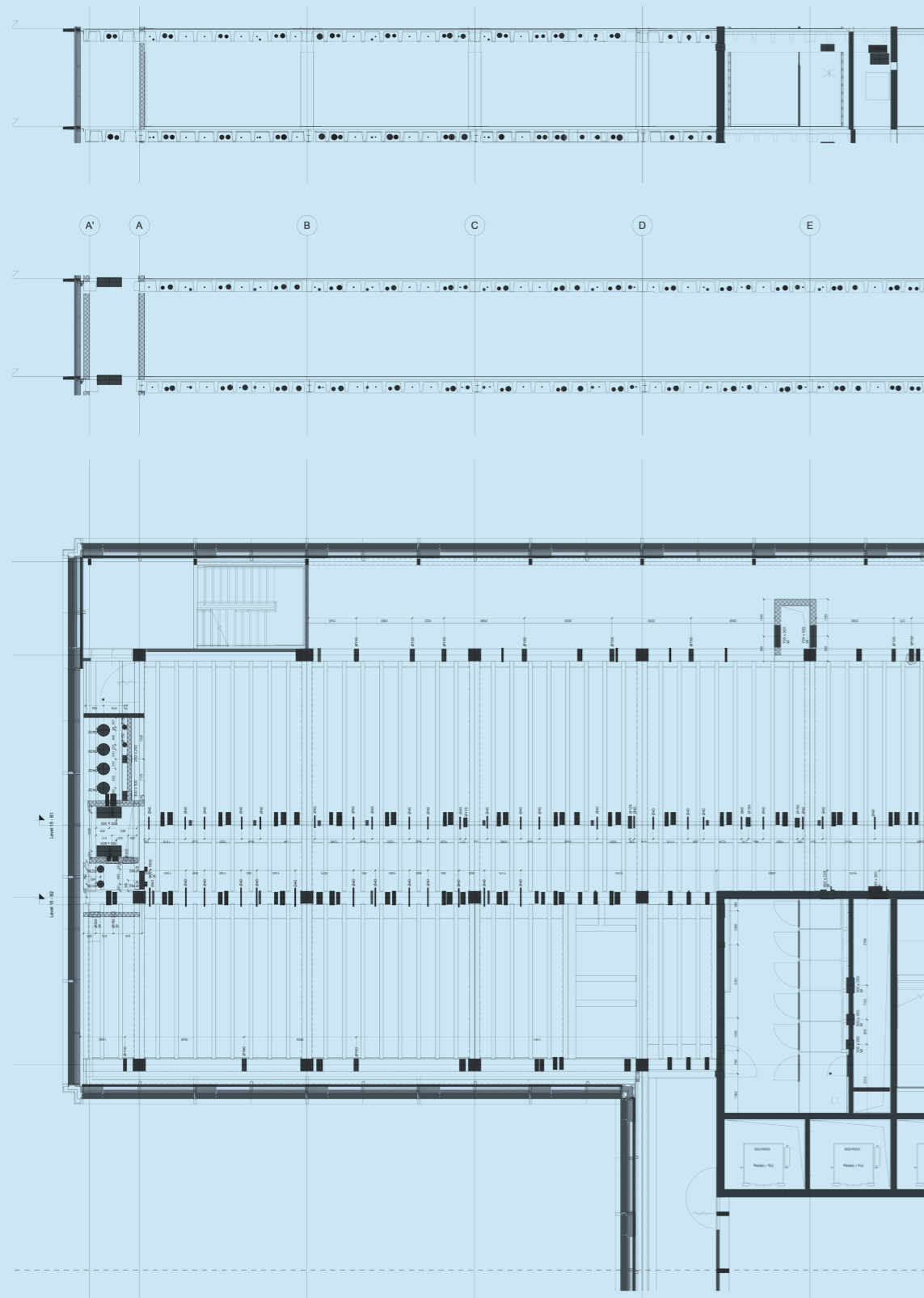
Throughout the design process, the project discusses, explores and aims to contribute, as a private project, to the quality of the public space. The reconversion project will create a public sphere and become part of the public realm. In the design discourse, the question of how a private project could contribute to the quality of the public space was always at the forefront. Too often, this idea of seeing a private real-estate development as a positive engaging agent in the public sphere is overlooked or not addressed. However, the aim was to reconvert the Philips tower into MULTI by converting it from a corporate headquarters into a civic continuation of the public realm, on private property.



Autocad plan: detail unitised façade zero element

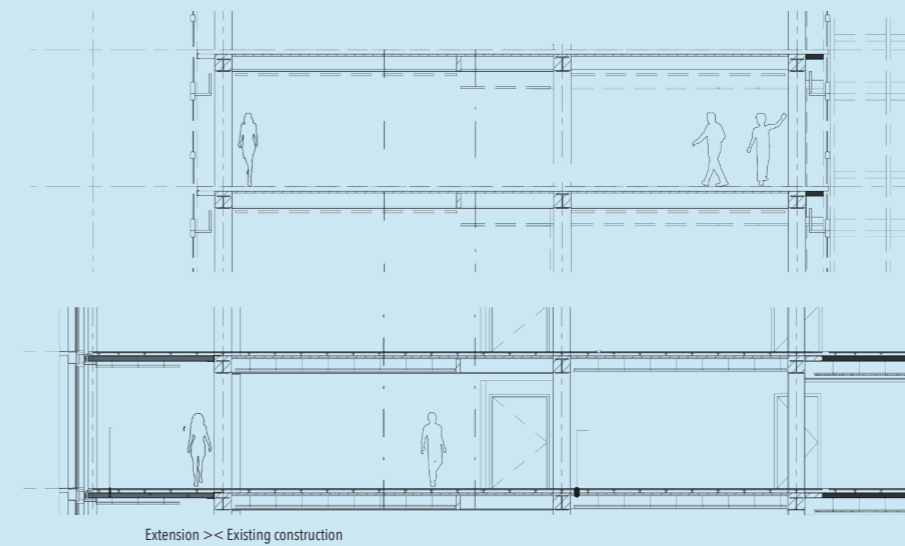


Autocad concept section: lateral extension of the tower on the east and west sides



- 1 Raised office floor on top of prefabricated floor construction and climate ceiling with integrated lighting.
- 2 Prefabricated unitised façade: two panels of 180 cm with on 315 cm height form the basis zero element.
- 3 New ventilation ducts and sprinklers are integrated in the extension of the tower volume. The prefabricated floor construction is supported by the existing beams and the columns of the extension.

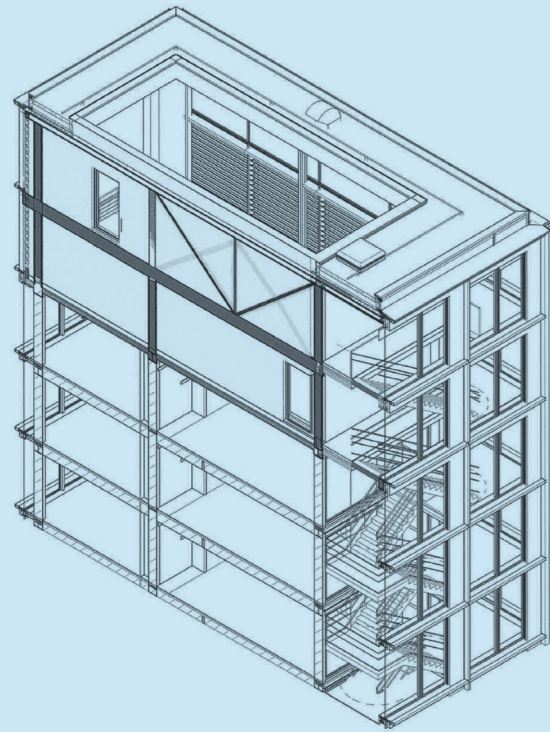
Extending the tower in order to create more adaptable floor space, enhancing views of the city and daylight and integrating new techniques.



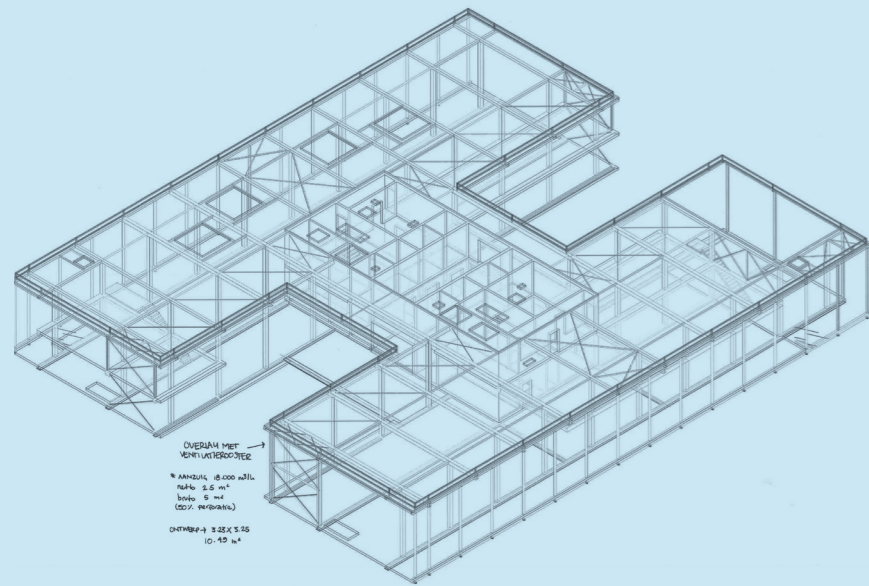
Existing section:
showing one leg of the H-shaped tower

New section:
showing the extension of the tower

BIM MODEL:
COMBINED OPENINGS FOR TECHNIQUES
 Reducing the creation of new openings and safeguarding the integrity of the structure by where possible reusing the existing openings in the beams for fitting the new techniques.

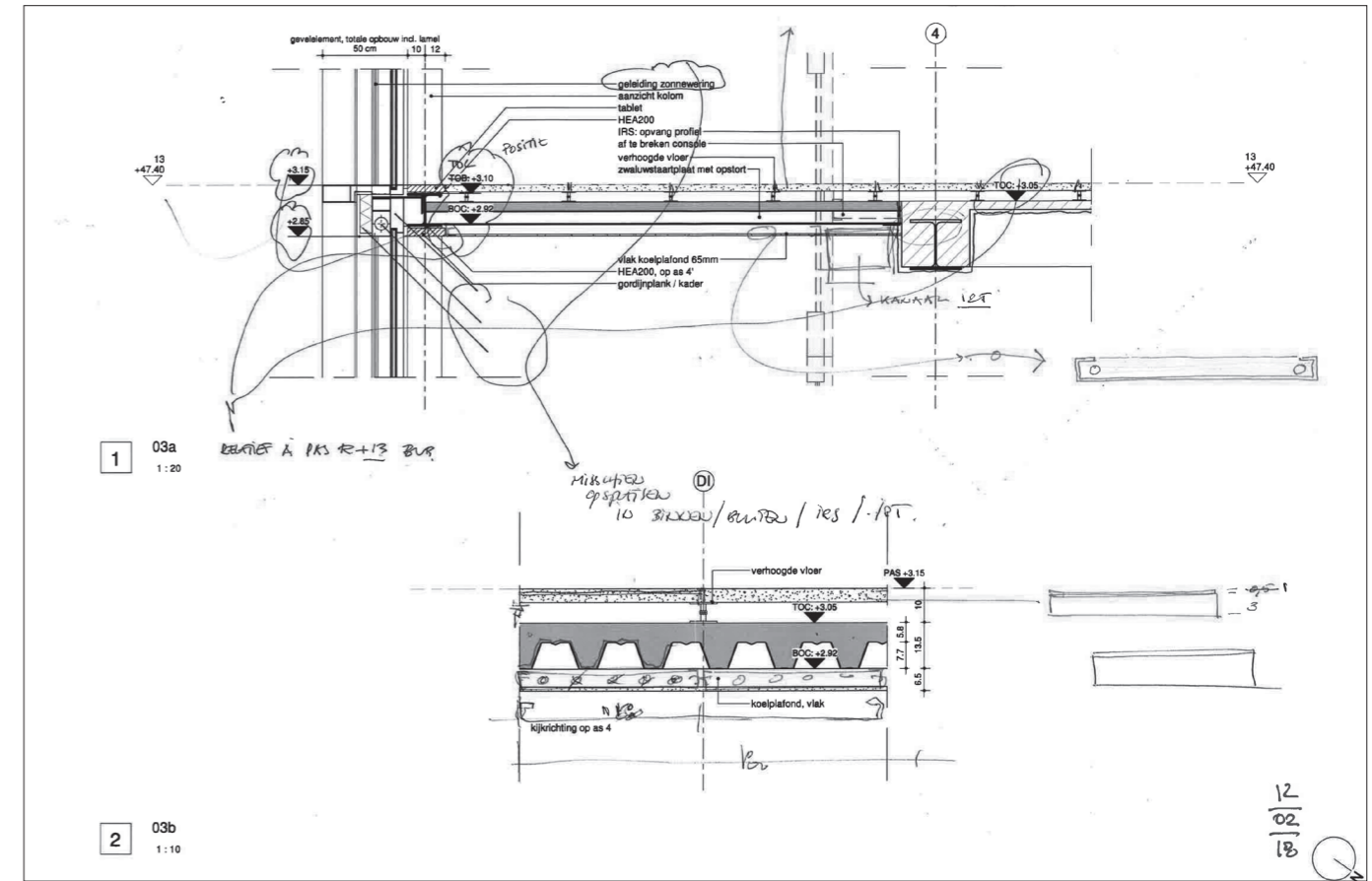


Top



Bottom

BIM MODEL
 New stairs to fit the increase in workplaces per floor are foreseen in the corners of the towered extensions. In order to keep the proportions of the existing tower and to provide double height spaces, two extra levels are added. Axonometry showing the construction.



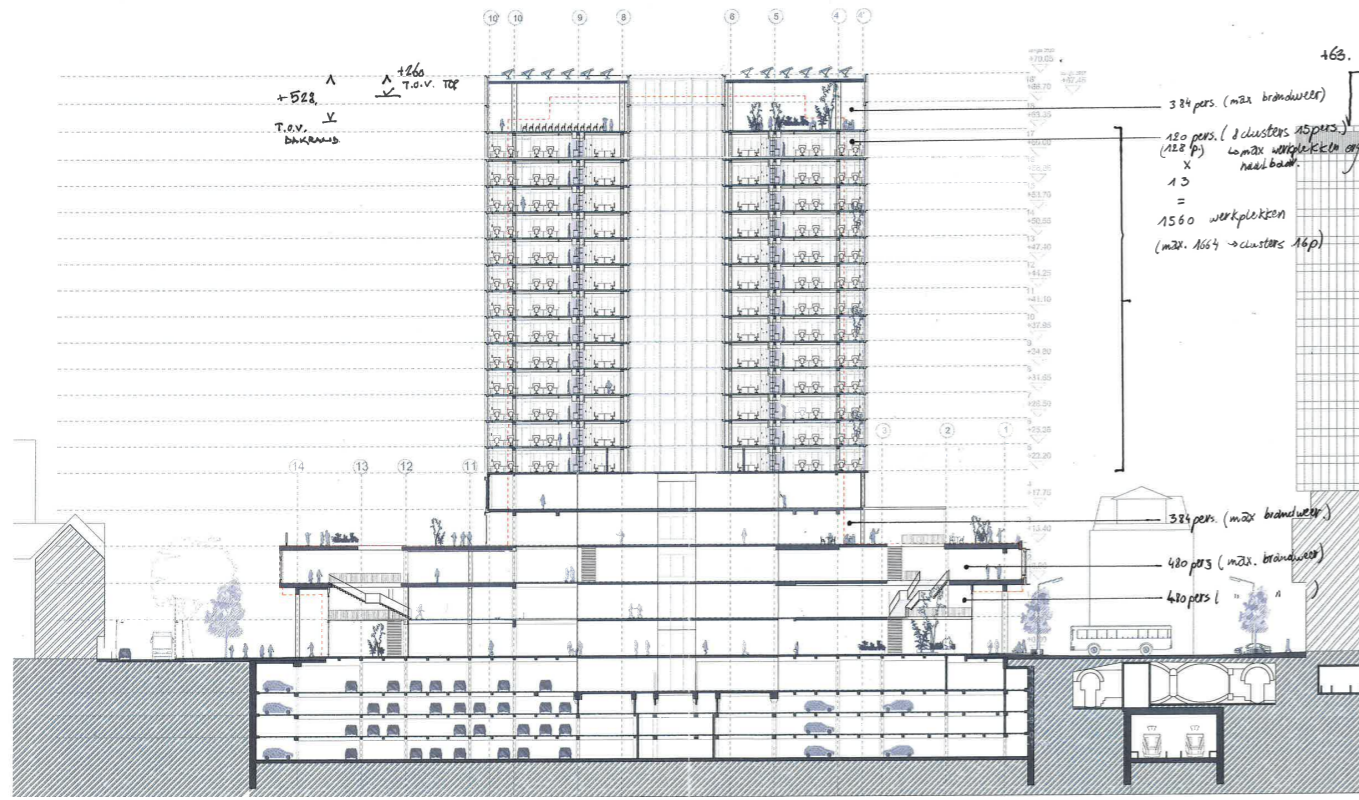
STUDY SKETCH
 Detailing the extension.



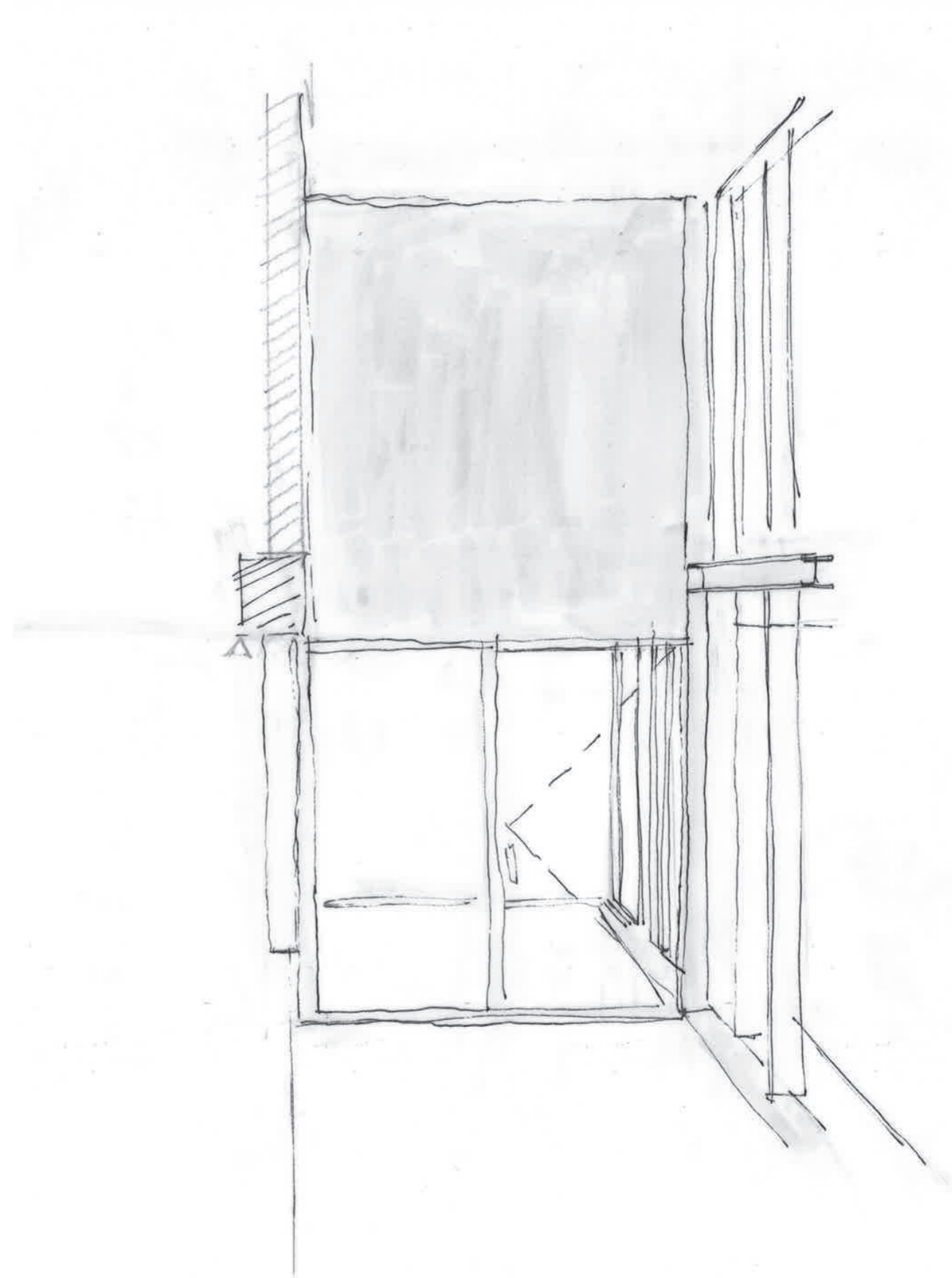








SECTION
Indicating the number of users per floor.

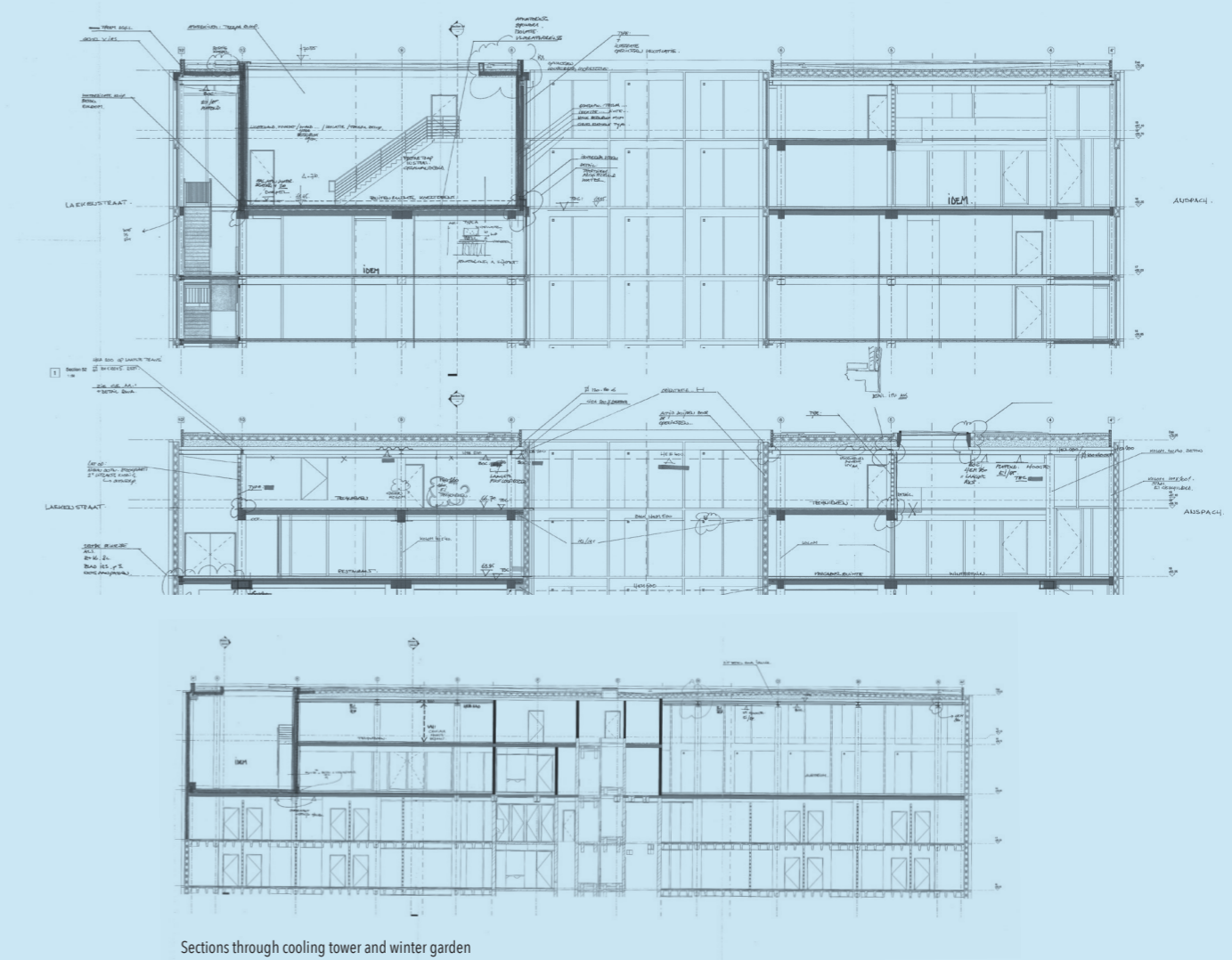


STUDY SKETCH
Study sketch of the double height winter garden, view towards the corner stairs.

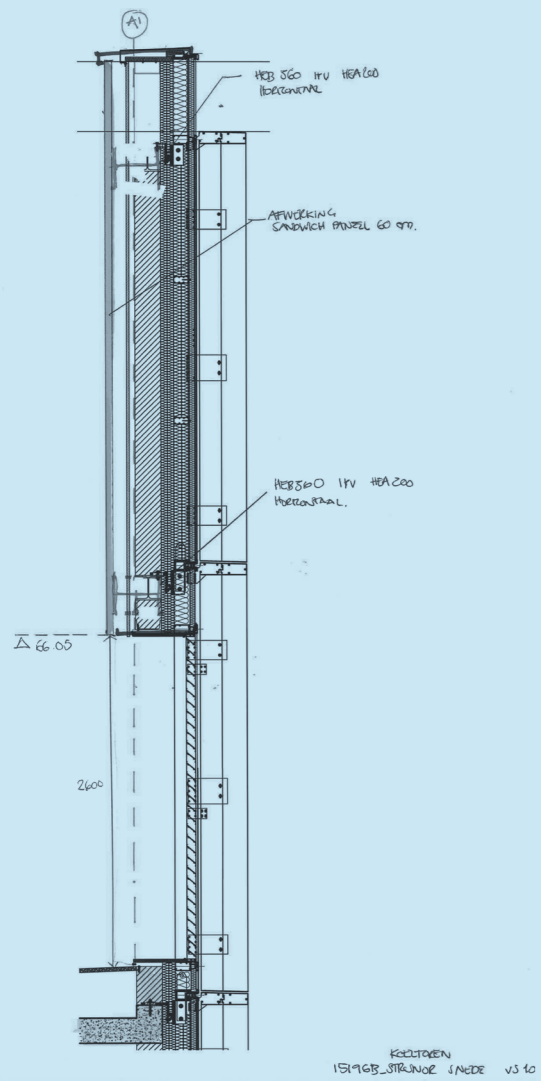
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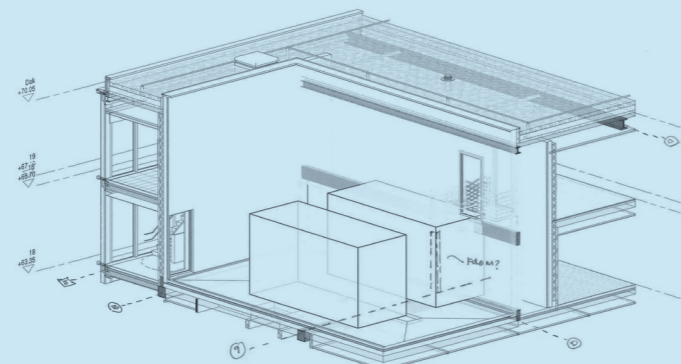




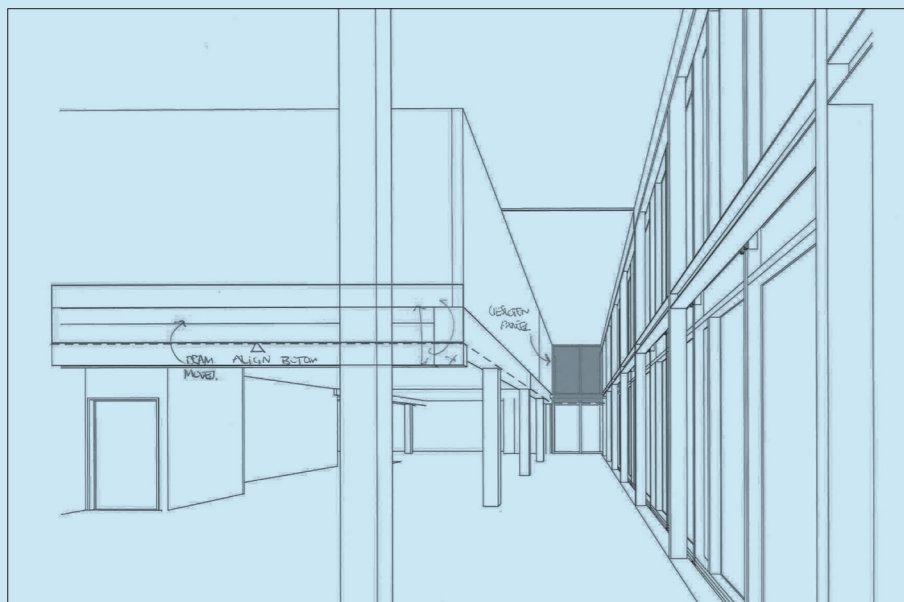
Sections through cooling tower and winter garden



Detail section external wall of the cooling tower space on the 19th floor

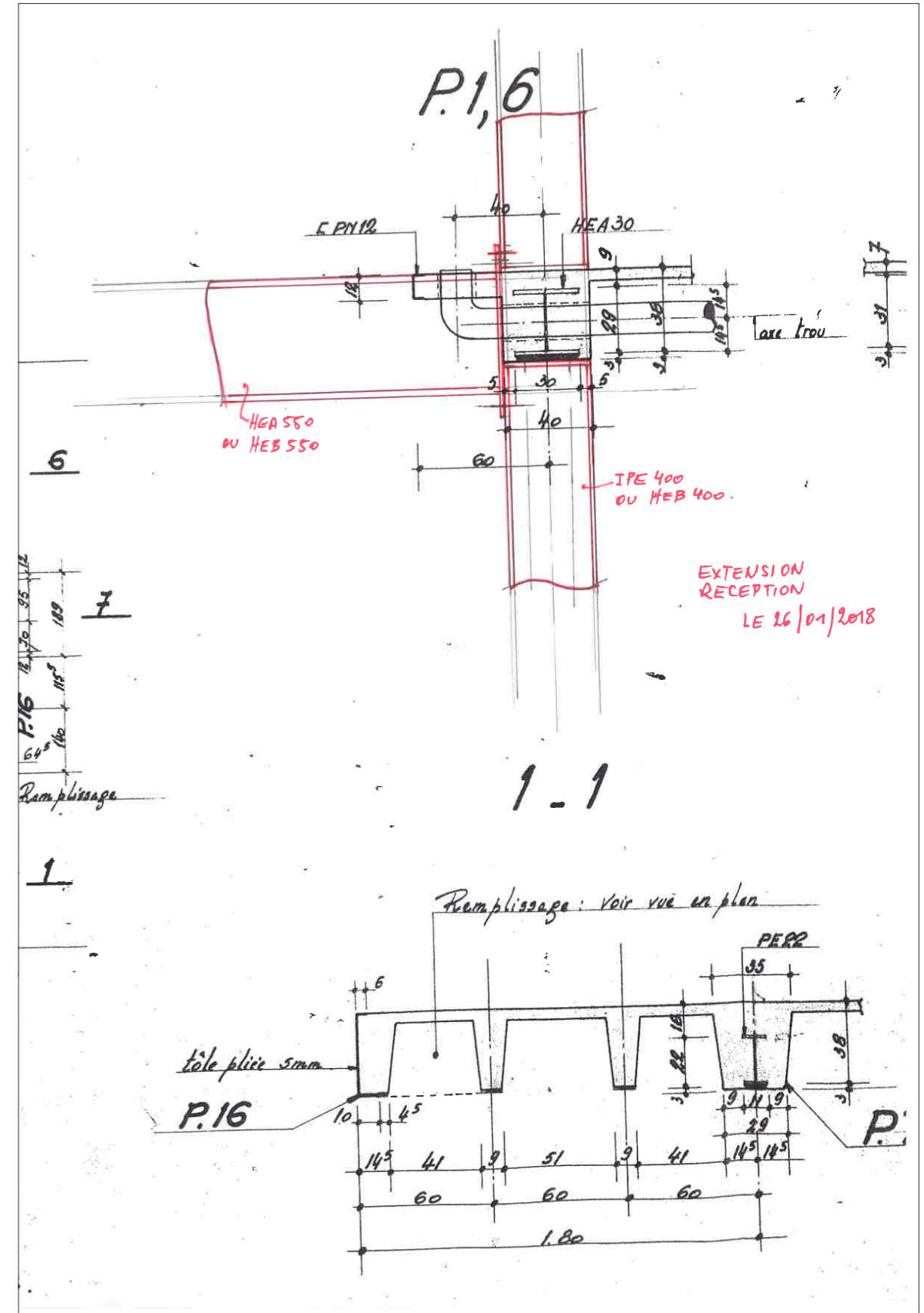
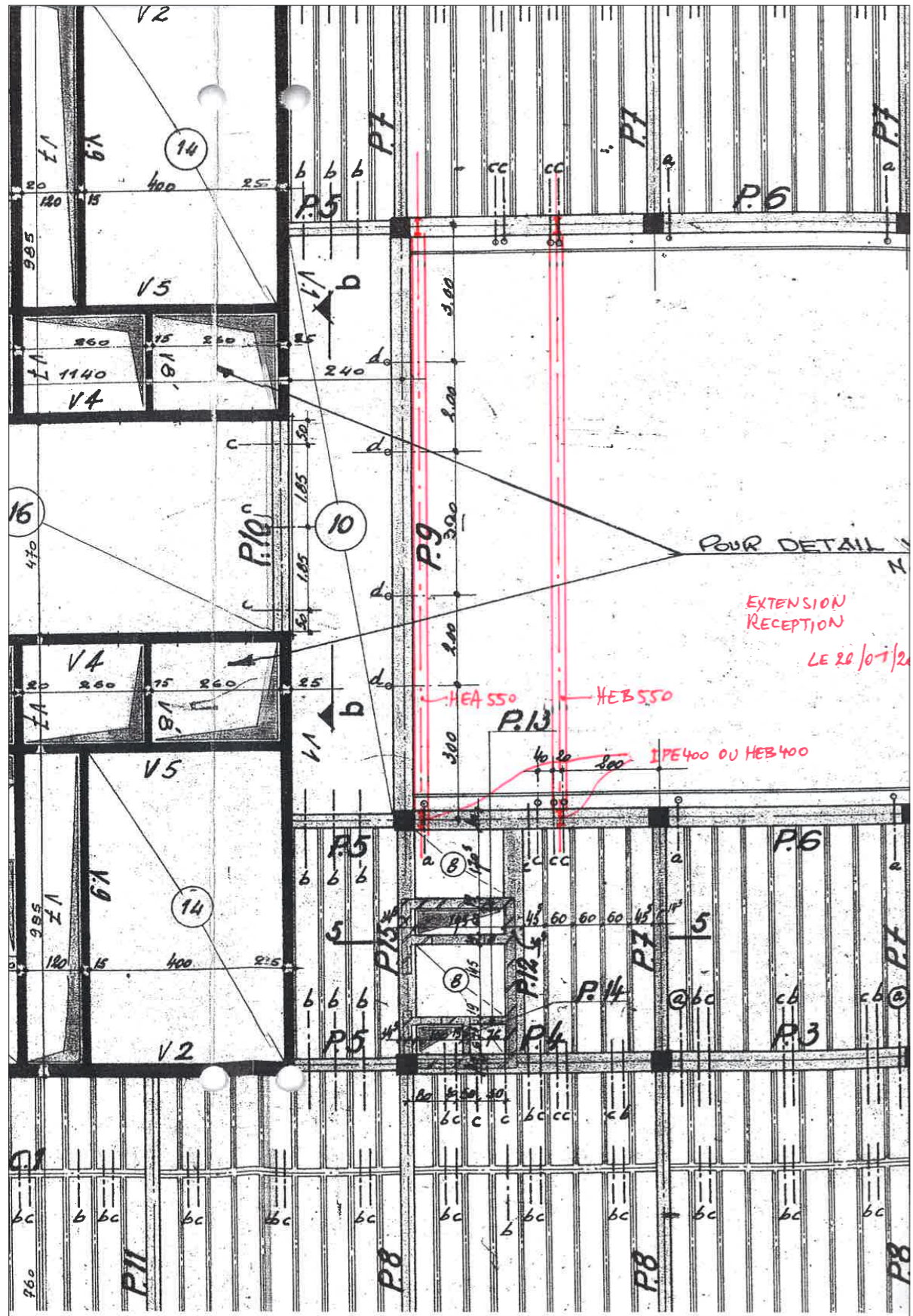


Axonometry of the cooling tower space on the 19th floor



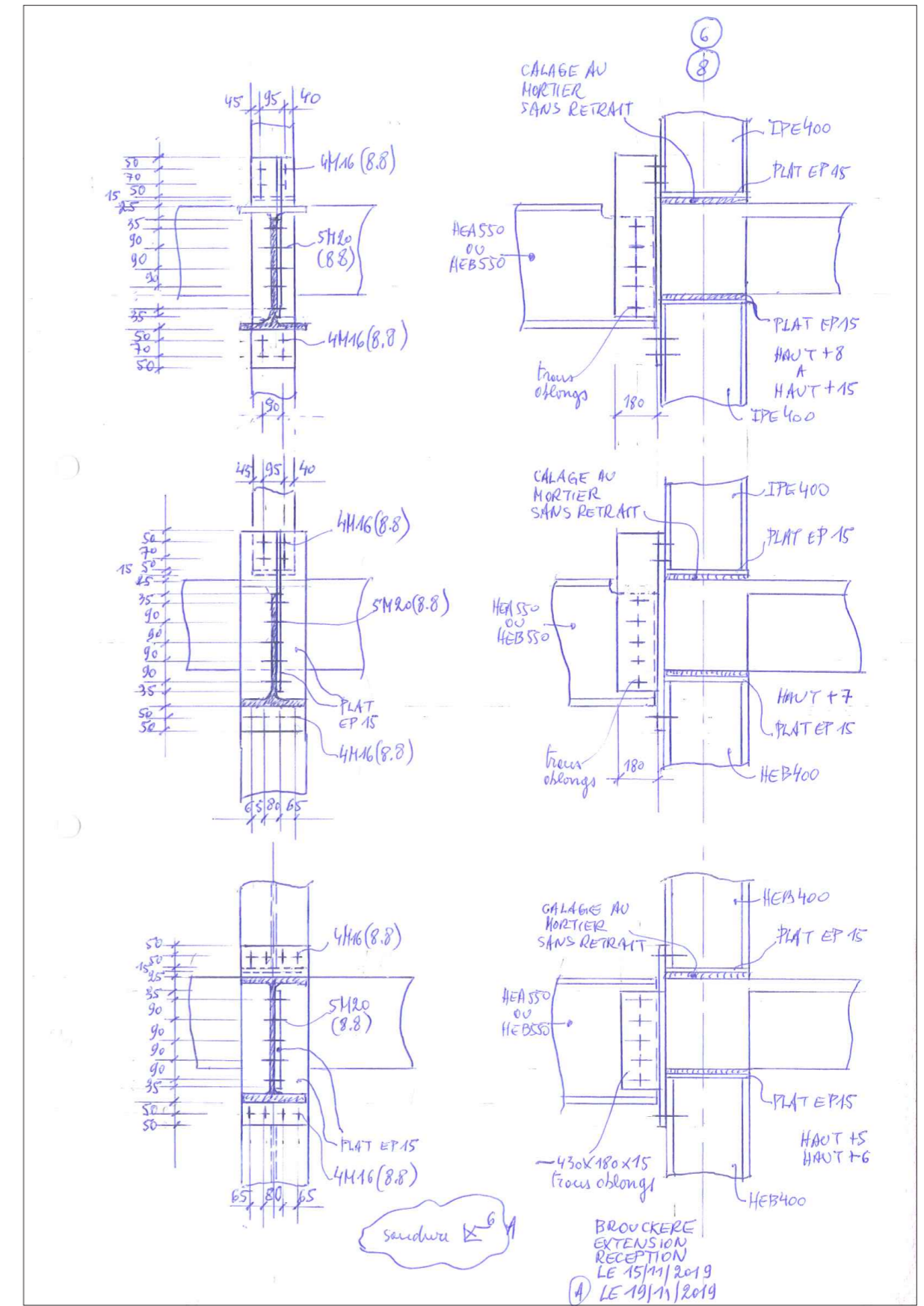
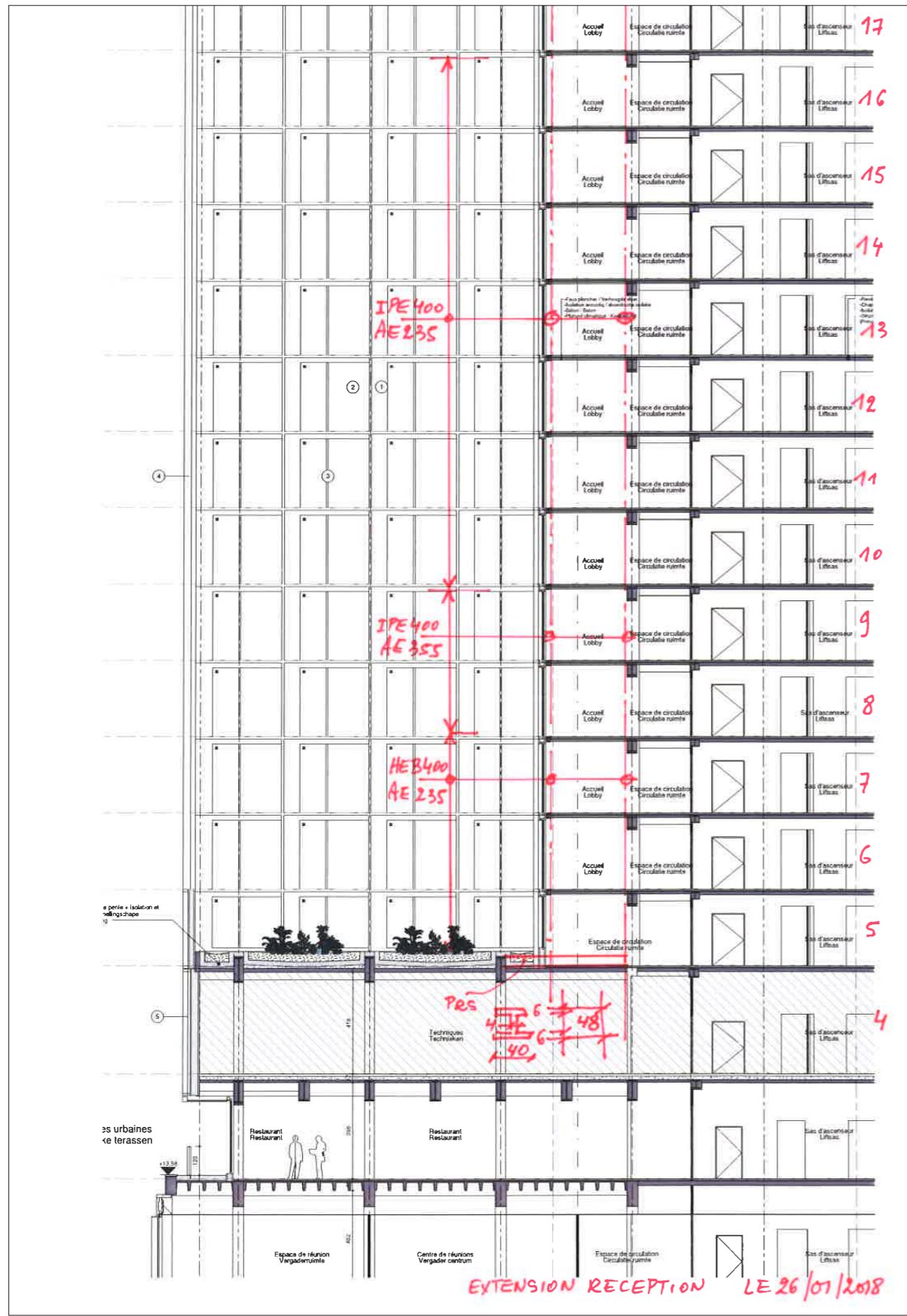
Double height winter garden, view towards the corner stairs



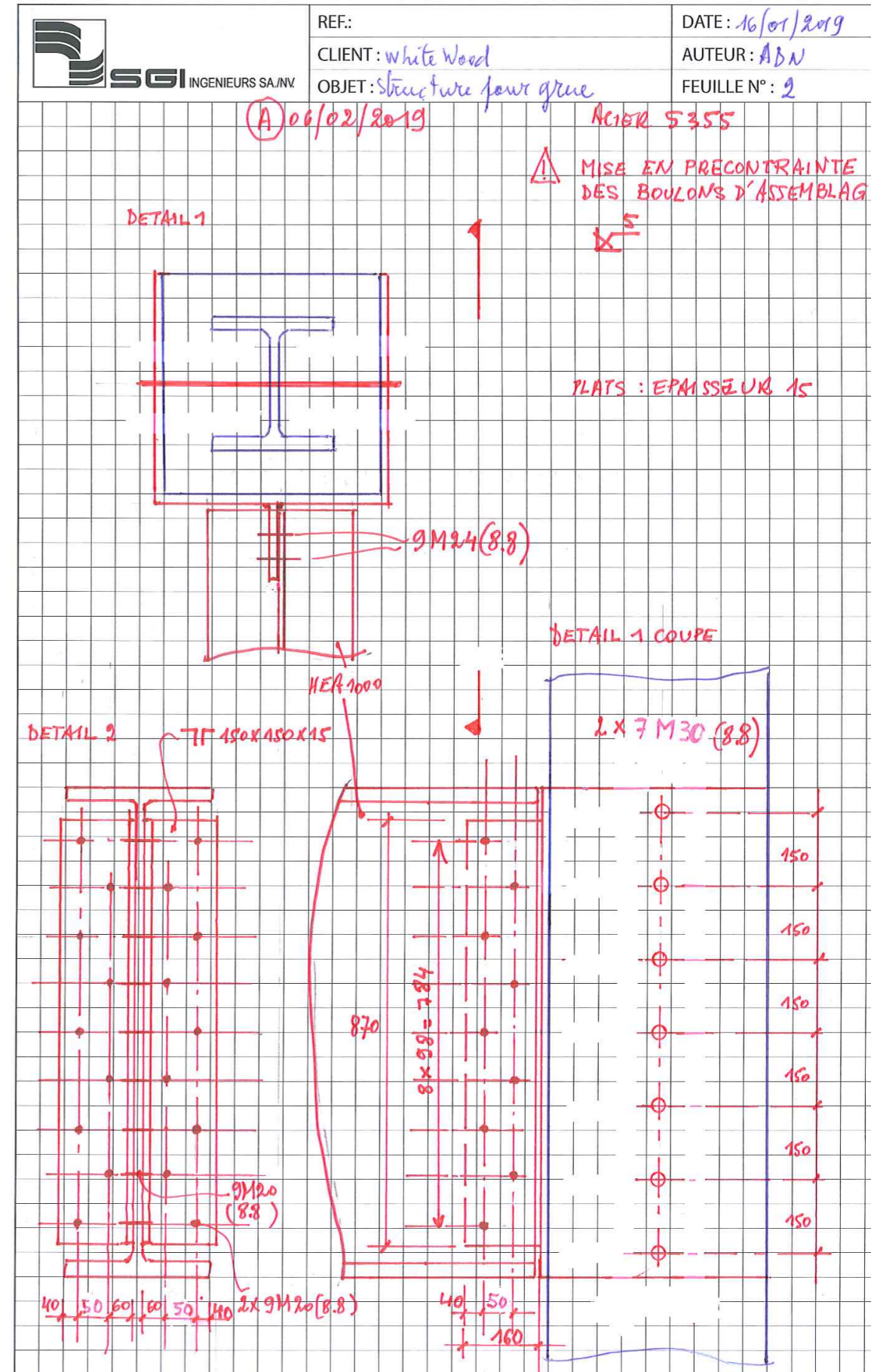
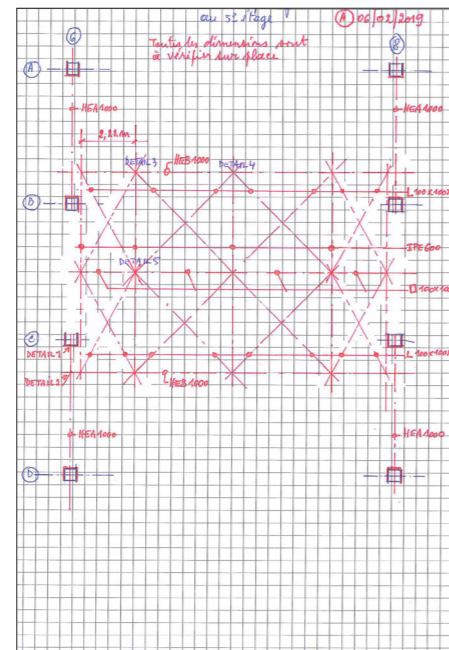
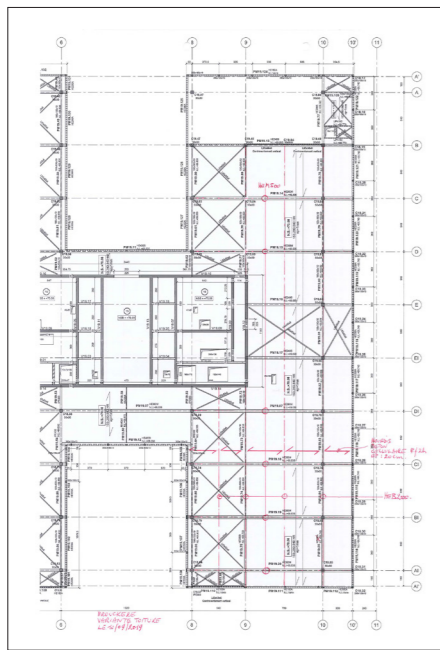
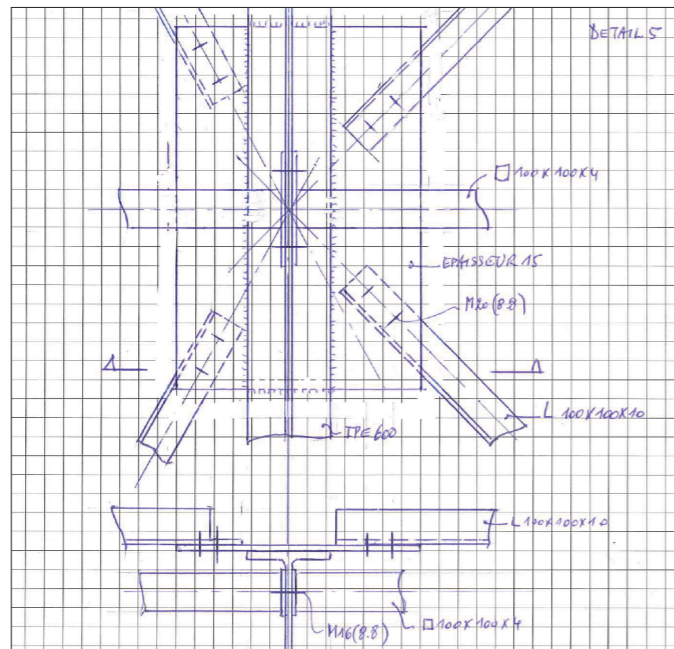
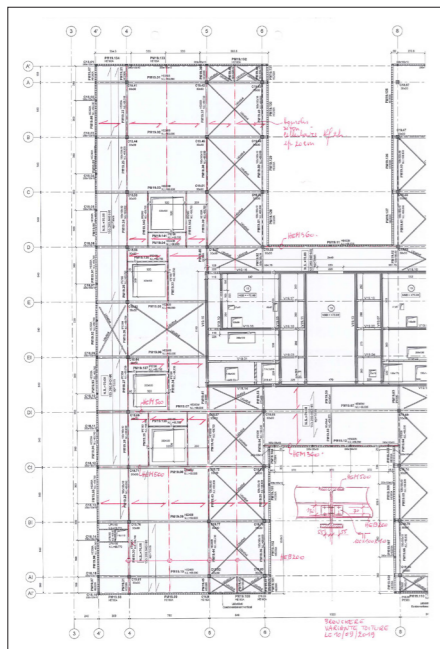


CONSTRUCTION DETAILS

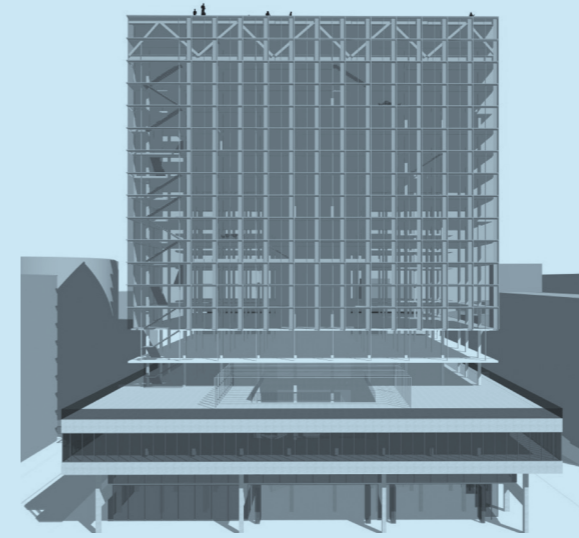
Working sketches from the structural engineer investigating structural solutions working with the existing.



CONSTRUCTION DETAILS
 A new lobby space is forseen in the middle of the H and next to the elevator core.
 The drawings are exploring the position of the new construction in relation to the existing.



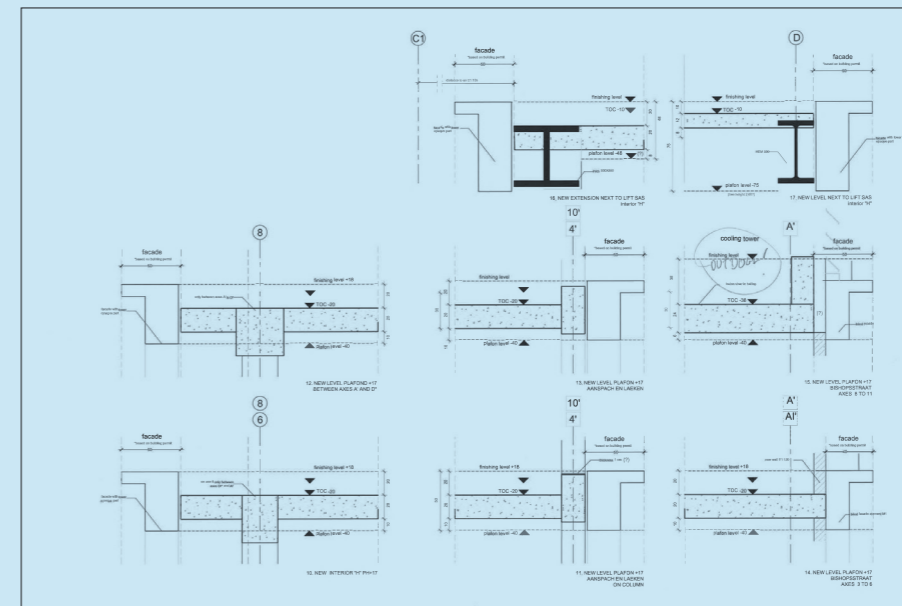
CONSTRUCTION DETAILS
 Structure of the double height winter garden.
 Opposite: temporary structure to support the construction crane that was positioned on the roof of the 5th floor.



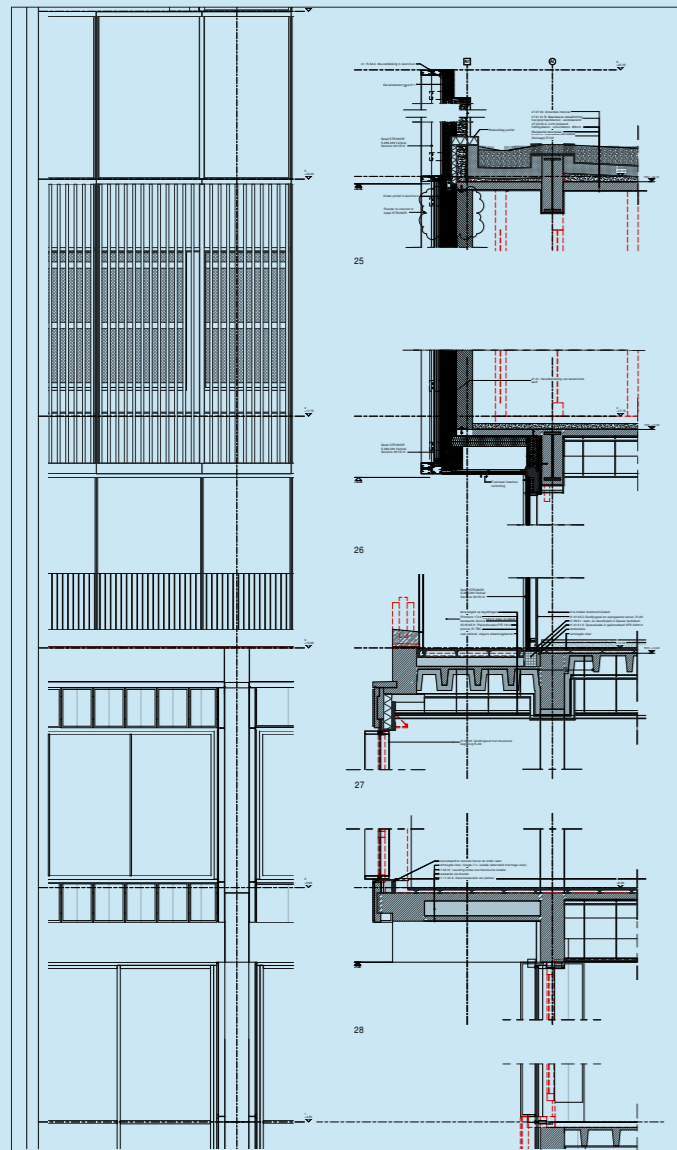
View 1
 Digital models: exploring whether the extension could be suspended on a two floor high truss forming an extra two levels high top floor.



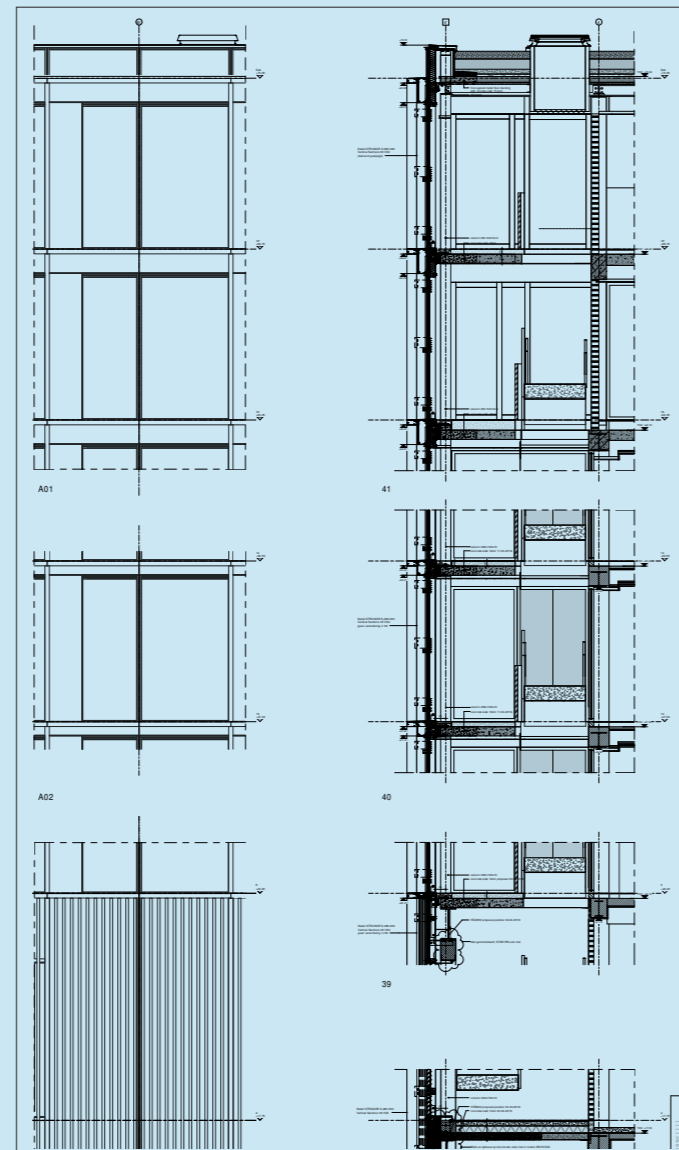
View 2



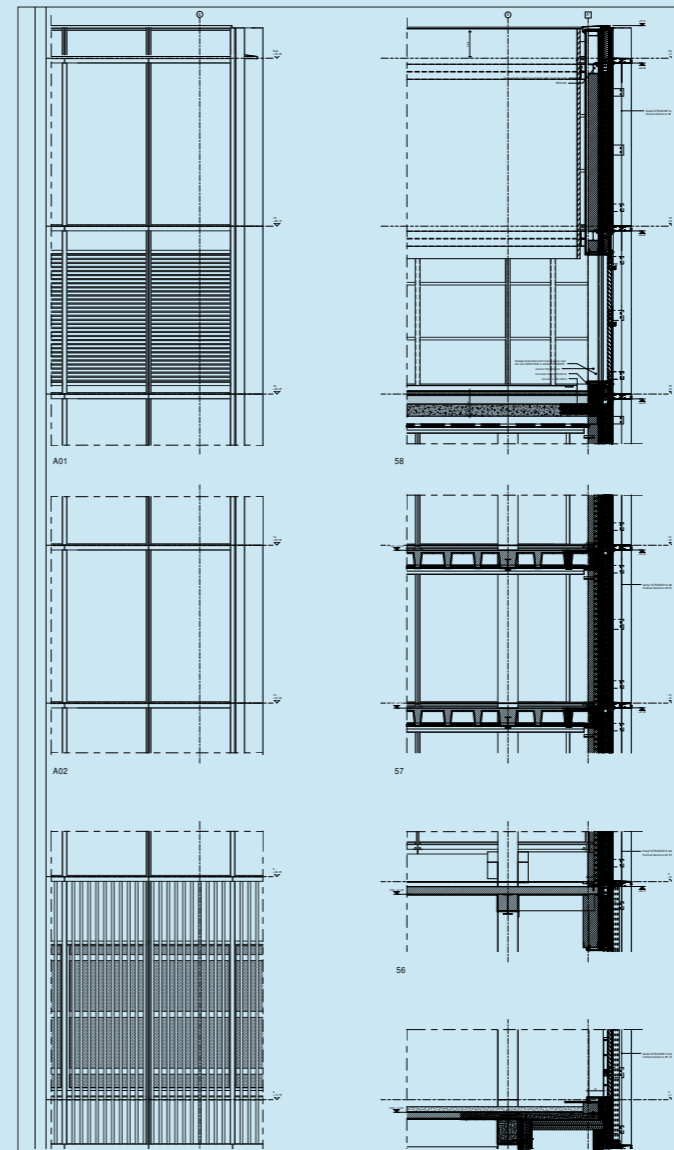
Different case studies showing the poché drawing of the unitised façade in relation to the existing structure.



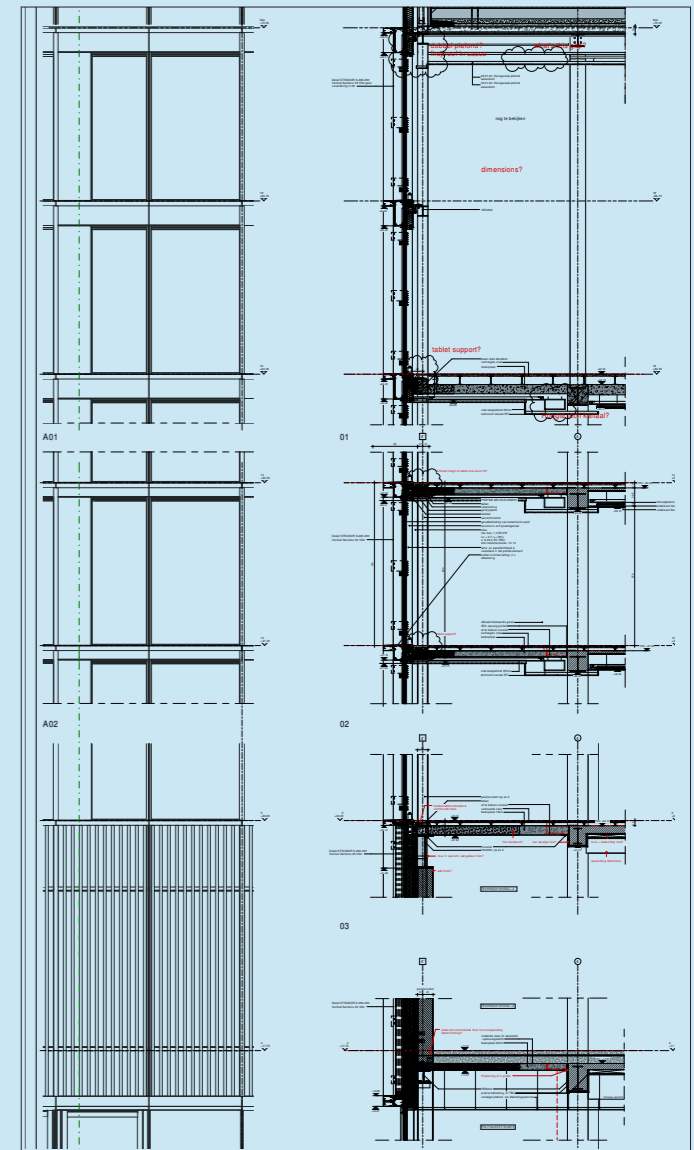
Façade detail drawings of the second, third and fourth floors on the south side



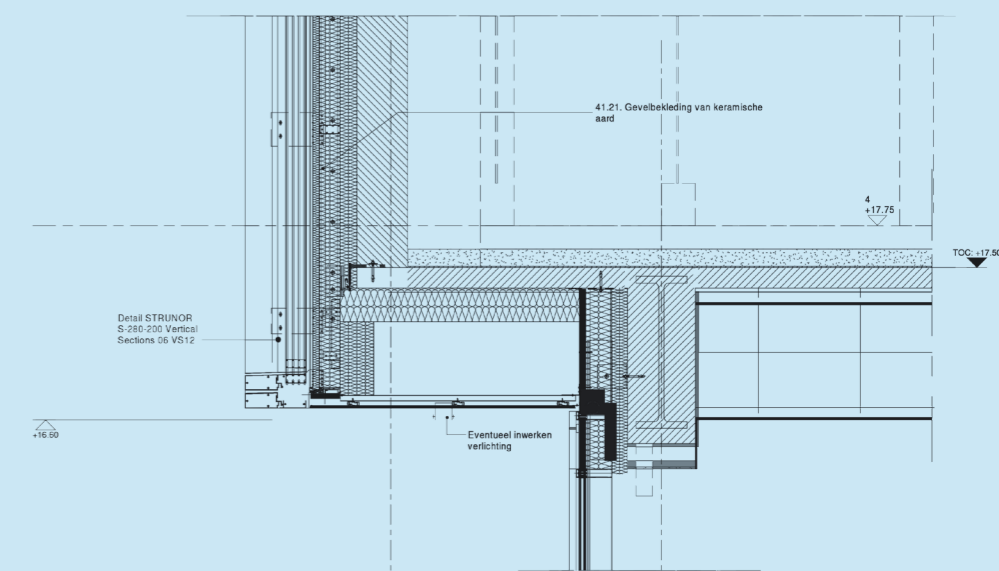
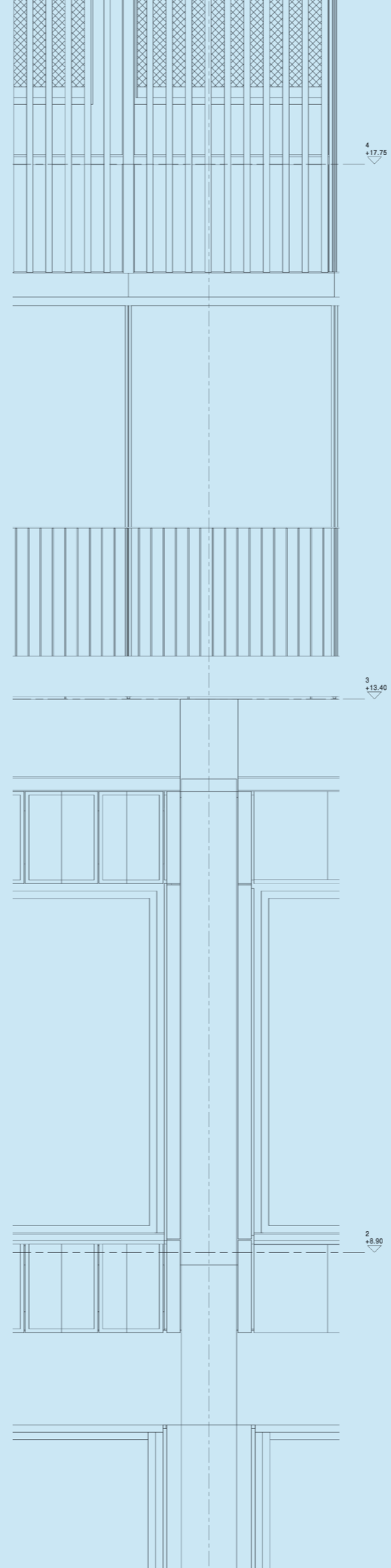
Façade detail drawings of the fifth till the eighteenth floor on the east and west side



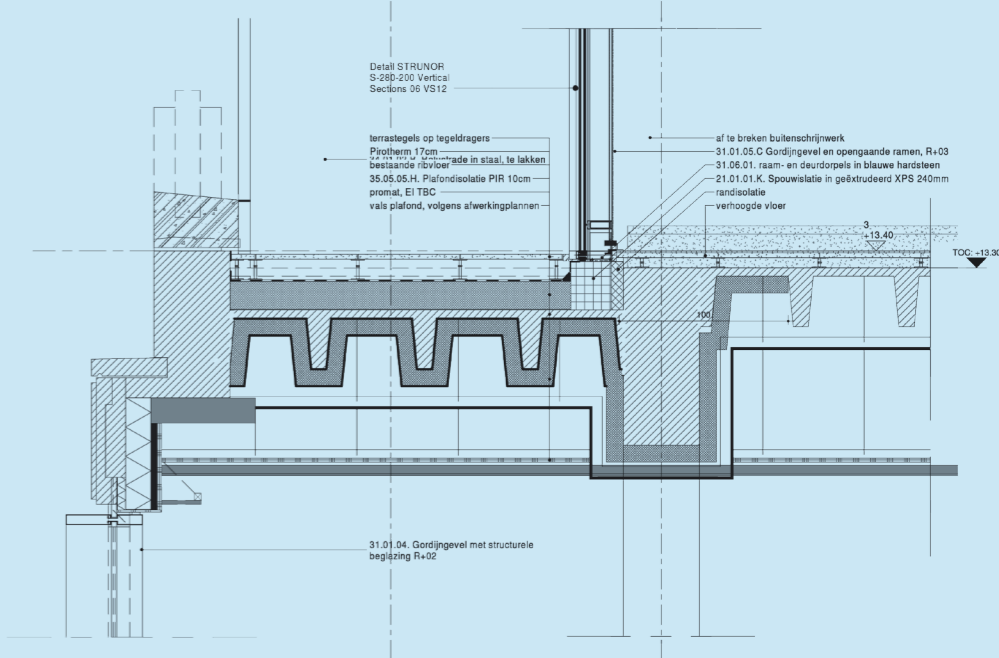
Façade detail drawings of the fourth till the eighteenth floor on the south side showing the cooling tower



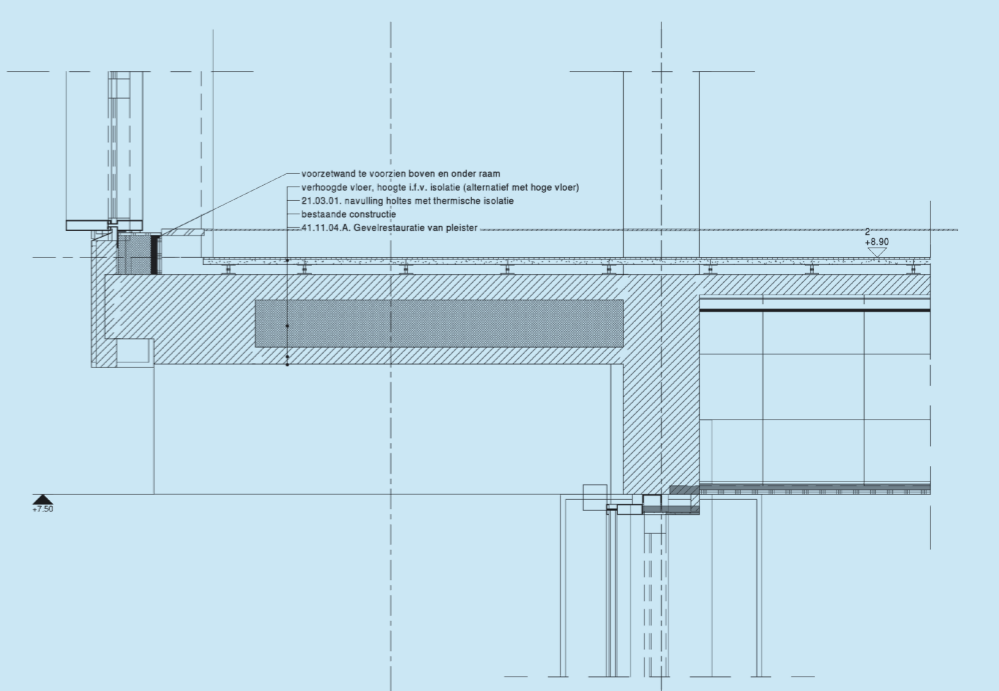
Façade detail drawings of the fourth floor till the eighteenth floor on the east side



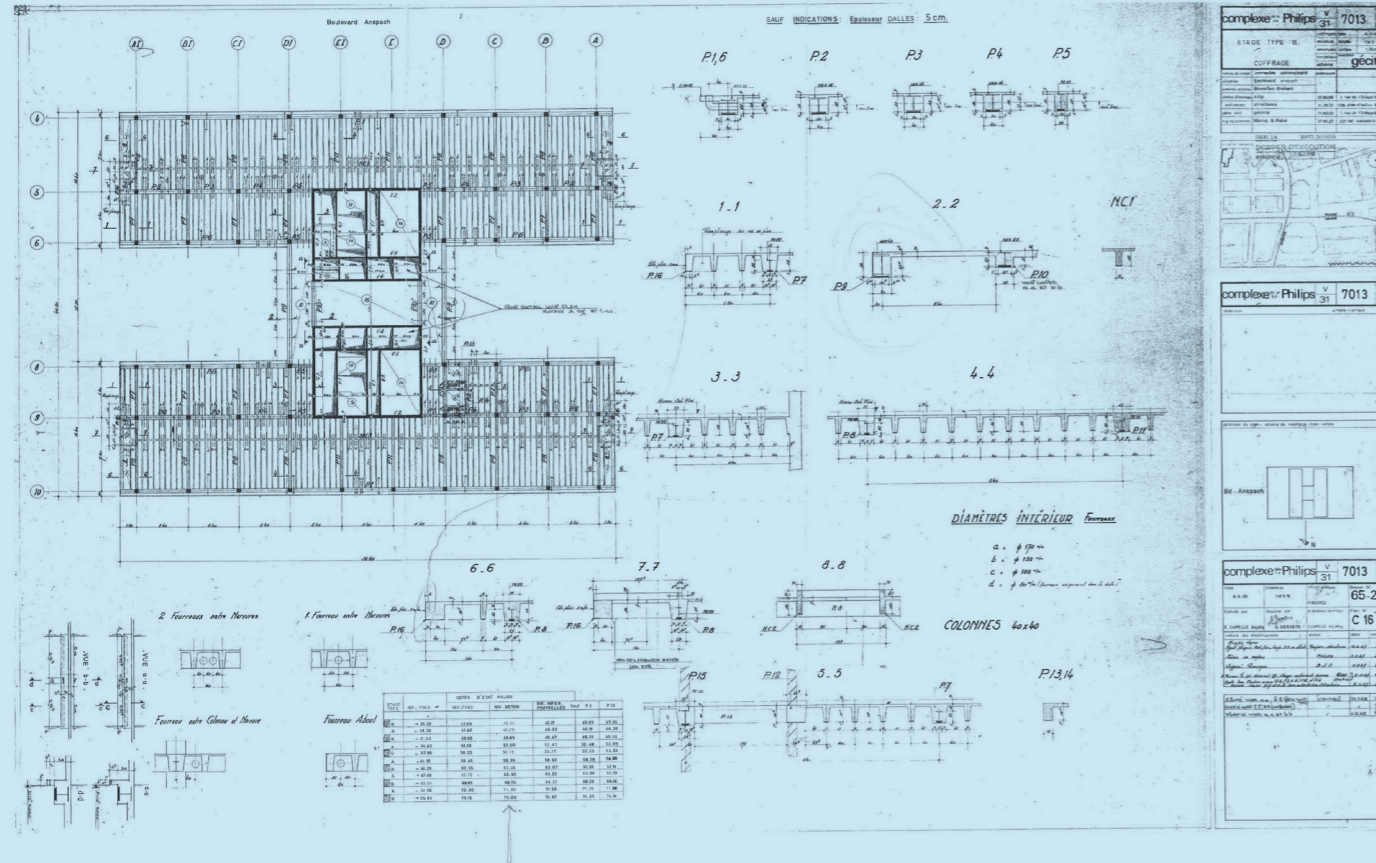
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27



CONSTRUCTION FAÇADE DETAILS
 Vertical section composed as a sequence of details situated relative to each other in the same façade. Detail.



Original 1966 concrete reinforcement plans







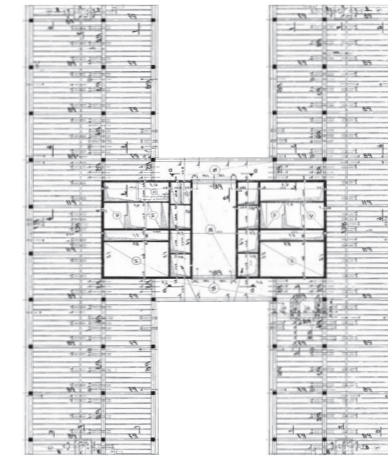


Circularity as a matter of 'harvesting' in three ways

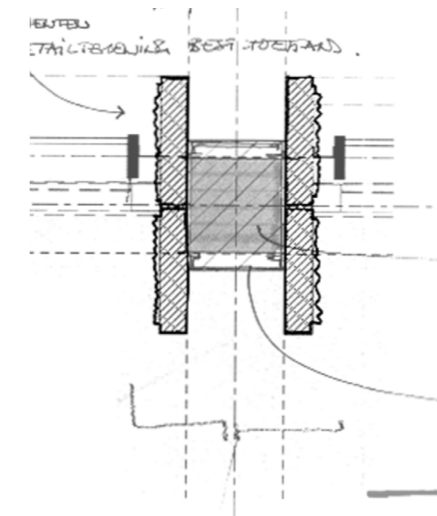
Each year a substantial amount of re-usable materials available from construction sites in Brussels becomes 'available'. But because the demand for these reused materials is very low, almost nothing is reused and most is destroyed and treated as waste. Demand is low, partially because projects of a certain size are not seen and hence not considered as potential receivers and clients for these materials.

The reconversion of the Philips tower into MULTI aims at addressing this by becoming a precedent and pioneer when it comes to reusing the project are a form of reuse. This is on top of reusing the existing volume and materials from a large-scale tertiary building. For this purpose, a clear and concrete ambition was stated: on top of keeping the existing structure and volume as much as possible, at least 2% of all new materials have been reclaimed by urban mining. This may not seem much, but on a project of this scale, it's unprecedented.

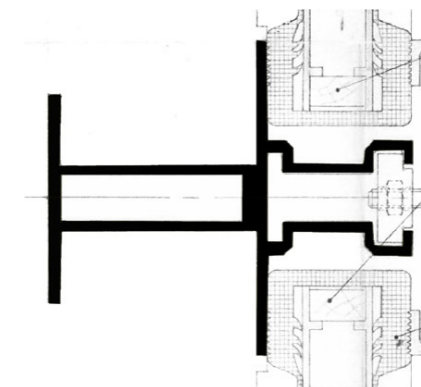
To do this, three modes are applied. Firstly, the building is considered as a source for harvesting materials for reuse in situ. For example, some of the bluestone was recovered to clad the newly created columns. Another is the repurposing of the aluminium H-shaped elements that form the façade of the existing emergency exit and technical floor. These elements are up-cycled as interior balustrades in the atrium. The second mode is for recovering materials and making them available for reuse in other projects at other locations. This is the case for some of the bluestone, some technical equipment, doors, ceilings, appliances, etc. And a third mode is to consider the project as a receiver of materials harvested from other projects. Predominantly they would come from other tertiary buildings in Brussels. One example is the natural stone floor from Belgian designer Jules Wabbes. But the project will also repurpose natural stone from the 't Zand square in Bruges.



1



2



3

- 1 H-shaped floor plan tower
- 2 H-shaped column detail groundfloor
- 3 H-shaped façade detail tower

A SCALE INVARIANT DESIGN

Working with the existing building revealed that the letter H was consequently used to develop and detail the project: to form the plan, the detail of the columns and the design of the façade.

What we talk about when we talk about public interior

Asli Çiçek

Public space versus private space. It's a dichotomy that is perhaps the most frequently introduced contrast in debates surrounding architecture and architectural education. Hereby, a public space is understood to be an accessible space in the communal life. A public space in its ideal form is open to all members of society; it is a space of equality, and one that's devoid of censorship or specific requirements for entry. Yet, as public space is not the accumulation of all the leftover areas between the private spaces in a built environment, there are nuances. The nuances start with the differences between exterior and interior public spaces. A public interior implies a 'door'; an element that is a threshold through which people must pass. It is not a park or a square where the citizens would stroll occasionally. As noted in *The Public Interior as Idea and Project* by architect and educator Mark Pimlott, 'The interior is that space that architecture makes, which is at once set apart from the world and its midst'. Public interiors are, in this regard, even more specific; they are in the midst of the urban life, but to enter them, one often needs a reason.

They are not coincidental spaces, in fact, their development cannot be seen as independent from the modern city, which 'emerged along with the development of new commercial and industrial institutions in the course of eighteenth and nineteenth centuries, generated new types of buildings for public administration, jurisdiction, education, discipline and consumption. It was in these buildings that the concept of the interior, as the embodiment of a new kind of public sphere, materialised,' as argued in the editorial of *OASE #101, Microcosms issue* ².

Undoubtedly, the public sphere is subject to societal changes, hence, to the advancing of time. Contemporary public interiors in Europe bear traces of the evolution towards democratic life over three centuries. This can be observed clearly in changes to the types of administrative and cultural buildings built from the end of the eighteenth century to the beginning of the twentieth century. In these buildings, displaying prosperity and progress, as well as symbolising power and the ideology of a state or government, played important roles. Aspects like nation building, progress, and equality opened public buildings to the citizens.

The architecture that derived from these ideas delivered numerous carefully designed administrative, educational, and cultural buildings, which the citizens would appropriate with pride, or in the case of less-free societies, consider to be oppressive spaces. In either case, use of such buildings by citizens became more and more occasional. Also, infrastructural constructions, such as train stations, airports, and bus terminals, gradually joined the list of public interiors, where people would just walk through, linger, or stay a while before taking a means of transport.

Until few decades ago, all these public spaces were largely financed by states and governments to provide services for the community. However, from the second half of twentieth century, other forms of buildings with private ownership entered the field of what a public interior might be. Shopping malls, for instance, became a point of debate as Rem Koolhaas reflected upon in his essay *Junk Space* ³ from 2002. These easily accessible interiors where the public floats through in vast numbers gradually became unavoidable in the architectural discourse. Nonetheless, they still remain difficult to categorise as public spaces today. The fact prevails, though, that these grey zones make the most accessible interiors for a large public. Their thresholds are lower than those of a museum or an administrative building since people can freely enter them without being asked why they are there (even if consumption is an implicit condition, nobody can force the occasional shopping mall flaneur to purchase an item). But, is this lower threshold enough to make a public interior more public than any other 'traditional' public space with sharper definition? What do these kinds of public interiors contribute to community life? Aren't they too vague to be considered a shared societal space, or in other words, shouldn't easily accessible interiors in the urban life be categorised as public interiors by default?

A discussion around these questions implies the definition of what the 'public' does in a public interior. Consumption is the most shared activity amongst people, yet it does not contribute to a feeling of being part of a society. It is an act of an individual or a small group. Also, interiors intended for mainly material consumption are not designed for the society; instead, they are designed to attract people to consume what is on the menu or in the displays. The public might not have to pay to enter these interiors, but that fact doesn't change the commercial character of malls, for instance.

On the other hand, a cultural institution like a museum is perhaps too quickly considered to be a public space. To enter it, a ticket must be purchased, and it's implicit that the visitor has an interest that requires concentration or motivation for learning. Interiors of infrastructural buildings are rather a mix of both: they provide a public service in an interior surrounded by commercial places. In the case of a train station, for instance, many people use the halls as passages to move through, and the circulation areas become places to stay, wait, or meet for an appointment. Next to being functional, such an interior also has to provide safety by applying basics of architectural design, such as creating good lighting conditions, using durable materials, and conceiving generous spaces that invite and embrace users. All these aspects contribute to the evident appropriation of infrastructural buildings in urban conditions. Even if these buildings are no longer owned by a state alone, their design is concerned with qualities that are more than just commercial.

In Philips tower in the centre of Brussels, the plinth of the edifice carries the potential of becoming an evident place for a public interior. As a black volume, carried by a three-storey-high plinth, its presence has been unavoidable since its construction in 1969. The documentation in this publication shows the extensive changes that have been made to the building, including its name becoming MULTI tower. These changes start with the transformation of the black, closed façade to a white, transparent one. This alteration is part of the overall intention of 'opening' the building towards its surroundings. It also relates strongly to the altered urban condition around the large block. Until the recent conversion of Boulevard Anspach to a pedestrian zone, the building was, in some ways, stuck between four roads. Its plinth was defined by an arcade on one side, interrupted by a ramp on the other, with shop windows on the third street, and the fourth side providing access for vehicles, deliveries, and people. All without a harmonious concept. The renovation aims to clarify and improve the building's situation. It takes the urban condition into account and uses the street level to connect to the streets surrounding the building. The materiality of the pavement is continued through the building and the interior of the tower offers itself like a square to cross from Anspach Boulevard towards Place Sainte-Catherine. Public and private city gardens located in the generous plinth of the edifice aim to invite the residents, as well as visitors, to stay in this accessible zone. The maximum possible reuse of existing materials from this relatively young building makes the renovation sustainable and responsible. As the Philips tower fits into the architectural heritage of the city, the project also confronts the question of how to deal with Brussels' existing architectural mass and the long-term consequences of modernist movement, albeit not in a way that's considered a successful example. Opening the building both figuratively and literally towards the city and its citizens aims to achieve the necessary improvement in a way that does not destroy the construction.

With these noble intentions, the renovation of this high-rise promises a new point of attraction in Brussels' city centre. However, between making the building transparent and open, and creating a public space inside it, there are some aspects that must be carefully considered.

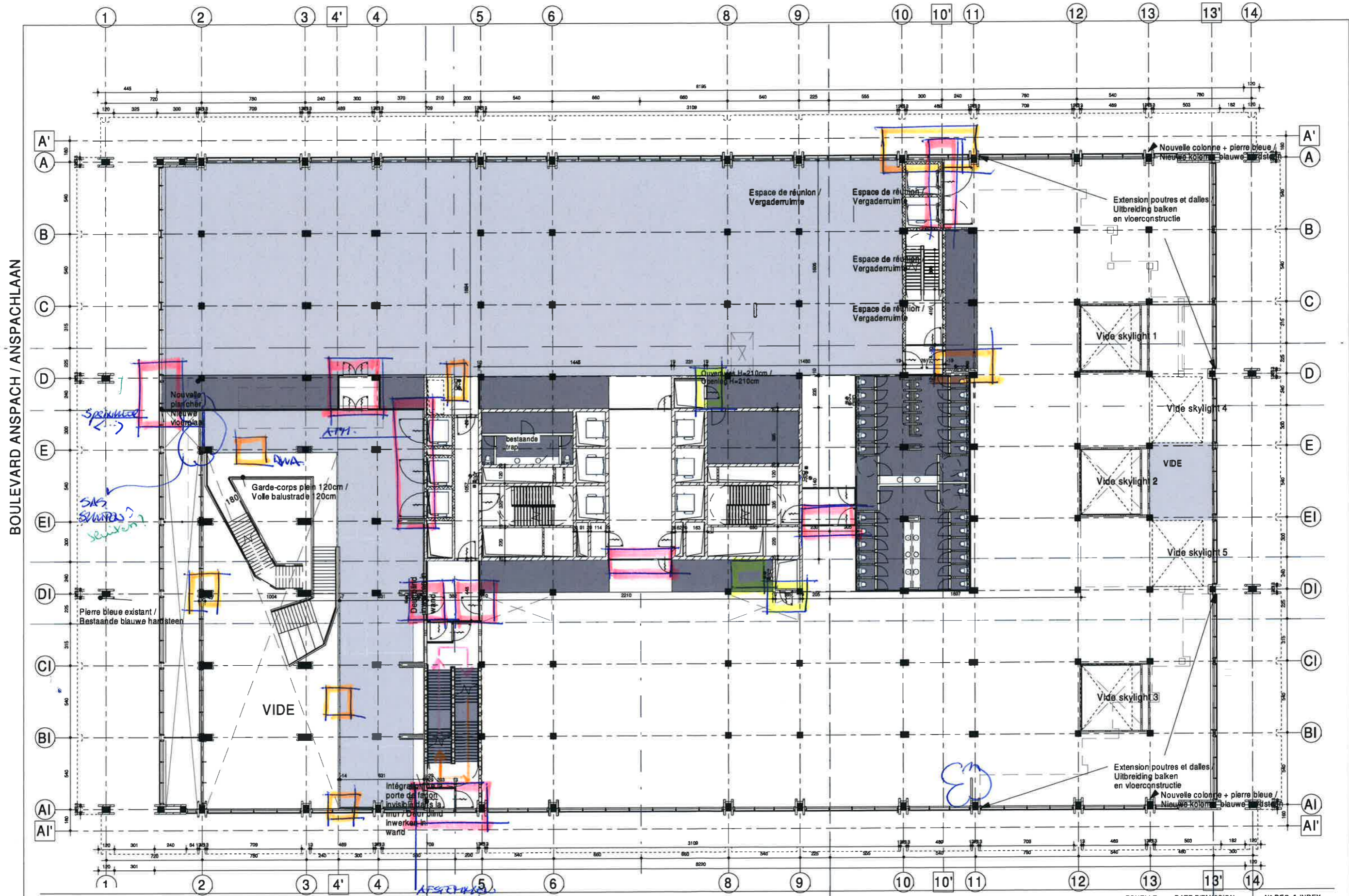
The public space needs a strong idea behind it that can be appropriated by citizens. The broad accessibility of a public space, in this case the public interior, is certainly the first step to removing such barriers. Without a doubt, the people of Brussels will appreciate this feature of MULTI tower. Yet, one question remains: what will be offered after entering the public zone? The renovation of the tower foresees an urban platform on the third level that would work like a lower balcony watching over the city. The sheer architectural experience, however, won't be enough to make a public space in the exterior nor the interior. People truly appropriate architectural space only when they can fill it with life. In other words, the existence of a building alone, as transparent and open as it might be, will do only half the job. A good example is the stairs of the Bourse Building, a five-minute walk from MULTI. Even before the pedestrianisation of Anspach Boulevard, these stairs were a popular meeting spot for appointments as well as for vagrants to hang around. The same stairs also serve for authorised political demonstrations or as a spontaneous tribune for a music performance. As an architectural element—one that is not serving its original purpose of leading to the interior of the building being that the Bourse is under renovation—the stairs offer a base that people can use without any programme assigned to it. The life surrounding this space follows different dynamics, shifting between contradictory activities. It involves gatherings as well as manifestations. It's exactly this broadness of possible events that transforms a building in the centre of a city into a shared space for the citizens. To reach the status of an exterior public space in an interior is not easy, and to compare an interior with an urban space is perhaps not fair. Yet, the public interior functions when it offers the unforced generosity a public exterior presents.

Political demonstrations in MULTI's urban terraces or accessible interiors might not happen very often, but one can envisage activities for the community, organised by the city, as well as inhabitants gathering on its urban balconies or in its ground floor spaces. This requires a solid relationship between the city's administration, the private owners of the building, and the citizens themselves. Only such a commitment will match the architectural ambitions of the MULTI project.

¹ The Public Interior as Idea and Project, Mark Pimlott, Jap Sam Books, 2016, back cover

² OASE journal for architecture, issue 101, Microcosms: Searching for the City in Its Interiors, A. Çiçek, C. Grafe, S. Mandias, D. Rosbottom (eds.), 2018, Nai10 Publishers Rotterdam, p: 2 - 21

³ Rem Koolhaas, Junkspace, October, nr 100, 'Obsolence', spring 2002, p: 175-190



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AFSCHRIJVEN
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SUJET
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DATE D'EMISSI
UITGIFTEDATUM
06-11-2017

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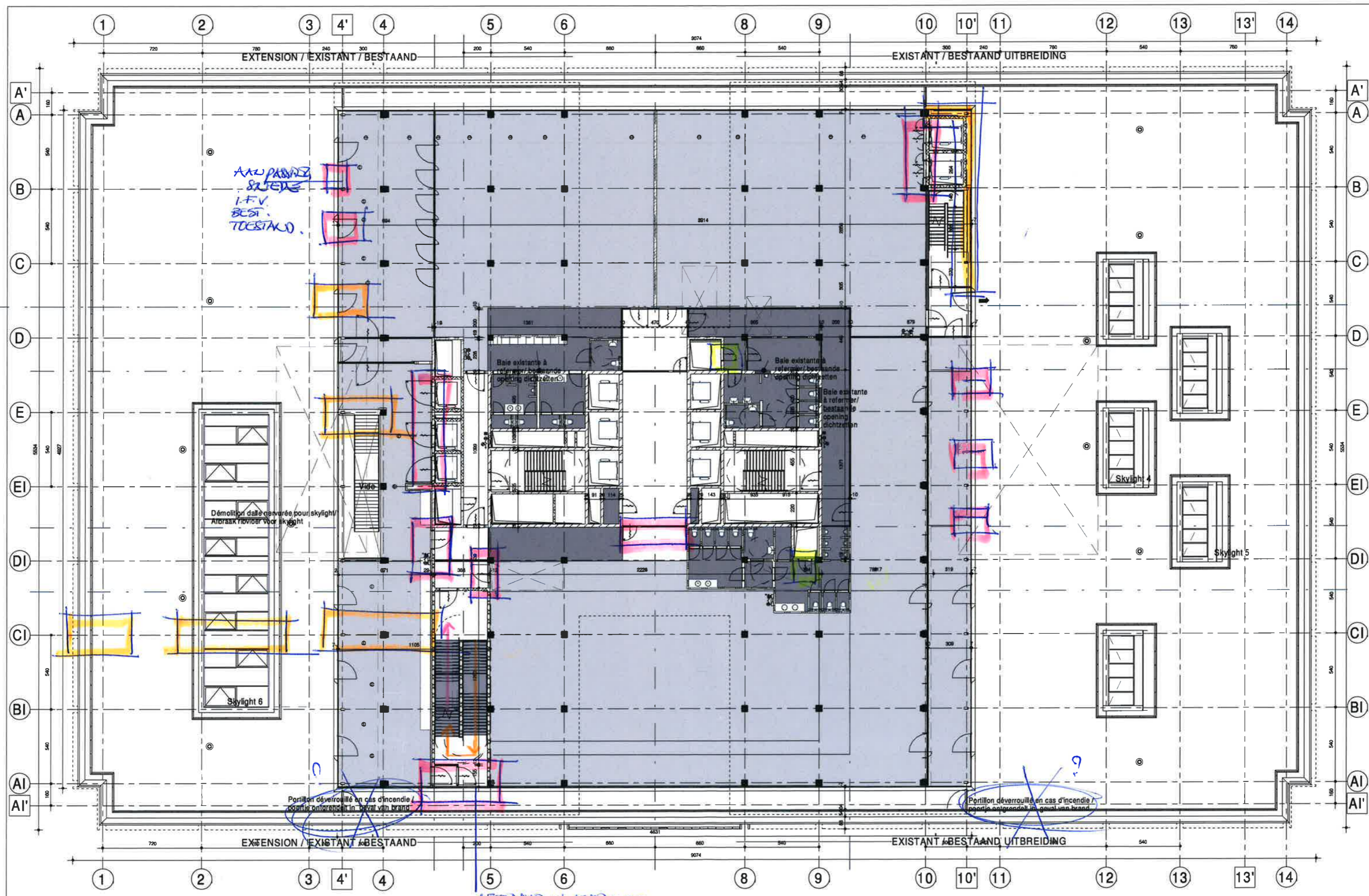
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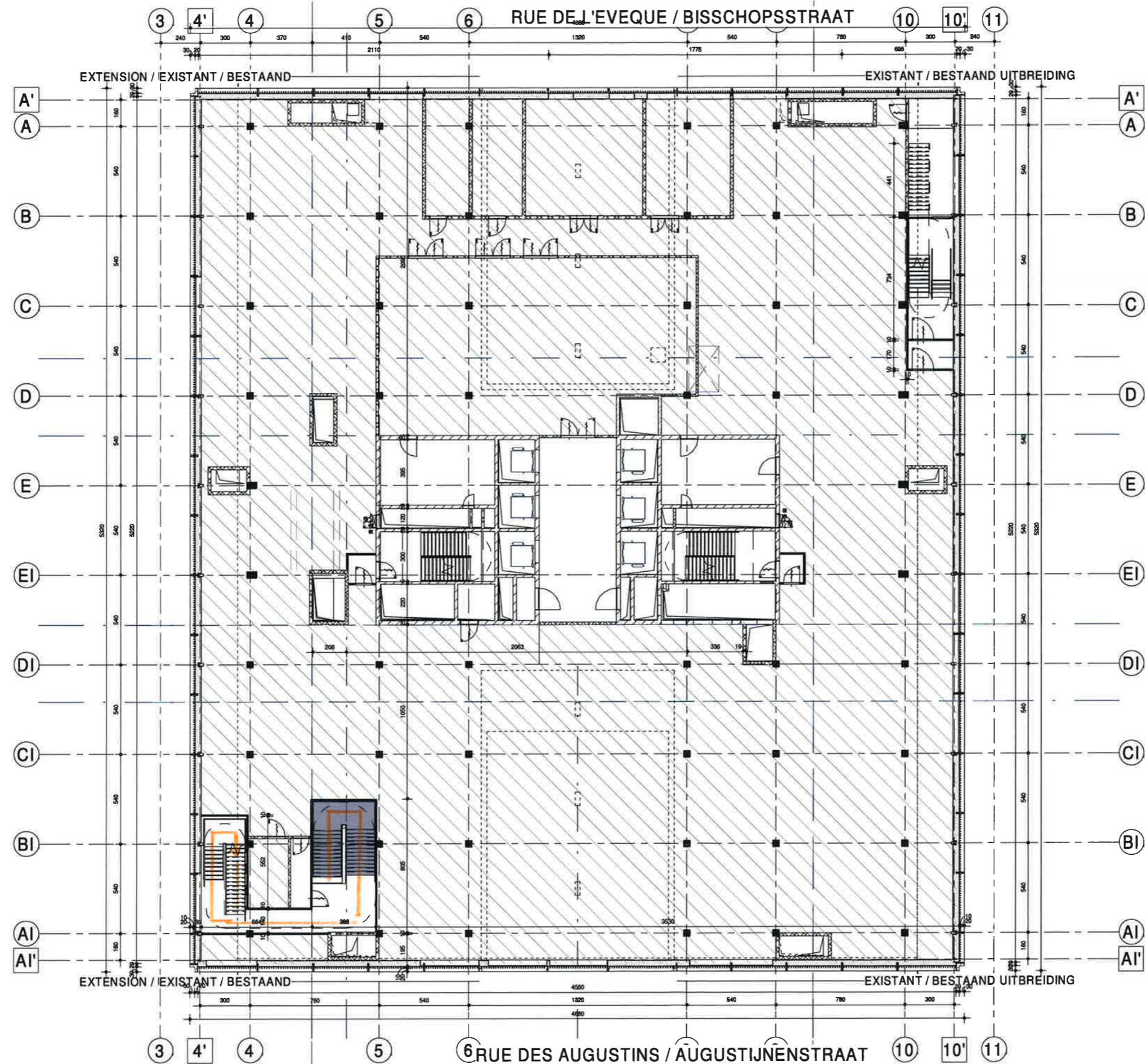
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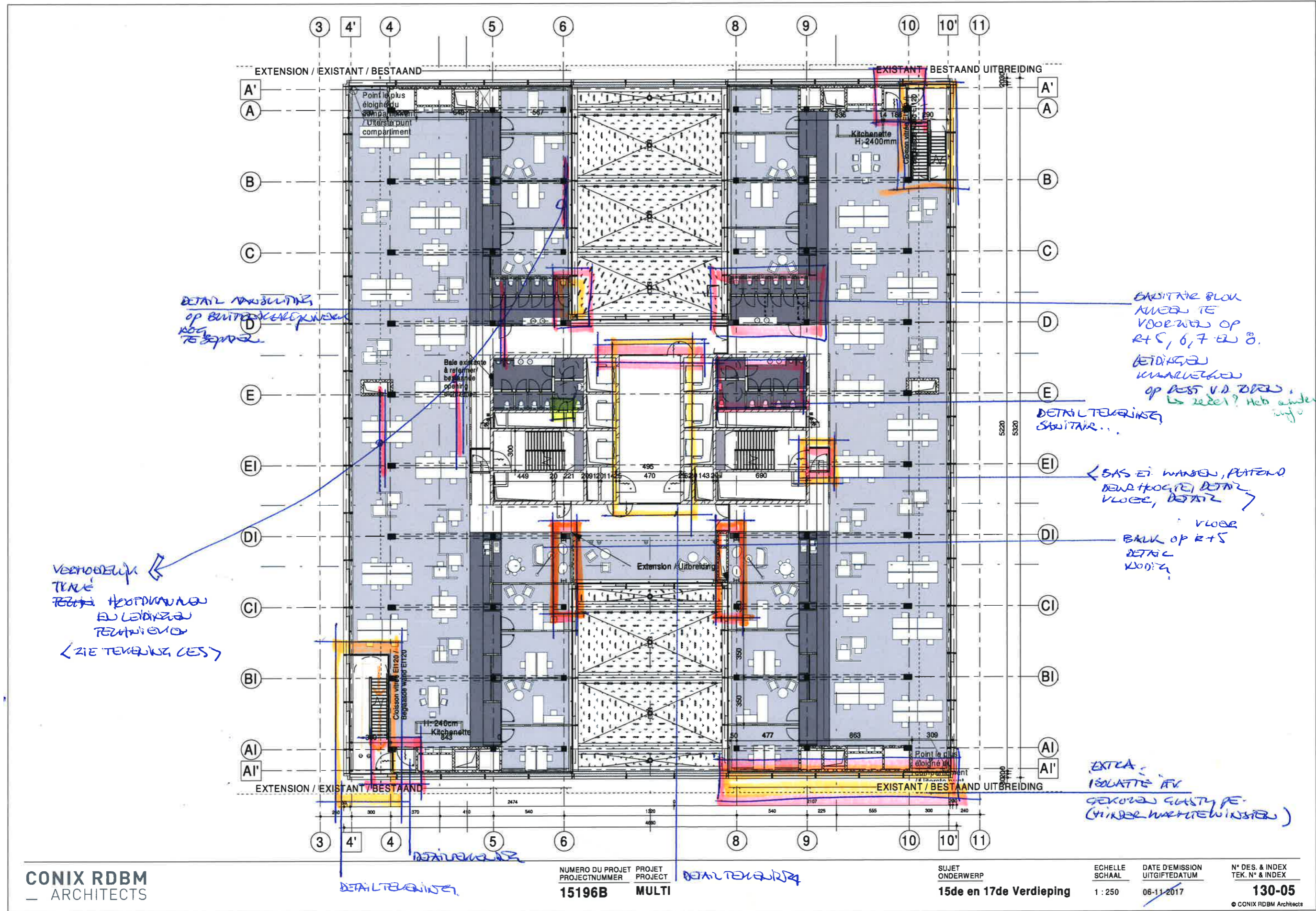
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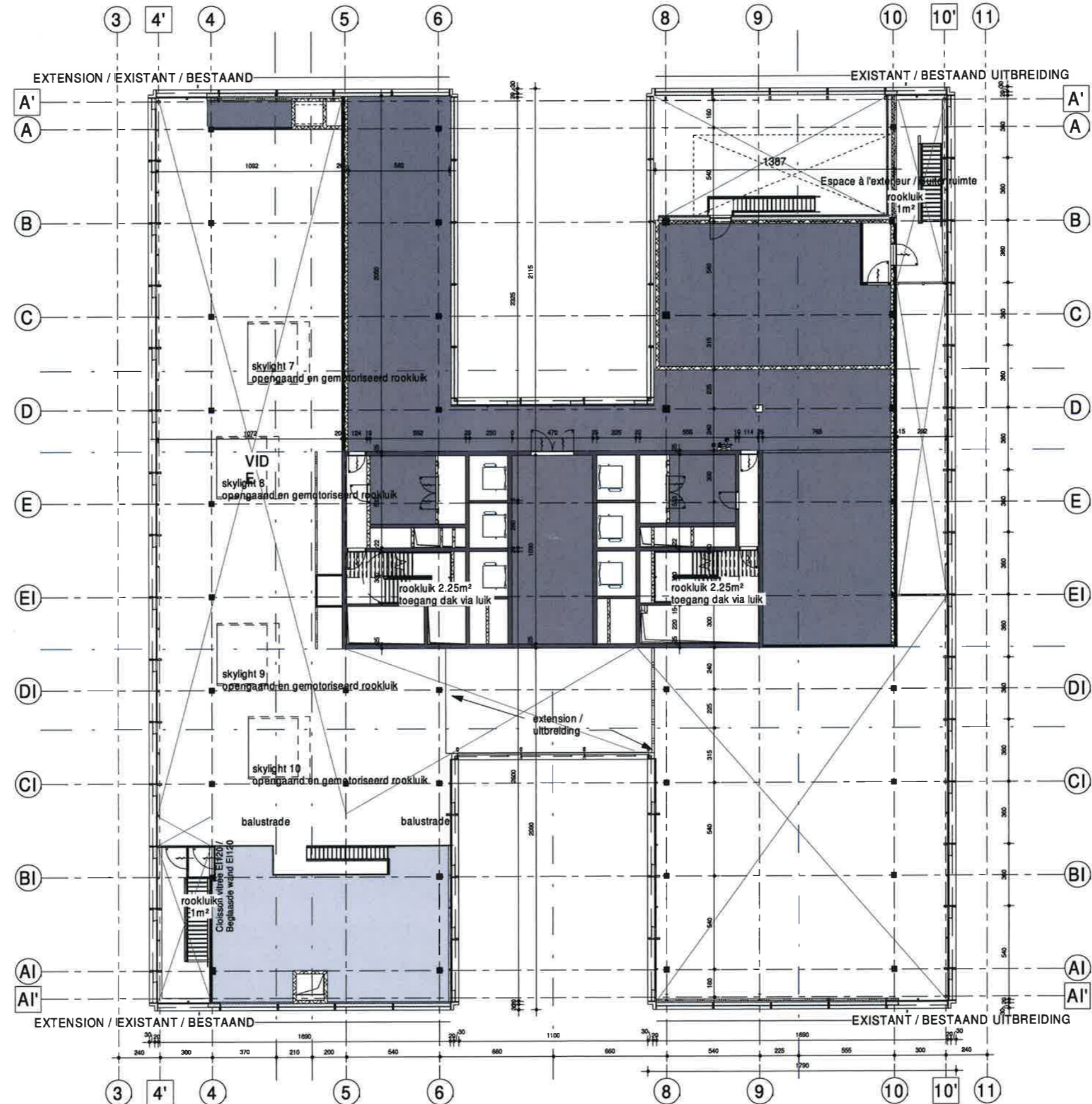
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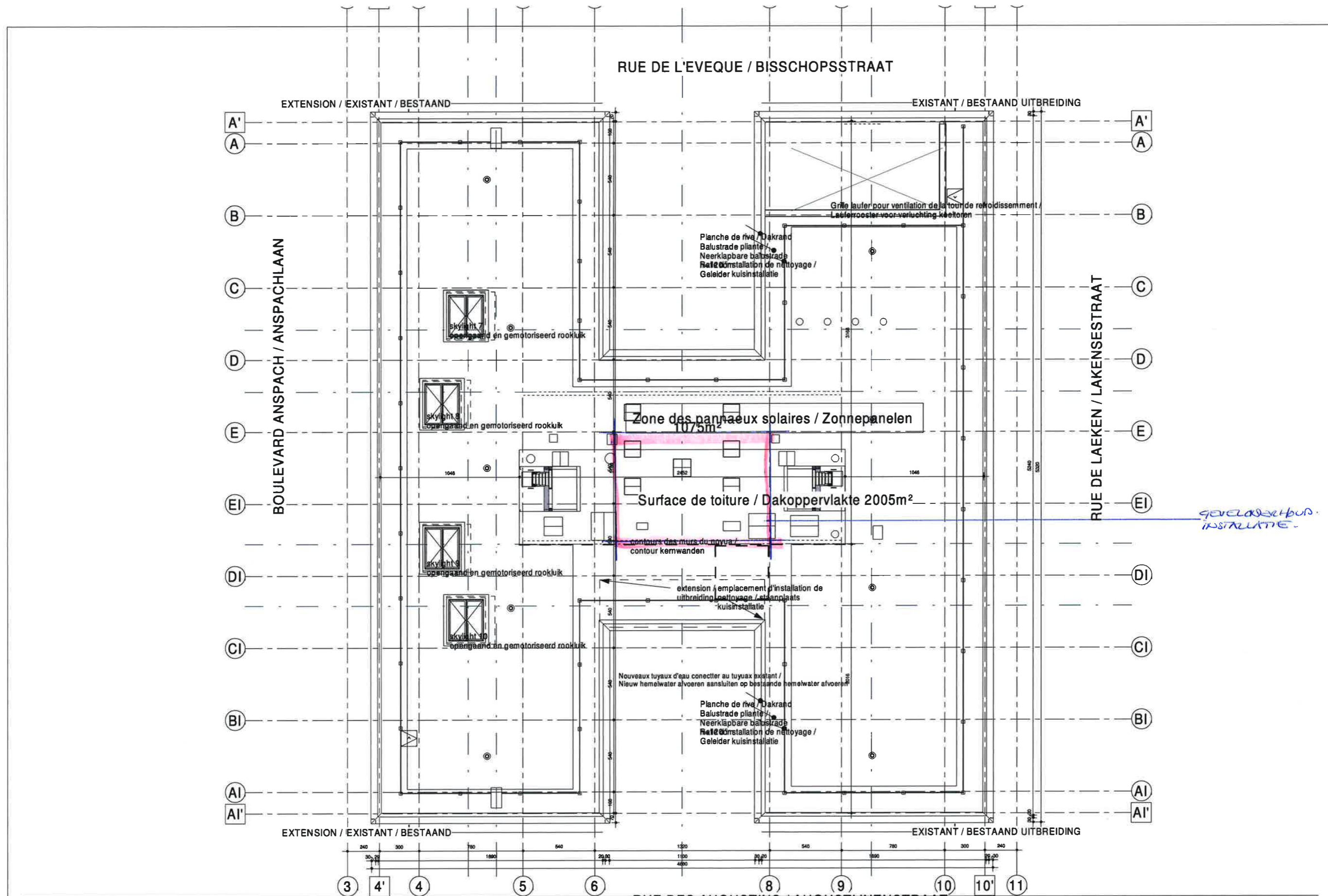
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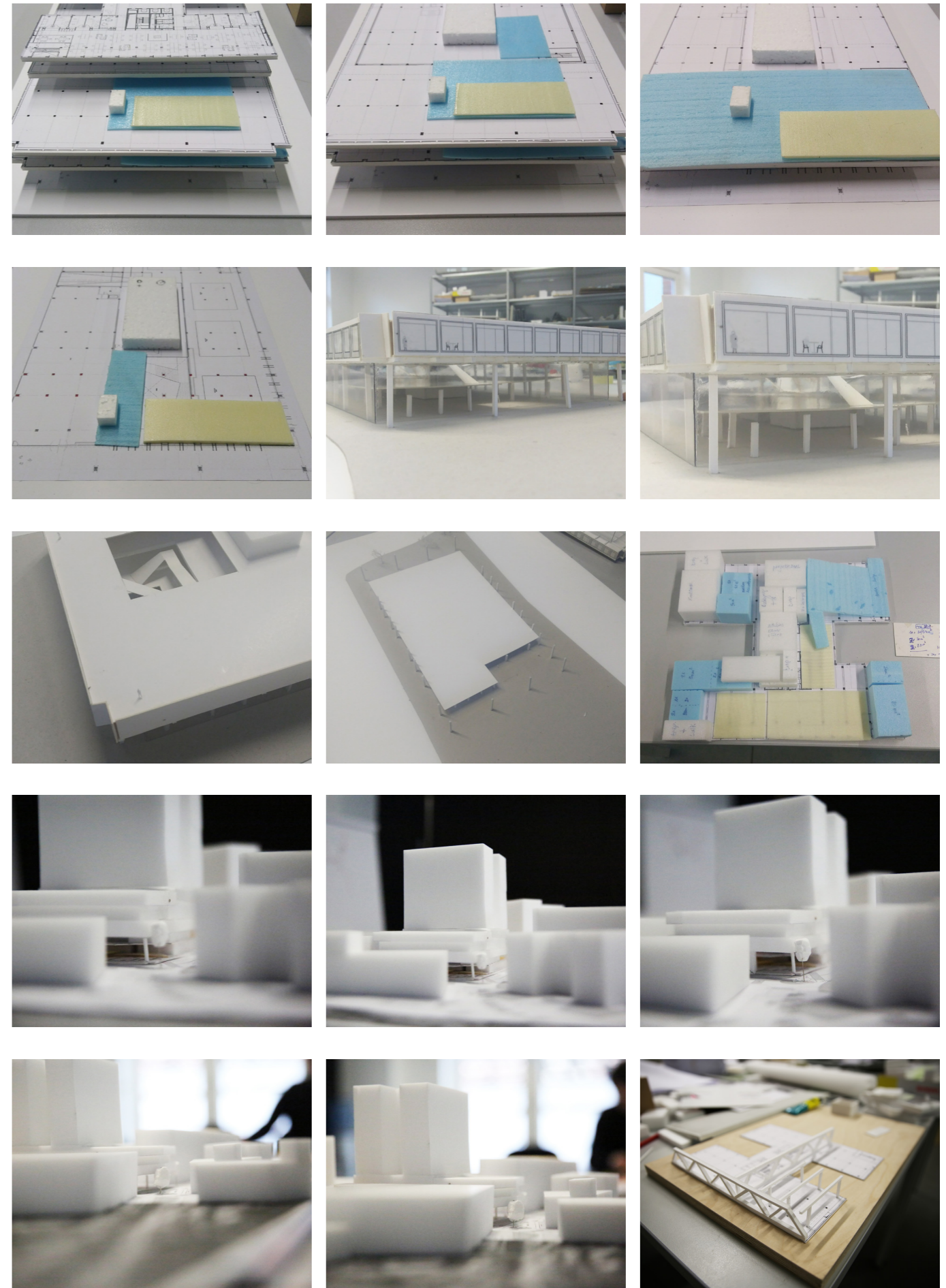
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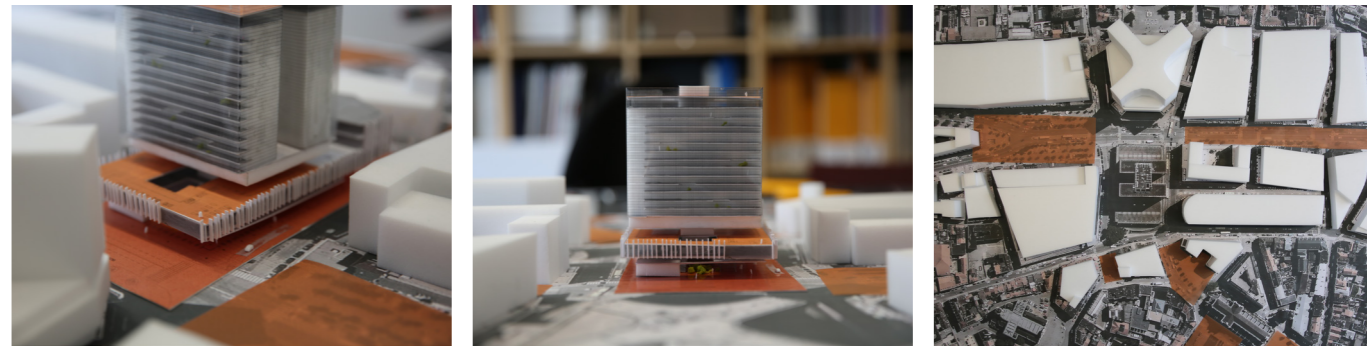
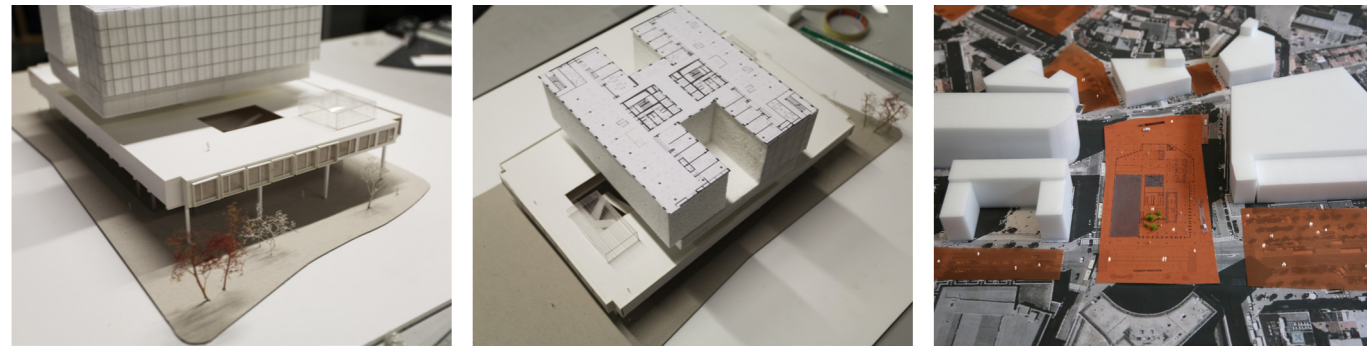
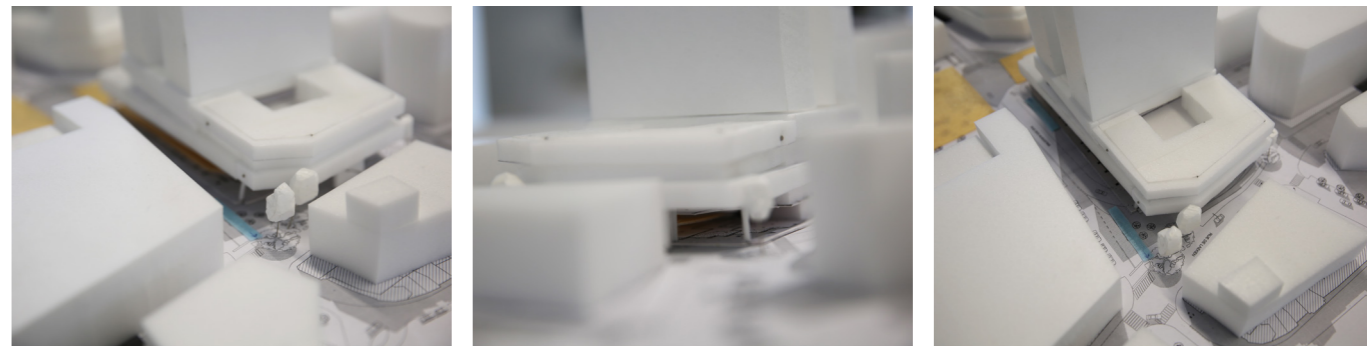
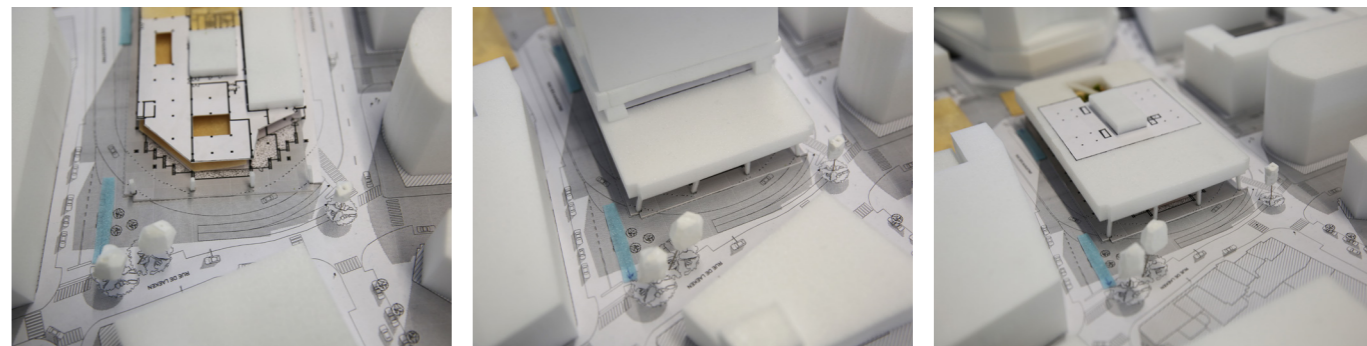
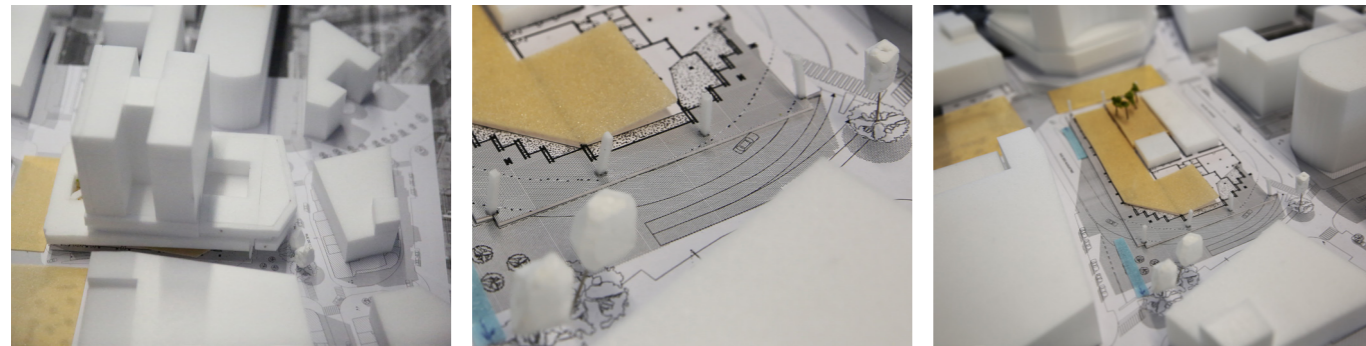
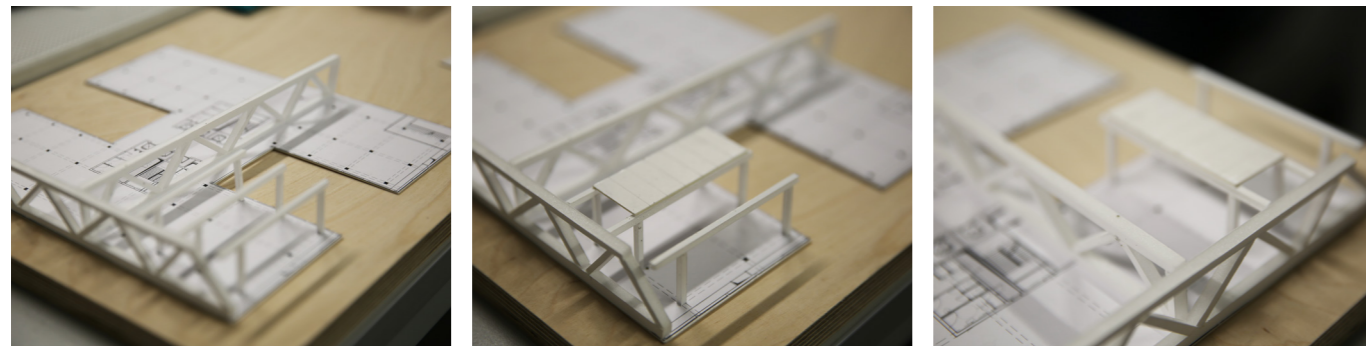
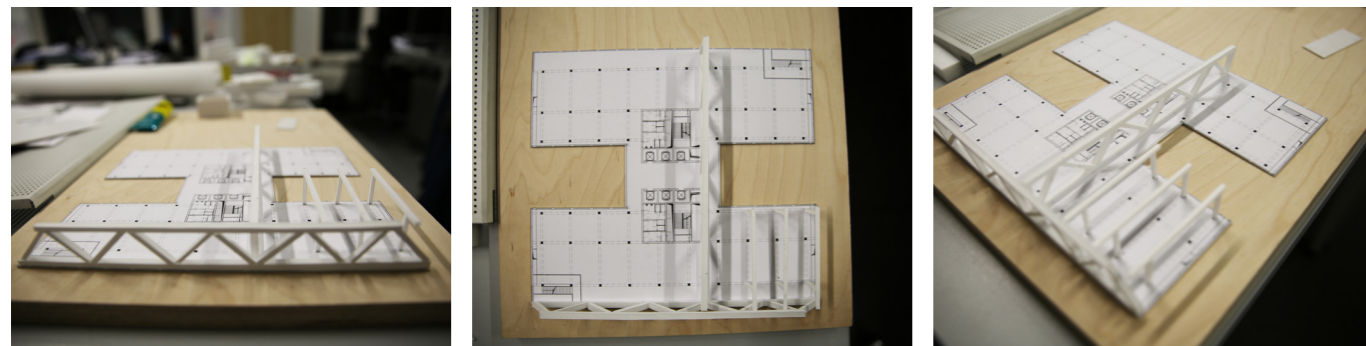




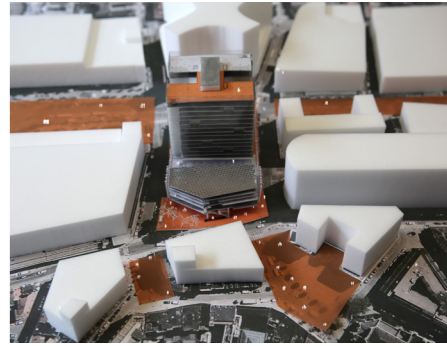
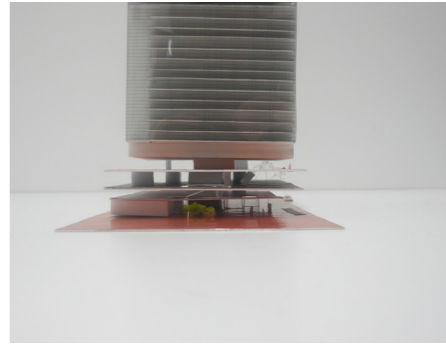
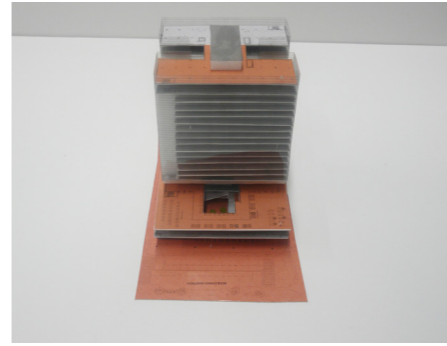
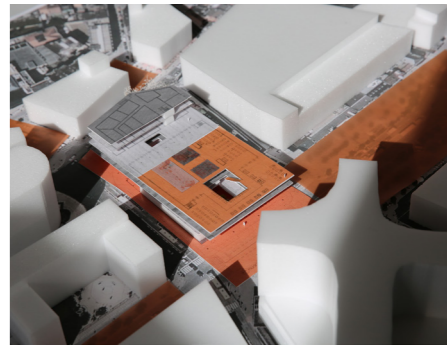
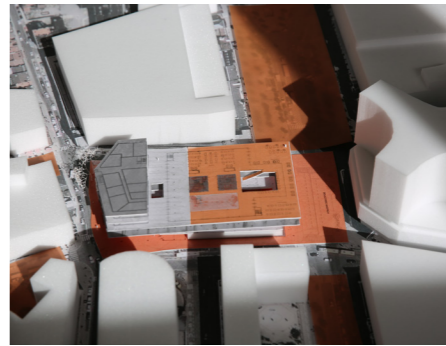
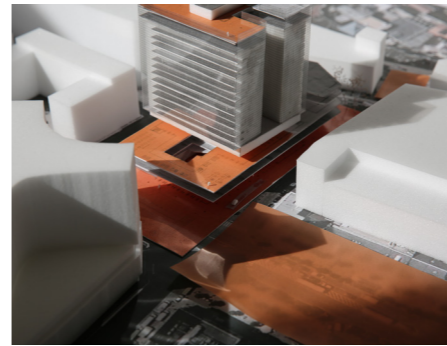
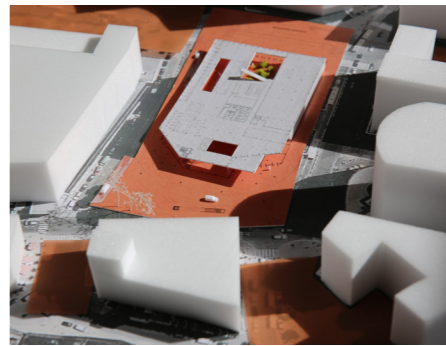
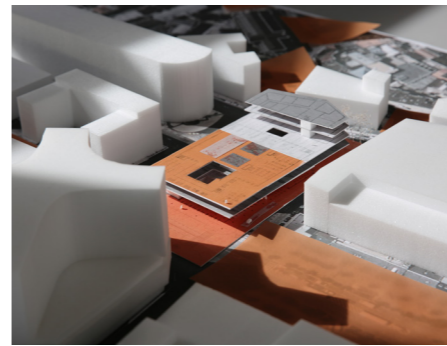
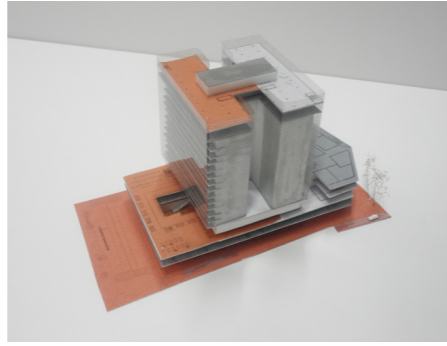
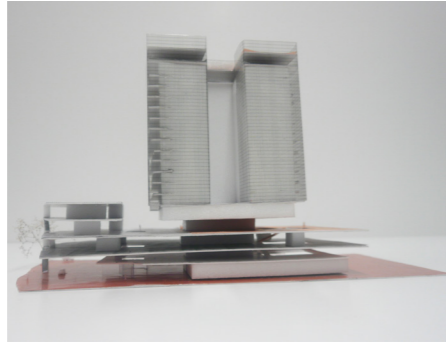
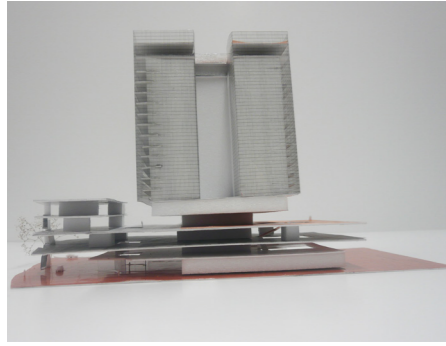
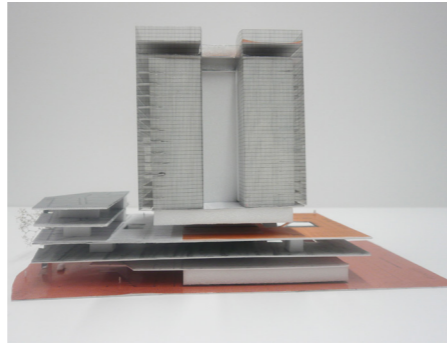
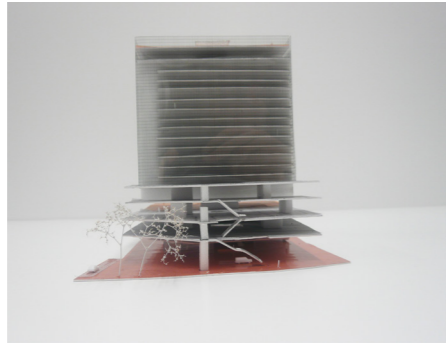
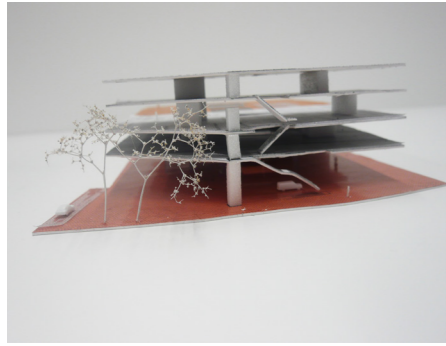
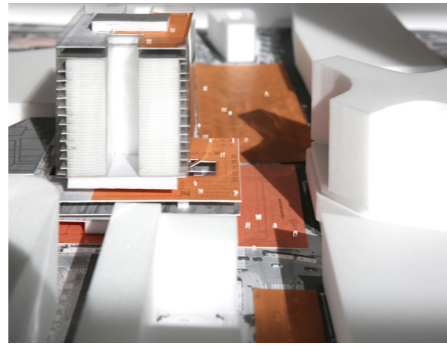
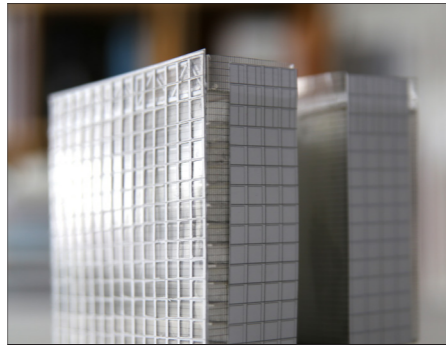
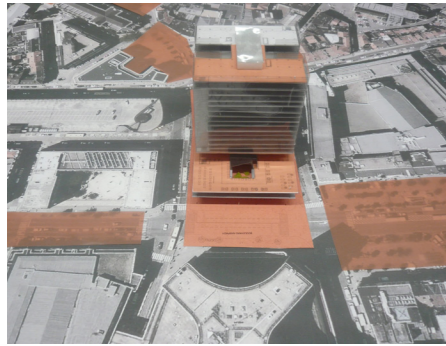
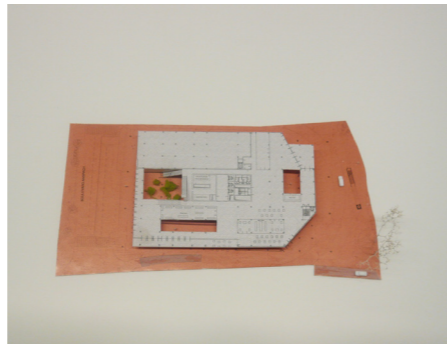
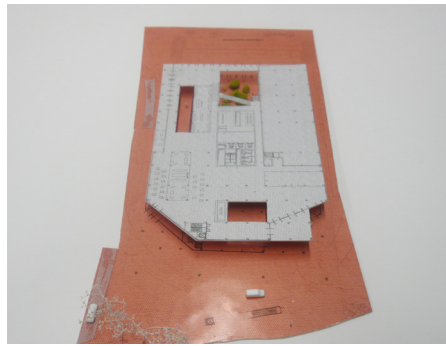
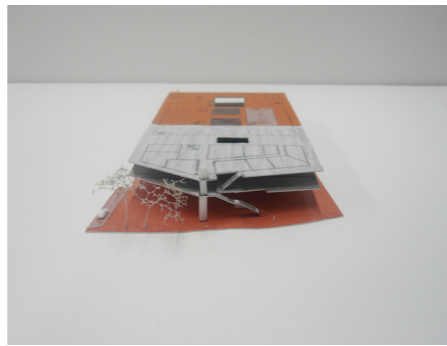
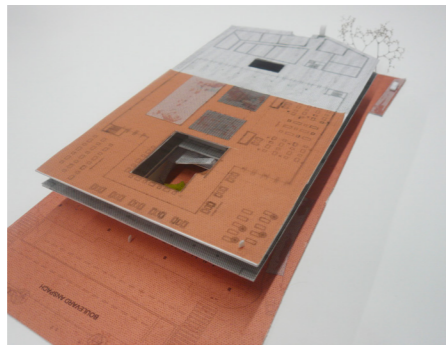
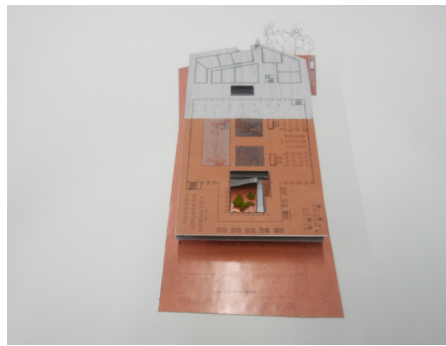


*GEVELWATERBUIZEN
INSTALLATIE*









With the collaboration of:

3E: Filip Grillet - Alias: Vic Bauwens, Nicolas Bongaerts, Karen Geerts - Bopro: Sabine Vandenmuisenberg
 CES: Steven Van Stichel - Colt Group: Rachid El Arfaoui
 CONIX RDBM Architects: Melissa Baudelet, Maxim Berghmans, Lien Bonte, Valérie Brasseur, Dries Brusselaers, Sven Coenen, Christine Conix, Peter Cornelis, Tom Cuylaerts, Judith David, Koen De Gang, Tom de Meijer, Bernard De Troch, Marylène De Vrieze, Ben Depuydt, Stefan Dieben, Matthias Fonteyn, Liza Goncharenko, Jorden Goossenaerts, Ann Hermans, George Nakanishi Hideaki, Frederik Jacobs, Sara Kooyman, Karl Maes, Sharif Mardenborough, Daniela Mercado Casas Torres, Lothar Morioux, Lode Ooms, Tomas Ooms, Karin Permeke, Bruno Pinto Monteiro, Rafaella Reijnierse, Jean-Paul Schillemans, Steven Simons, Gert Sloommaekers, Will Somers, Marcin Szpil, Arnout Vandenberg, Christian Van De Plasse, Jac Van Der Hooft, Jasper Van Der Linden, Guido Van Laerhoven, Claire Verberck, Laura Verdonck, Gisèle Vidts, Mark Willems
 Cordeel Group: Gert Abbeloos, Bart Audenaert, Manuel Bauweleers, Jade Cobben, Michiel Dombrecht, Frederik Goossens, Jan Hullegems, Sanne Schaubroeck, Guy Thyssen, Jordy Wauman - Demeuter: Jonathan De Paepe, Brecht De Valck, Niels Vanderstock - DUSS: Steve Cailler
 EPEA: Benjamin d'Ieteren - HSE: Sabine Vandenmuisenberg
 Immoebel: Yen Mertens, Gwen Vreven - Imtech: Jan Denckens, Danny Geens, Colin Hoebeke - Kiwa Oesterbaai: Paul Hermans, Christian Lubin, Peter Nagels - Renotec: Eric De Beule, Lander Kennis, Dirk Vandekerckhof, Jan Wauters - Reynaers: Koen Desmet - Rotor: Lionel Billiet, Arne Vande Capelle, Pierre-Yves Volont Seco: Eva Jacobs, Stijn Lefever, Florian Vandersteen, Marc Veldeman, Jean-Philippe Vériter
 SGI: Roxane Desmyttere, André Dion - Strunor: José Luis Alía, Emilio Barrero, Antonio Cobo, Fernando Manzanal
 SWECO: Anne Van Wetter, Youness Hadni - Venac: Tom Vandervorst - Whitewood: Anastasia Aerts, Valérie Vermandel, Julie Watrin, Laurent Withofs, Cindy Ying
 Widnell: Daniel Scheers, Bart Maes.

Realising a project like MULTI is essentially a human endeavour involving the client's team, the design team, the municipalities, and the on-site workers. Providing a list of names is a risk in this situation—we're worried we'll forget someone! So, please excuse us if you collaborated on MULTI and are not mentioned. MULTI could not have happened without you! To compose this list, we used the title page of the construction site minutes and added as many project contributors as possible. We would also explicitly like to thank the CEOs of all the companies involved!

Key figures

Client: Brouckère Tower Invest (Whitewood + Immoebel)
Location: Brussels
Assignment: Renovation
Programme: Renovation of a unilateral office building in pursuit of a variety of goals
Total area: 45,120 m²
Parking: 20,907 m²
Construction costs: €74,495,834
BREEAM: 3E/DUSS
Construction: SGI
Circular economy: ROTOR
HVAC: CES (SWECO)
Landscaping: ECOWORKS
Safety: BOPRO
Quality Control: SECO

Key contractors

Cordeel Group (lead)
 Imtech
 De Meuter
 Reynaers
 Strunor

Milestones

Feasibility study: December 2016
Dismantling and urban mining - First analysis : December 2016
Consultation committee: December 2017 - December 2018
Chamber of quality: February 2017
Building Permit: December 2017
Dismantling: January 2018
Landscaping surrounding spaces proposal to city: February 2018
Start asbestos removal: September 2018
Modification building permits: August 2019
Restoration works podium: September 2019 (bluestone removal)
Mockups spray ceiling insulation: September 2019
Mockups façade: October 2019
Mockups ceiling: October 2019
Air group removal: October 2019
Façade construction: May 2020
Landscaping design proposal terrace Rue de Laeken: August 2020
Change to fossil-fuel free: March 2021
Modification building permits: July 2021
Placing of the Jules Wabbes natural stone flooring: August 2021
Mockups light fixtures: August 2021
First tenants moving in: January 2022 (Bpost retail/bank) - April 2022 (Bpost headquarters)
Preliminary Reception: May 2022

Publications

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- 2019 **Public Debate, Public Interior, Circular Economy - Forms of Exchange: Approaching the Reconversion of an Iconic 1966 Office Tower in Brussels.** Ooms, T., Research Culture in Architecture.
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- 2020 **Seen: former Philips Tower stripped.** Dhondt, P., BRUZZ.
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- 2021 **'MULTI' set to be an open project at De Brouckère.** Harrup, T., Pro-realestate.be.
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Lectures, workshops and exhibitions

- 2017 Should I Stay or Should I Go II, by CIVA en bMa Brussel, Philips Tower, Brussels, with Frédéric Van Der Plancken
- 2018 Research Culture in Architecture - International conference on cross-disciplinary collaboration, Faculty of Architecture, TU Kaiserslautern
- 2019 Renovation of the Brussels towers: Each tower its renovation strategy, by CERAA en Brussels leefmilieu, Tour & Taxis Brussels
Should I Stay or Should I Go II, by CIVA en bMa Brussel, Brussels North Station
- 2020 Critical Circularity Conjecture, Going Public, Faculty of Architecture KU Leuven, Campus Brussels
Archiweek, Urban Brussels with a guided tour in MULTI
- 2021 Window of Circular Opportunity (WICO) by VITO, Reynaers Aluminium and VUB, online lecture
- 2022 What's Already There: Sustainable Architecture from Brussels, exhibition at the National Building Museum, Washington D.C. (The exhibition will also tour in different countries and will take place in Brussels in 2023)

Awards and certificates

- 2017 Be.Exemplary award for the reconversion of an iconic 1966 office tower in Brussels
- 2018 BIM bronze award MULTI
- 2021 BREEAM Excellence Certificate

Biography

Lionel Billiet

Lionel Billiet joined Rotor after graduating as a bio-engineer at the Vrije Universiteit Brussel (VUB) in 2010. Within Rotor, Lionel mainly works on topics related to the reuse of building elements, and on construction and demolition waste. In 2013, he was in charge of Rotor's Opalis project, the first exhaustive study of the professional sector for reclaimed building materials performed in Belgium, which resulted in the website www.opalis.be. Lionel also played a key role in launching the spin-off Rotor Deconstruction, an innovative salvage company active in the reclamation of interior components from post-war tertiary buildings. Lionel also carries out consultancy missions, advising various architects, developers and building commissioners on integrating reuse in their projects.

Kristiaan Borret

Kristiaan Borret is has been the Master Architect of the Brussels Capital Region since 2015. A Master Architect is an independent government official who stimulates and supervises the design quality of urban development projects. He previously held the same position in Antwerp (2006-2014) and is currently also working for the City of Amsterdam as supervisor for two major urban transformation areas Oostenburg (2017-) and Hamerkwartier (2020-). He has been professor of urban design at Ghent University since 2005. His career has been marked by a close relationship between theory and practice, between design and policy, between architecture and urban planning, between the public and private sectors. More specifically, he has conducted theoretical research into contemporary transformations of the city, and contributed to various urban development projects in Belgium, the Netherlands and France. In 2013, Kristiaan Borret was awarded the Flemish Culture Award for Architecture.

Asli Çiçek

Asli Çiçek graduated from the architecture and design department of the Academy of Fine Arts Munich. Prior to founding her office in 2015 she worked as a project architect at Gigantes Zenghelis Architects and Robbrecht en Daem architecten in Belgium. From 2009 to 2020, she was a lecturer and guest professor at the interior architecture department of KU Leuven, campuses Brussels and Ghent. She is currently associate professor at Hasselt University, Faculty of Arts and Architecture and guest professor at Ghent University, Department of Architecture and Urbanism. She regularly contributes to publications on architecture and art, co-edited the 11th Flemish Architectural Review and is a member of the editorial board of the OASE journal for architecture.

Frederik Jacobs

Frederik studied architecture at the Henry van de Velde Instituut in Antwerp. He subsequently obtained a master's degree in construction management at the VIK De Naeyer Instituut and Sint-Lucas. For Frederik, it all started with the ultra-modern, furnished villa his uncle and aunt built in the early seventies. In that house, the seed for his passion for architecture was planted. This passion led to a varied career with worldwide collaborations. Since childhood, he has wanted to design, be an entrepreneur and manage. As an architect with a master's degree in construction management, he is the inspiration and stimulator for the designers at CONIX RDBM Architects. Frederik not only focuses on the broad feasibility of a project, but also on the social responsibility of the firm. For Frederik, architecture is socially relevant and more than just an aesthetic cocoon. He believes this is the mission that architecture should fulfil in the most ideal circumstances. It is a design idea that he firmly believes in. 'Realising dreams together and creating added value' is what drives Frederik.

Tomas Ooms

Tomas Ooms studied Architecture, Literature, Research Methods and Music. He is a founding partner of Studio Tuin en Wereld and is senior lecturer and academic promotor at the Faculty of Architecture of the KU Leuven. He is a member of the In Practice interuniversity research group of practising architects engaging their practice(s) at the heart of their research. He leads the design and research practice Studio Tuin en Wereld where he approaches spatial 'themes' from a particular multiplicity: space as moment, as place and as relationships. The practice thrives in complex and preferably paradoxical spatial themes that are found on the interface of society, the client and design practice itself. In addition to being a practising architect, he is also a composer and performing musician. He was a guest professor at the Politecnico di Milano and the Istanbul Technical University. Tomas has exhibited in Antwerp, Berlin, Brussels, Copenhagen, Ghent and New York.

Sven Sterken

Sven Sterken is a professor at the Faculty of Architecture of KU Leuven, where he teaches courses on the history of architecture and urbanism. His research deals with the architectural agency of institutional actors such as religious bodies or (inter)governmental organisations. His most recent publications include Territories of Faith. Religion, Urban Planning and Demographic Change in Post-war Europe (with Eva Weyns, Leuven University Press, 2022) and A History of Urbanism in Europe (with Sergio M. Figueiredo and Kees Doevendans, Acco, 2021). He is currently preparing a monograph on Groupe Structures (the original architects of MULTI) in collaboration with the CIVA in Brussels.

Arne Vande Capelle

Arne Vande Capelle graduated in engineering & architecture from Ghent University, and has been a member of Rotor since 2018, where he works on research, design and design consultancy projects, such as MULTI. He is one of Rotor's main coordinators of opalis.eu - the online annuary of reclamation dealers in France and the Benelux - one of the authors of the reclaimed material information sheets and a main researcher for Rotor's Interreg FCRBE project. He tutors at the AA-School of Architecture in London and in 2022 started as a part-time researcher at Ghent University, focusing on material culture in general, and the post-war reuse landscape in Belgium specifically.

Valérie Vermandel

Valérie Vermandel obtained her Master of Science in Engineering (Architecture) in 2012. She then continued her studies at the Raymond Lemaire International Centre for Conservation, completing her Master of Science in Conservation of Monuments and Sites. Valérie worked for several years as an architect at Origin, contributing to a variety of restoration and conservation projects. In 2016, she became a project manager at Whitewood. In this position, she represented Whitewood as a client in the conversion of the Philips tower into MULTI. As a researcher, Valérie worked on different EU-funded research projects related to heritage, such as the ALTERheritage project, and published her findings in multiple articles. More recently, she successfully completed an Executive MBA at Vlerick Business School and an Executive Master in Real-Estate at Université Saint-Louis. Valérie is currently a member of the advisory board of Juunoo and chief development officer at Whitewood. She lives and works in Brussels.

Gwen Vreven

After his Civil Engineering studies at the Vrije Universiteit Brussel (VUB) and Master of Science in Urban & Regional Planning at the Katholieke Universiteit Leuven (KUL), Gwen started his professional career in 2000 at ING Real-Estate Development with an extensive track record of mixed-use projects in Belgium and abroad. Since 2012, he has held the position of general manager at the Urban Development Agency in Aalst (AGSA), where he played an important role in the start-up, set-up and realisation of several inner-city PPP projects and SPVs. In May 2020, Gwen took on the role of development director at Immobel, where he is responsible for complex, inner-city transformations with a focus on sustainability and circularity.

.working with. MULTI
Open debate, public interior and circularity.
A graphic documentary

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In a late modernist gesture, the Dutch Philips Company constructed its headquarters in the old city centre of Brussels in 1966. Fifty-six years onwards, the Philips tower was converted from a mono-functional single-tenant and stand-alone urban object into a multi-tenant office environment with an emphasis on conviviality, publicness and 'spatial engagement'. Through a focus on the detailing, the materialisation, the craftsmanship and making, this graphic documentation aims at giving an insight into the process of 'working with' MULTI.

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Asli Çiçek, architect
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