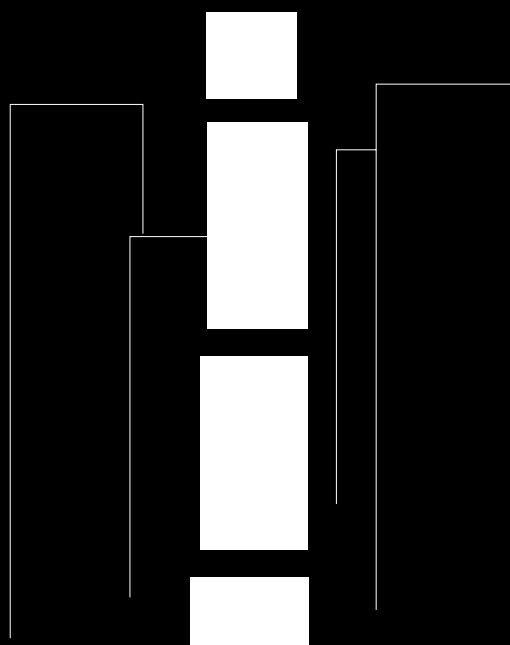


BEYOND IVORY TOWERS



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complex projects
design article

“THE SKYSCRAPER’S CHARACTERLESS, IMPERSONAL SPACE CREATES THE RECOGNIZABLE, CHARISMATIC MONUMENTS AND THE ENDURING IMAGE OF TWENTIETH CENTURY CITIES.”

Ada Louise Huxtable in ‘On Architecture: Collected Reflections on a Century of Change’

Introduction

The architectural concept of the skyscraper is widely considered to be the building of the 20th century. A century in which it has grown from a functional and efficient typology into an architectural symbol of economic power and wealth. Starting in American cities as Chicago and New-York, but since then taking the world by storm through continuously reinventing itself not only as a consequence of economic prosperity but also as an incubator of it. It shows that while the iconic typology changed in form and shape, it has been more than any architectural typologie a true reflection of the modern social-economic societies in which it has risen from the ground. From that perspective, it provokes curiosity to look deeper into the Dutch urban context and understand why the typology only sporadically surfaced here in the last century and what has changed in recent years.

Because over the last decades, there is a growing interest from within Dutch society towards building towers in order to facilitate urban life. Especially the city of Rotterdam has taken giant leaps in developing planning structures that sustain this trend. It started in 1993 when a high-rise zone became an integral part of the inner-city development plan but has evolved in all aspects ever since. Nowadays, the scope of the high rise vision goes way beyond height limits and dimensions and puts just as much emphasis on effectively embedding skyscrapers within the urban context and limiting the social concerns related to vertical living. The latter

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being especially relevant in Rotterdam because one of the foremost municipal goals with this vertical strategy is to improve inner-city life through extensive densification.

It brings us back to the strong relationship between skyscrapers and how they embody the social-economic tendencies of their respective birthplaces because inner-city densification can be considered Rotterdam’s reaction to upcoming economic shifts. A well-known strategy supported by many prominent urban economists who believe that the next economic revolution is the shift from corporate towards community production. In other words, the shift towards an economy centred around people instead of corporations. This consequently triggers the growing devaluation of glass and steel office towers that have dominated urban skylines around the world for so many years. Nevertheless as it is undeniably clear that the tower typology is here to stay, we should ask ourselves how it will move on to embody the urban ideals of the 21st century in order to create projects that truly reflect the spirit of this time.



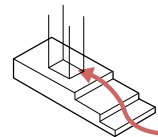
Site

Rotterdam has been exploring this strong connection between socio-economics and building height thoroughly over the last decades. For example, when redeveloping De Kop van Zuid and the more recent reactivation of districts along the southern Coolingsingel. However, when looking upon it with a perspective of the ongoing social-economic shifts, there is one location in the city where a project that facilitates them holds an even greater value. It is the place in Rotterdam where economy for the very first time in Dutch history truly met height; the Rotterdam Central District. A neighbourhood that, due to its historic corporate character, will be forced to adapt more rapidly than any other.

This need for adaptation becomes visible not only by the ever-increasing vacancy of commercial property but maybe even more so by the lack of around the clock activity. Something that facilitates community interaction beyond the office floor and stirs the creative spirit. That is why the municipality is already proposing to increase the amount of residential property in this area. A development facilitated by projects such as the Schiekadeblok, the Tree House tower, and the development of Pompenburg. However, it is questionable whether this strategy alone can result in a genuine answer to this particular urban challenge.

Concept

Up till now, we see that the skyscraper as a residential typology has had a hard time moving beyond the vertical and hierarchical ideology of its corporate counterpart. Often resulting in the creation of ivory towers, spilled with unaffordable luxury apartments and amenities that are inaccessible for the everyday citizen. Meaning that while the population density of a neighbourhood may indeed increase, its liveability will not follow this rise consequently. Because density is not design, and community production can only develop itself when people get encouraged to interact with one another.



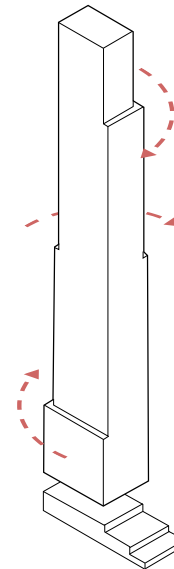
podium
'embed **and invite**'

This projects therefore aims to truly understand, evaluate and consequently rethink the ideas that have become common good in skyscraper design. Something which is done by comparing its standardized outline, known to facilitate a vertical disconnection between building elements, to several different interpretations of more horizontally designed co-housing projects. Projects that through their organizational structure facilitate interaction between residents and the surrounding community. These are two typologies with a dramatic difference in programmatic arrangement, the one focused on a highly efficient stacking of functions and the other on a connected organisation around neighbourhood plazas. Following the believe that if a combination could be found between these typologies it would pose as an answer to the set-out research question for this project; how can Rotterdam increase its inner-city density whilst shaping socially interactive living environments?

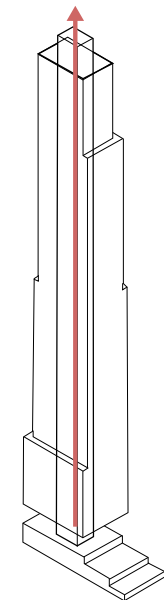
In order to do so the main objective became to rethink the basic elements of the

skyscraper by connecting stacked residential blocks to elevated neighbourhood plaza's. Places of interaction that respect the vertical constraints which get stronger as building height increases. Meaning that the higher the building rises, the more secluded and intimate the plaza becomes. However, that does not mean that these spaces therefore also become less accessible. A routing system needs to be at the heart of this concept that both offers not only a functional connection but just as much provide an engaging experience. Drawing visitors and residents across vertical boundaries towards these horizontal spaces designed for interactive communities.

This ambition is achieved by using a system of vertically and horizontally oriented steps and set-backs that allow for a refined interpretation of the three main elements in (Rotterdam's) tower design; the podium, the tower, and the crown. Vertical steps over functional space in the podium are used to draw the public in and break through the first barrier of disconnection. A barrier which exists by the notion that all urban activity and



tower
'operate **and engage**'



crown
'display **and attract**'

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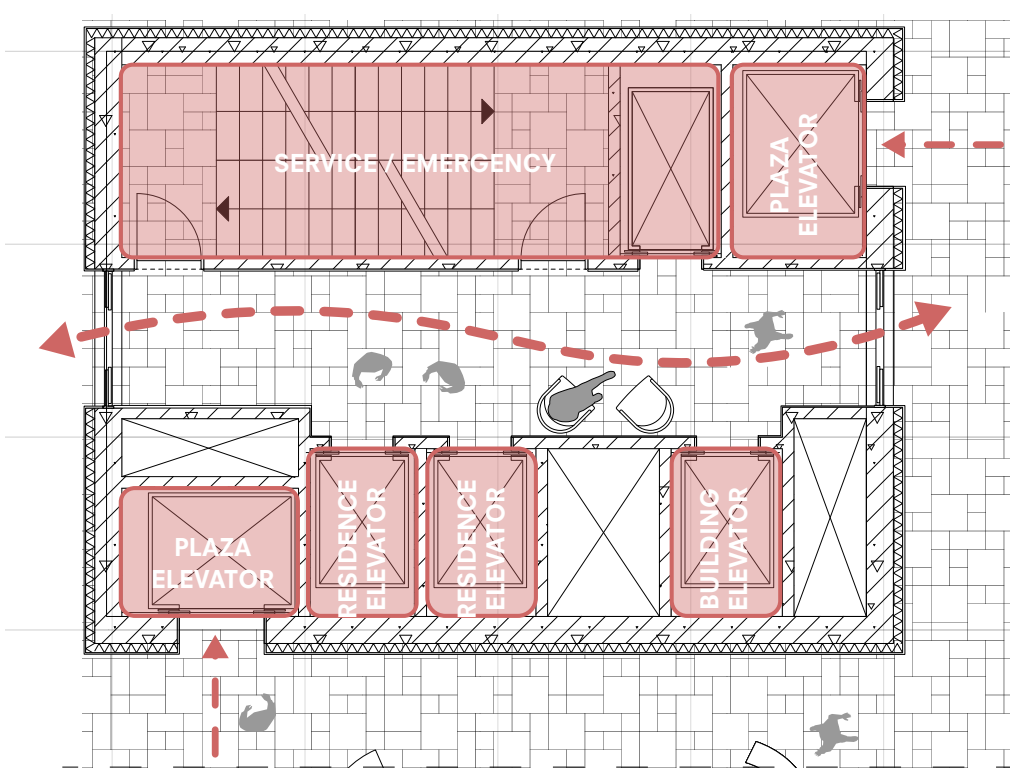
commercial space should be located within the buildings plinth. In the tower horizontal set-backs then open up the neighbourhood plaza's towards the city, engaging with increasingly widening views the higher the building rises. Lastly, the crown will be shaped by continuing the buildings core towards the sky. Showcasing the continuous accessibility of public spaces throughout different heights and emphasizing the importance of the core as the heartbeat of the whole design.

The Core

In every tower the core plays a highly important role. It is first of all the main constructional element, but it is also the place where all vertical infrastructure (both technical and personal) is organised. Therefore every change made to the so clearly defined tower typology should start with considering the design of the core. The main challenge in this particular case is that within the analysed co-housing typologies the main building axis always fans out towards the residential blocks. However, within the efficient design of skyscrapers the notion of multiple and decentralized cores rapidly leads to a decrease of usable floor space. To overcome this, the main concept behind the core's design was to invert this idea and create a public route along the exterior shear walls whilst the interior space services residents in a more private manner.

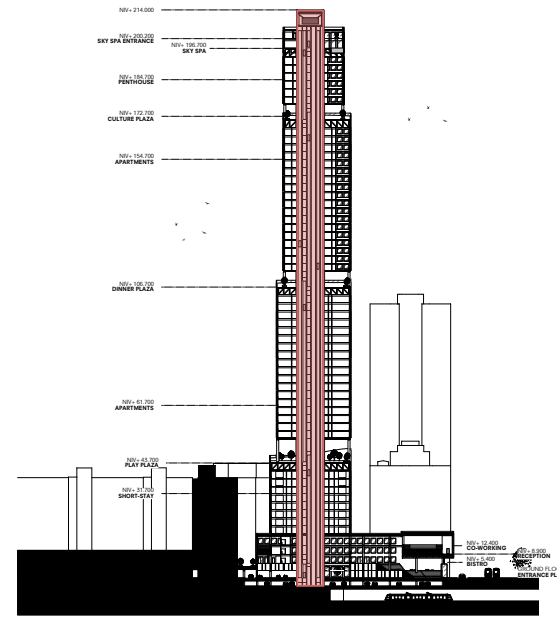
It are these exterior access points that house express elevators which take the public directly from the base, through

the neighbourhood plazas, all the way up towards the luxurious sky spa in the tower's crown. This happens efficient and fast due to the fact that there are only five main stops along the way. Then, it is from these community-oriented spaces that residents can move into the private interior of the core where residential elevators take them directly towards the dwellings located directly above and below the plazas. Nevertheless, although this design maximizes the efficiency of the vertical system, residents will always have the choice not to take the public route and opt for a more direct connection between their house and the residential lobby on the ground floor. A connection that will play a double role as it also ensures maximum accessibility for people with a disability.

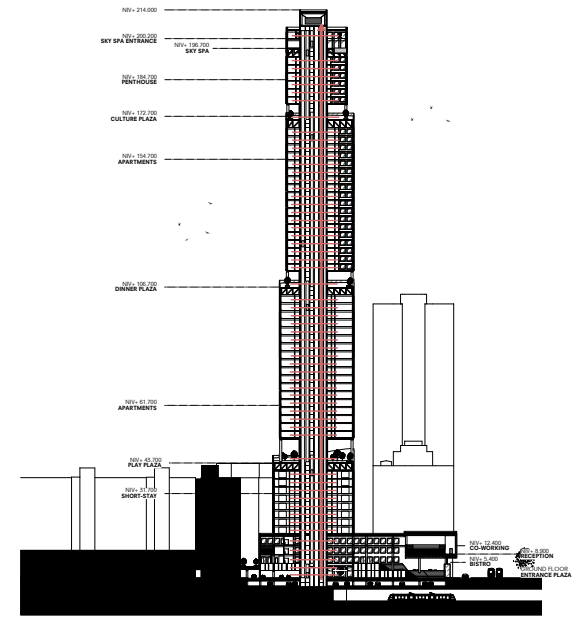


the interior and the exterior core

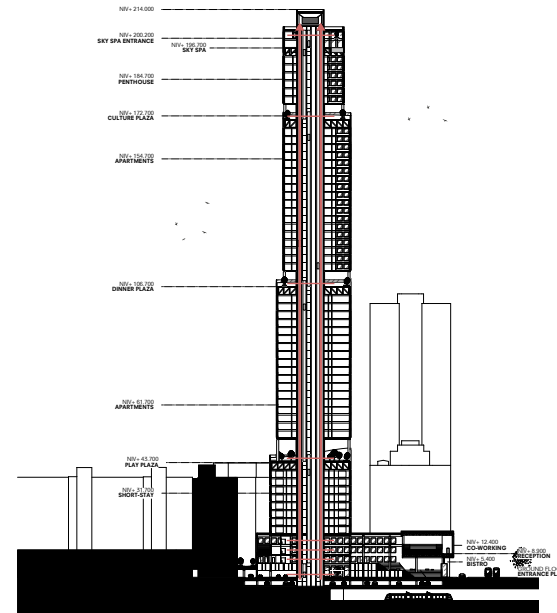
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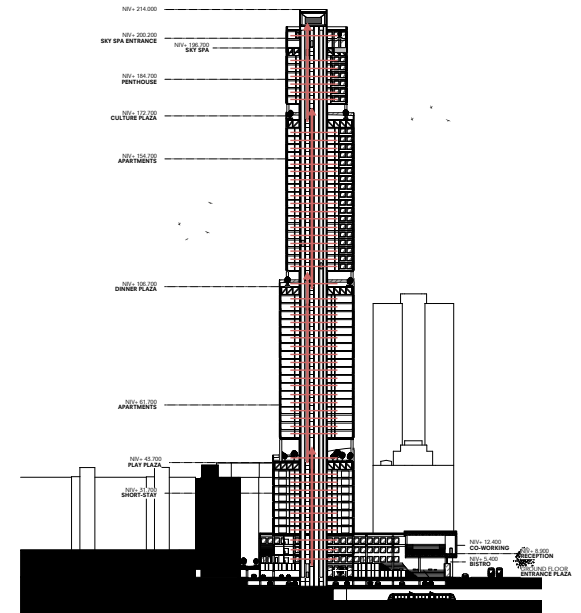
the core



plaza elevators



residence elevators



building elevator

Implementation

When a visitor enters the building, the starting point of his journey is located on the corner of Delftsestraat and Poortstraat. A intersection that with the new developments of the Schiekadeblok and around Delftseplein becomes of key importance in connecting the upper RCD to the (pedestrianised) boulevard of Weena and beyond. It is at this point that the design interacts most direct with the active streetscape shaped by these developments. Therefore it is designed not only as part of the network, but also as an unique addition to it. Something which is emphasized by the overhanging golden block that highlights the accessibility of this corner by its contradictory expression.

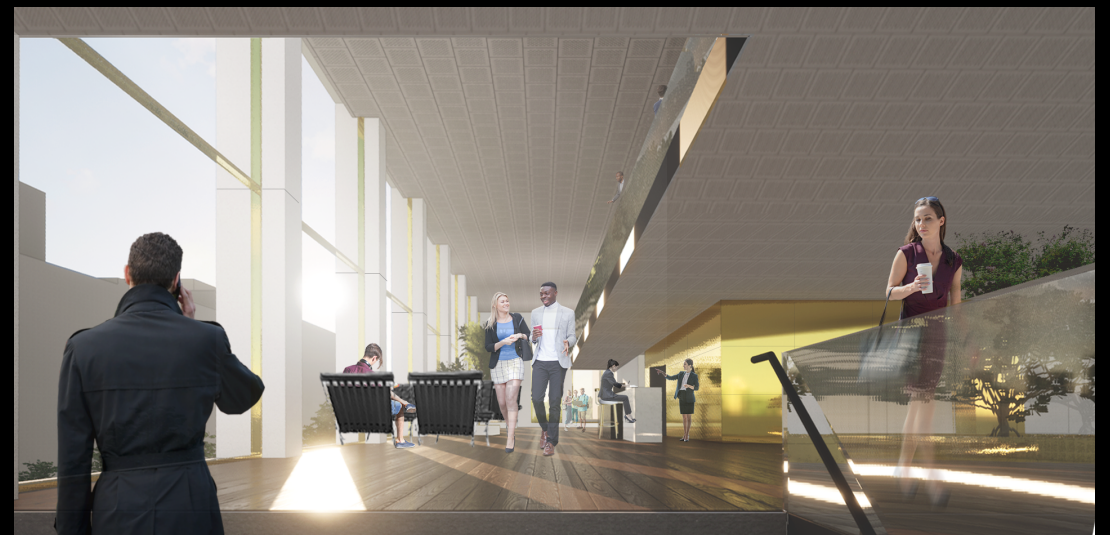
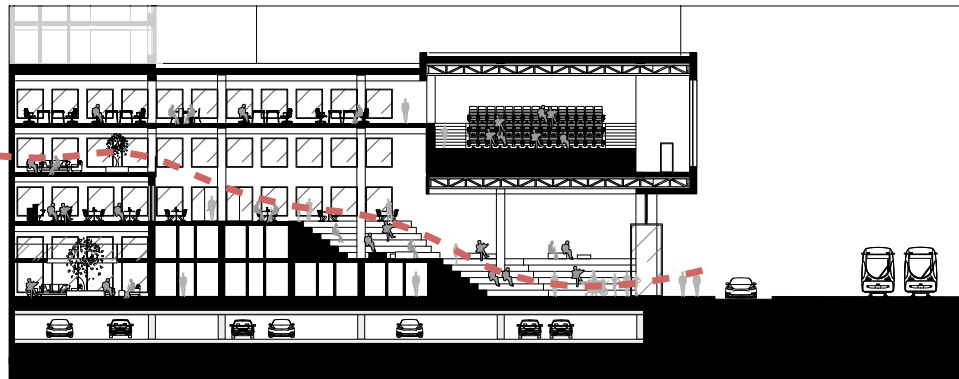
Underneath this block an interior plaza is formed that spans the first two vertical steps within the podium. It fosters a flexible and interactive meeting space that changes in character around the clock. During the daytime for example, the plaza can facilitate alternating food stands and coffee trucks where workers pass by during their lunchtime strolls. The integrated tribune then functions as a resting spot where you can enjoy your just bought cappuccino to-go and sandwich before going back to work.

After five o'clock however, the plaza will less rely on its connection to city networks but instead become a destination for social activity. The tribune now offers a place to organise community meetings and events. Activities that are not isolated by strict spatial boundaries, but can occur in connection with the bar & restaurant at the upper level or in relation with the commercial functions

located in the plinth of the Schiekadeblok. These connections are important because it is this cooperation that adds variety and fosters this new and varied hotspot within the RCD.

The route through the design does not end here though. From the entrance plaza a visitor is offered a variety of choices. He can visit the already discussed restaurant for a more extensive lunch or dinner. He can choose to stroll through the private park which offers a small mixture of meeting spaces within the green. Or he can continue his vertical journey along the facade and enter the central reception hub. Here a direct connection is made between the steps in the base and the main vertical artery of the design. It is the place where all parts of the building come together, where you can reserve a shared car, check-in to the short-stay apartments and take the elevator up all the way towards the sky spa.

Although the main focus at this point shifts towards taking the public across vertical boundaries there is also still a possibly to continue within the constraints of the podium. You can choose to walk around the core and enter the more secluded co-working space. Here flexworkers are free to reserve a workstation for themselves or host and attend meetings varying in size and scale. The space directly connects to the auditorium located on top of the entrance plaza which, contradictory to the space below, can be used for more private (business) presentations.



When visitors and residents choose to take the core upwards they are rapidly transported towards one of the neighbourhood plazas located in between the residential blocks. These plazas do not only form the main artery around which in-building community is fostered but they are also key elements within the building's technical scheme. Their open-air design allows wind to flow over the activity spaces due to the venturi-effect. This mitigates pressure on the facade blocks and can at the same time be used to draw away exhaust air that rises from the residences through shafts in the core. The visitors of the plazas will experience minimal drawbacks from this as a 2,8m high barrier will shelter them from these high-speed flows.

Consequently that means that these elevated places are free to be used for a unique variety of open-air activities. Activities will be organised in accordance with the fading identity of the residential blocks. Meaning that the plaza's will get more intimate and luxurious as building height increases. This ranges from a sports and play plaza in between the lower levels, to a central dining plaza and then all the way up towards a culturally oriented plaza. The first offering active space for all ages and the latter being more focused on intimate activities such as a flexible community theatre and private reading pods.

This clear character does not mean that the activity at a single plaza has a monotone character though. The turning set-backs explained in the massing of the building allow for a dualistic approach to the design of these spaces around the central core. On two sides, bands of greenery are created along the rising facade. Within this green space activity pavilions can be placed that need a certain level of privacy or have a clear backside. On the other sides, the plazas move away from underneath the set-backs. Here the facade is lowered and transitions into a glass balustrade. These sides facilitate a more open form of activity that interacts with the city and offers breathtaking views.

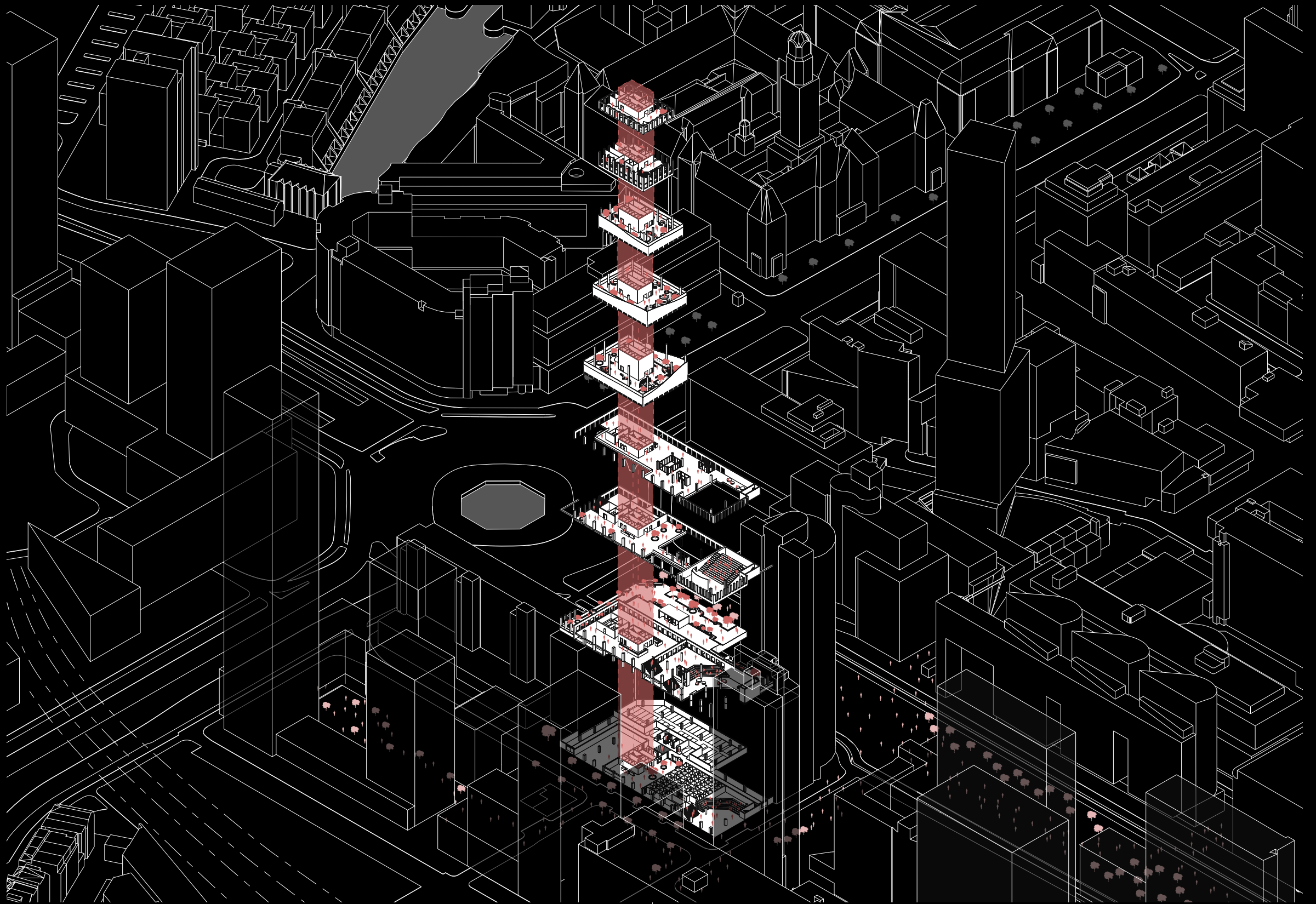
Unique in this series of community spaces is the sky plaza in the crown of the

building. This is the only plaza that is not freely accessible. It houses the luxurious sky spa to which residents of the penthouses have untethered access. Other visitors will have to reserve and pay an entry fee in order to enjoy this amenity. The spa consist of two floors with the entrance being located on the top level and a more intimate spa floor placed underneath it that houses the pool and sauna.

In between these plazas the residential blocks are placed. Blocks that as mentioned before follow a fading organisation when it comes to apartment sizes. The lowest blocks houses the short-stay apartments and from there on out apartments gradually increase in size until the full-floor penthouses are reached.

This all occurs behind a facade that follows the rigid rhythm known to Rotterdam. But contrary to the singularity seen in so many of the surroundings towers this rhythm is build around two story high facade panels. Panels that serve both the aesthetic purpose of adding more depth and dynamics to the facade, but also serve a technical purpose. The glass second-skin panels allow for naturally ventilated interiors through integrated fan coils, but more importantly through openable windows. Something that has a strong sociological value and therefore improves the living quality of residents enormously.





Conclusion

The city of Rotterdam is at the forefront of high-rise development in the Dutch urban context. Although skyscrapers are still a relatively new architectural typology we witness that after a century of developments and experiments around the world they are starting to settle within certain perimeters. It is however due to this experienced change that skyscrapers have become a clear reflection of our shifting urban ideals in the last few decades. The starting point for this design was therefore not to fully change the typology but to comprehend its current state and reflect on those perimeters within the context of Rotterdam's inner-city ambitions.

In this process a design was formed with a strong focus on the connective role of certain tower elements. A role that goes far beyond just the functional linking of spaces. It are these elements that due to their constant usage are also the key points where social interaction can be fostered. Something that is extremely relevant when answering the research question for this thesis; how can Rotterdam increase its inner-city density whilst shaping socially interactive living environments?

By rethinking every aspect of tower design from this perspective it became clear that the value of height does not have to be inaccessible. Through the design of a sequentially connected series of (elevated) public spaces quality is added for both the residents and the community at large. Something made possible by accepting the notion that in an interactive city these two are not separated entities.

The design of this vertical sequence could theoretically be extended endlessly as our technical capability to increase building height keeps expanding. But when we talk about the added value of height it is about the unique experience it offers. That is what will attract people to these elevated plazas. So, as during the process it also became clear that increased height consequently triggers increased seclusion it poses a final question. At what level will the tipping point be reached where the value of height is maximised and isolation overshadows the experience?

The answer will probably be partly bound to context. Rotterdam for example is, in relation to other vertical cities, still a small player. That means that the point where seclusion trumps experience may be reached sooner than in cities as New-York. But alone the basic understanding that the value of building height is a derivative of the unique urban experience it offers should be a, if not the starting point for tower development.