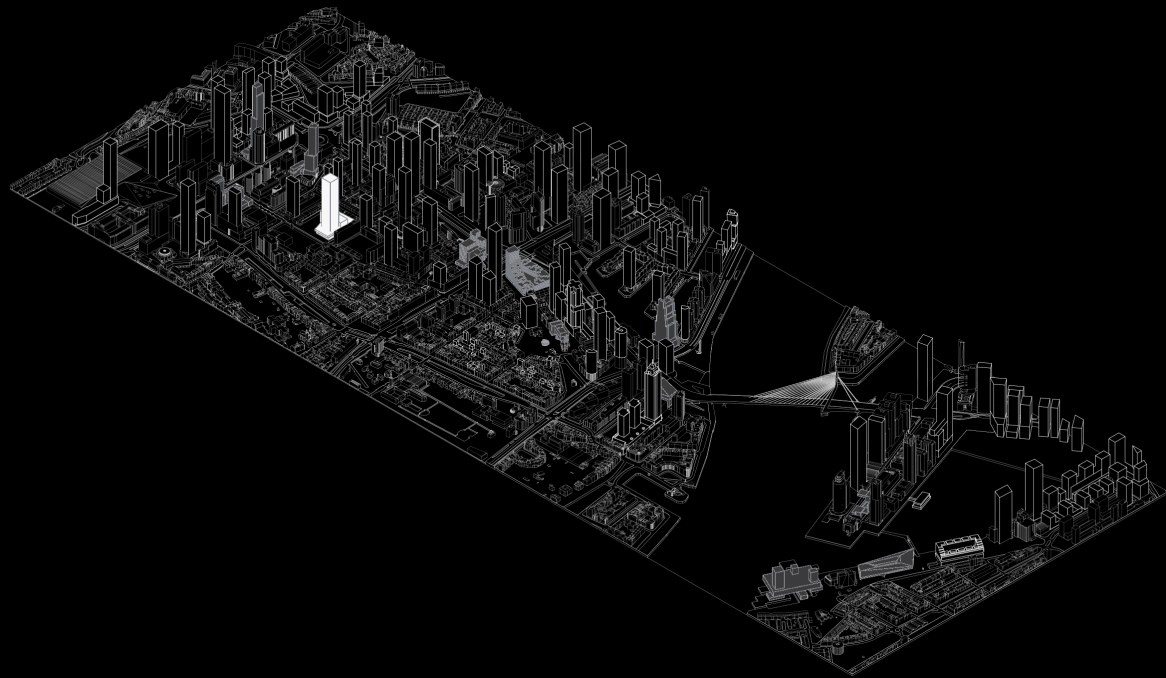


THE VERTICAL HIGH-TECH CAMPUS

by Jeroen van den Heuvel



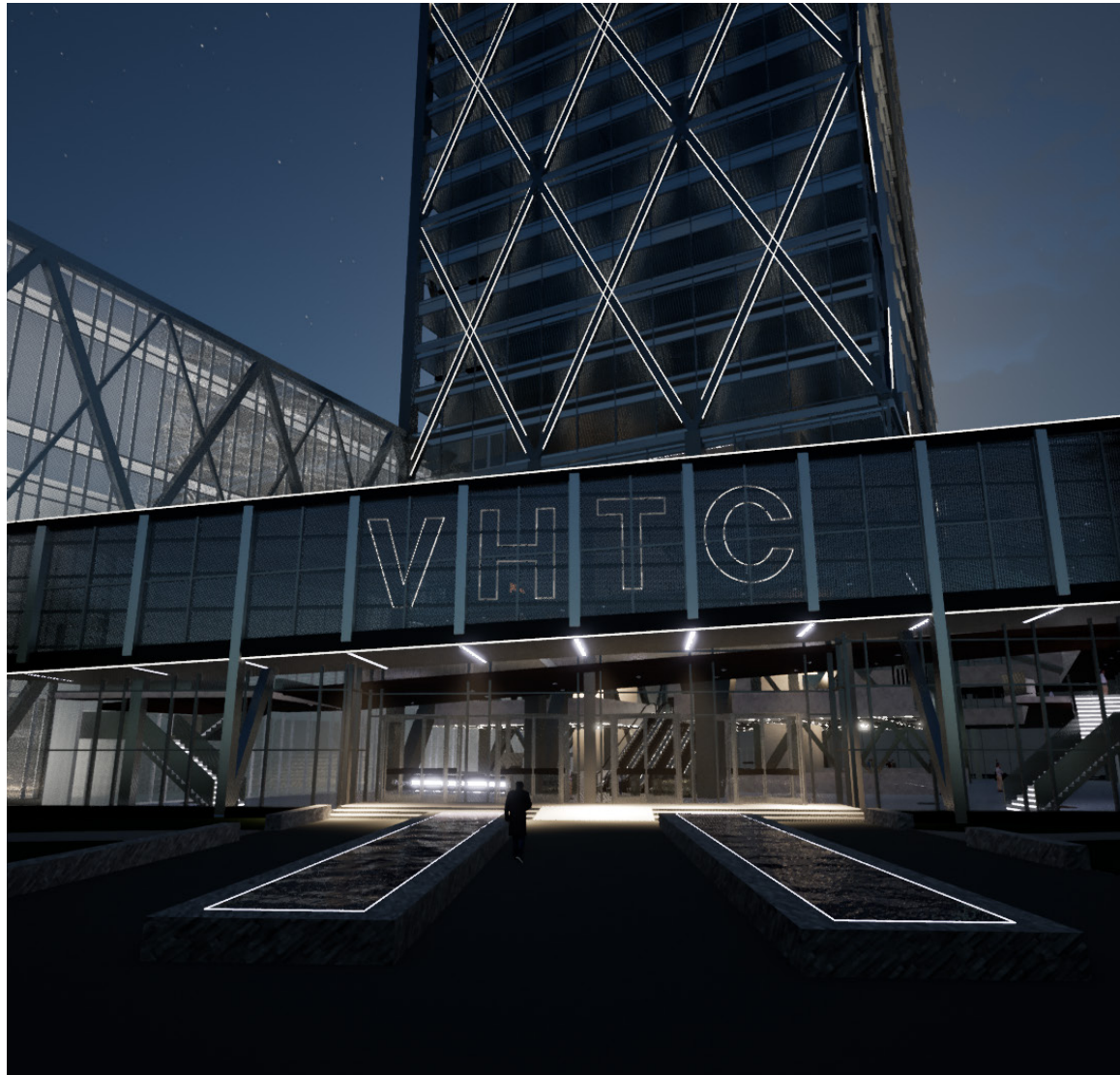
Introduction

Since the neoliberal implementation in the government plans of Rotterdam in 1987, the vision of the city changed quite radically. A decade before the change, the city rejected high-rise buildings. But since this new vision, called 'Nieuw Rotterdam', got approved, Rotterdam implemented a high-rise vision which made the city as it is today; defined by a modern character and full of high-rise buildings, at least for Dutch standards.

Yet, this high-rise implementation is only a small attribution of the conducted vision that was established in the late previous century. Neoliberal implementation goes further than merely implementing American-like high-rise buildings. It concerns the economics;

particularly the liberation of the market and the multinational business trend that defines the contemporary economical appearances of both city and country. Since the drastic changes in city vision, Rotterdam opened up its borders and adopted a desire for foreign business, to upgrade their economical game and compete against the economic prosperity of other cities.

Rotterdam therefore changed quite greatly since Nieuw Rotterdam was practically implemented. Its buildings grew, its habitants grew and it became a popular place for tourists. In the Netherlands, Rotterdam is known today for their rich modern architecture and its modern appearance. However, the



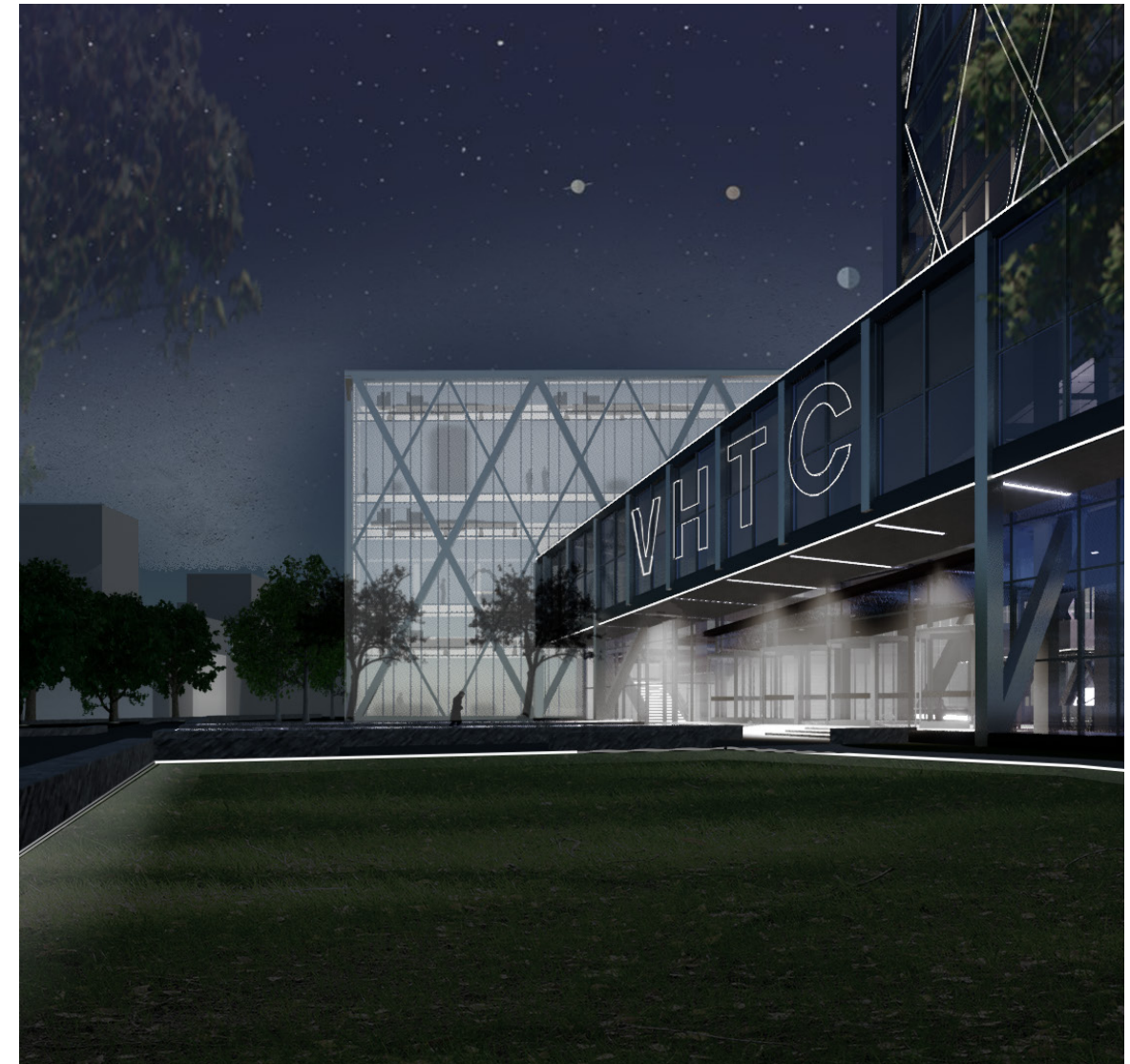
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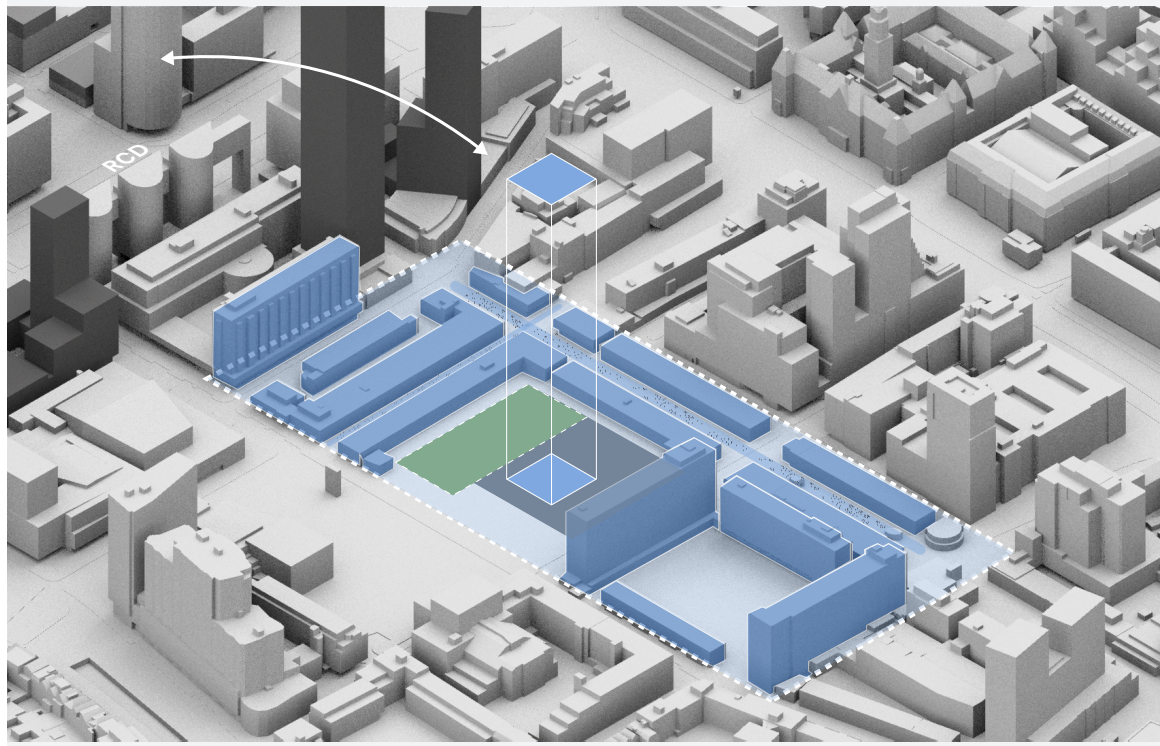
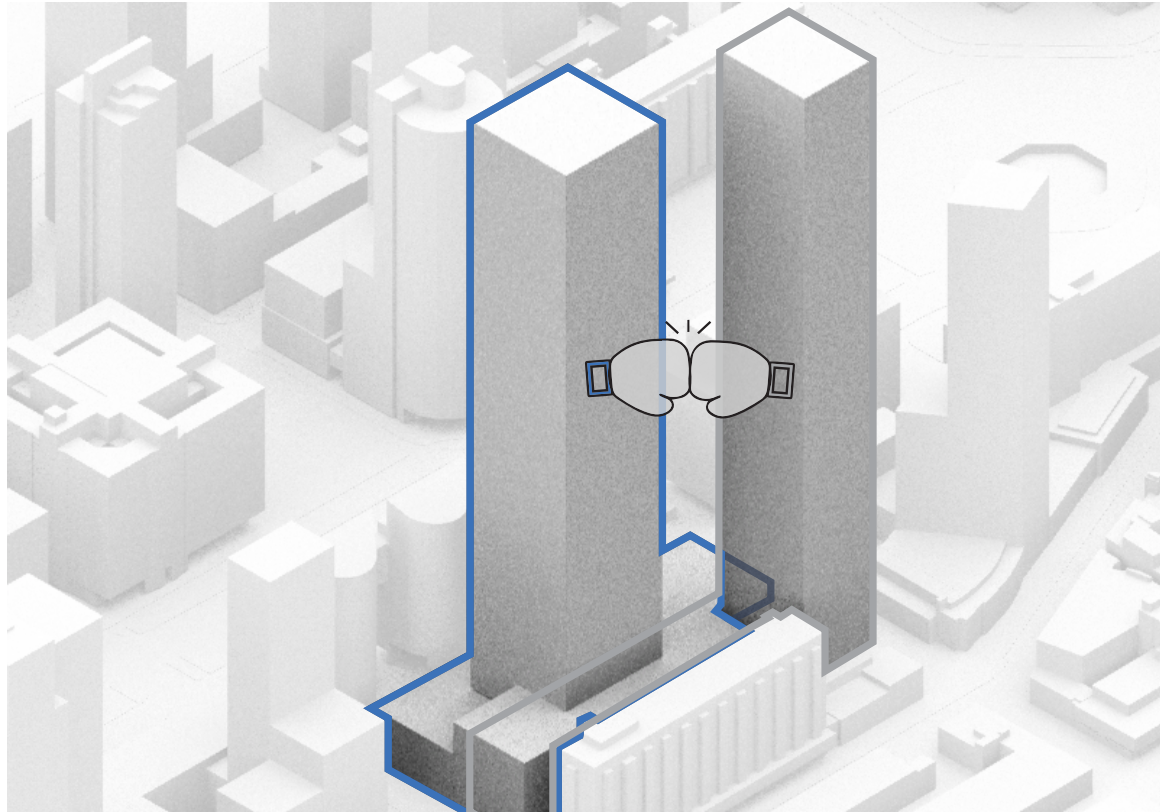
aspect of business, which has a high wish value in any city, is less thriving. While it started to aim at welcoming more foreign business about thirty years ago, Rotterdam today is still struggling to find and welcome foreign companies and multinational business into its city.

One of the primary reasons for this, is that both the city centre and its economical heart of the RCD, lacks an economical identity. Cities like Amsterdam has its economical identity of banks and datacentres, The Hague has its courts and ministries. In the previous century, Rotterdam did have its identity of the industry and the port, yet the neoliberal growth and privatization of those

instances led to the translocation outside the city centre. In addition to this, the economic sector of industry became less favourable, since the tertiary sector of a business service economy predominates a neoliberal oriented city.

The project of the Vertical High-tech Campus explores the promising economical sector of High-tech in combination with its research and business aspects in an urban environment as a step towards providing a new economic identity for the city of Rotterdam.





Brief

The project aims at the conversion of a common isolated campus outside city borders, into the urban life and fabric of Rotterdam. In this campus, the program derives from basically 3 main functions; the business, the research and the production. The different functions themselves are demanding a certain place in the building due to their requirements. The main quality of a campus lies in the collaborative aspect of mainly the business (corporate) and research (students and researchers). This means that the function of the campus isn't merely about work, but finds its real qualities in the establishment of interactive possibilities between different instances within the building.

The public plinth with bars, tech shops and expo spaces and an auditorium in the base of the tower, should provide the physical connection between city and campus, and public and workers. Within the tower itself, different interactive blocks are scattered throughout the different floors to provide the building with clear meeting spaces. These main interactive blocks should then be accentuated in base, middle and top in the form of respectively an auditorium, a skylobby + library, and a rooftop bar.

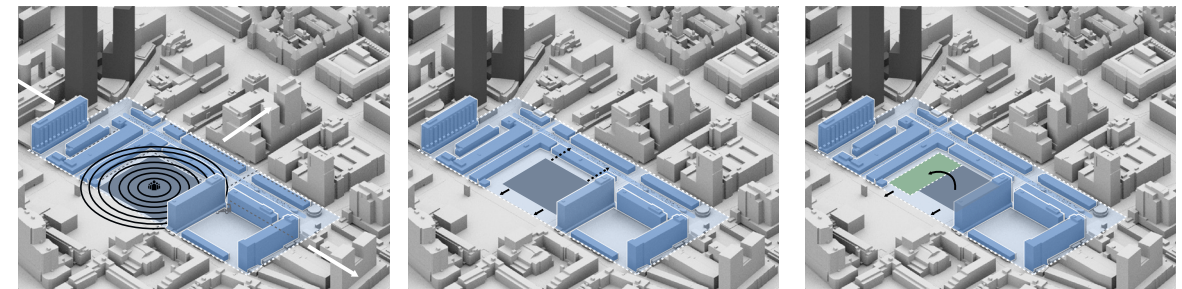
Location

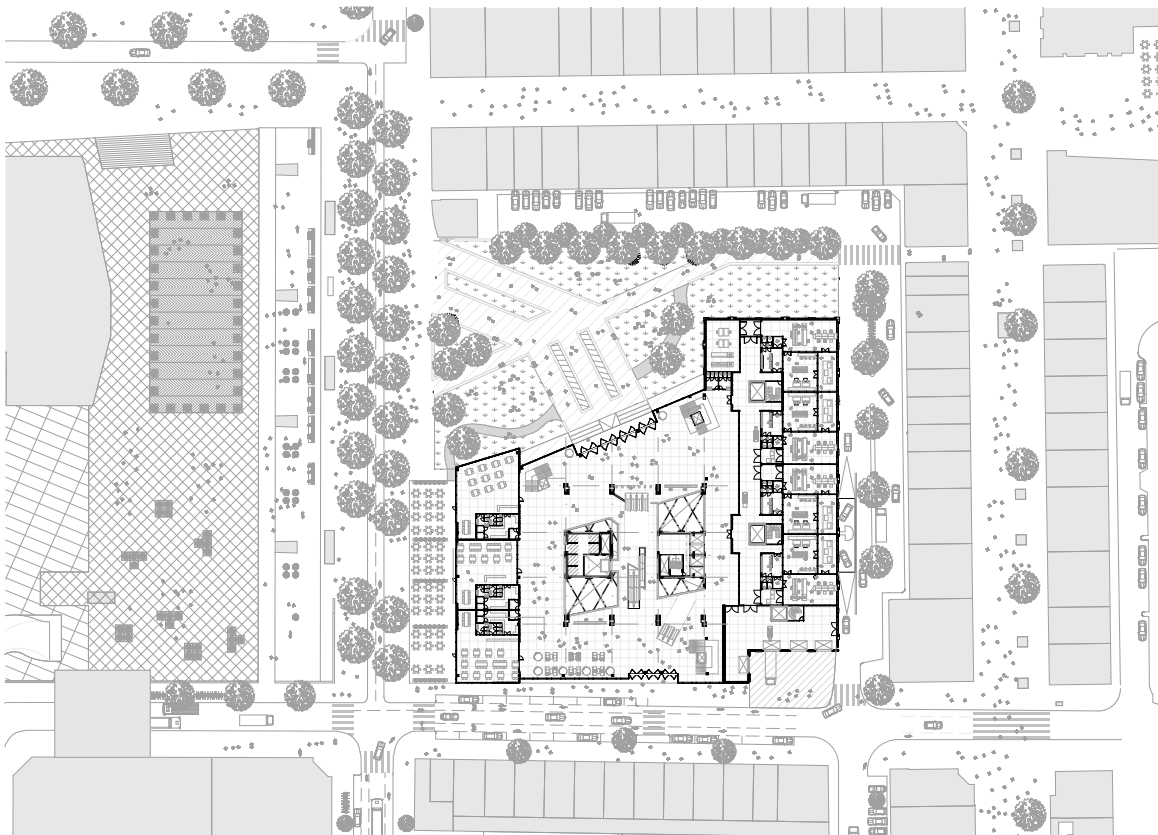
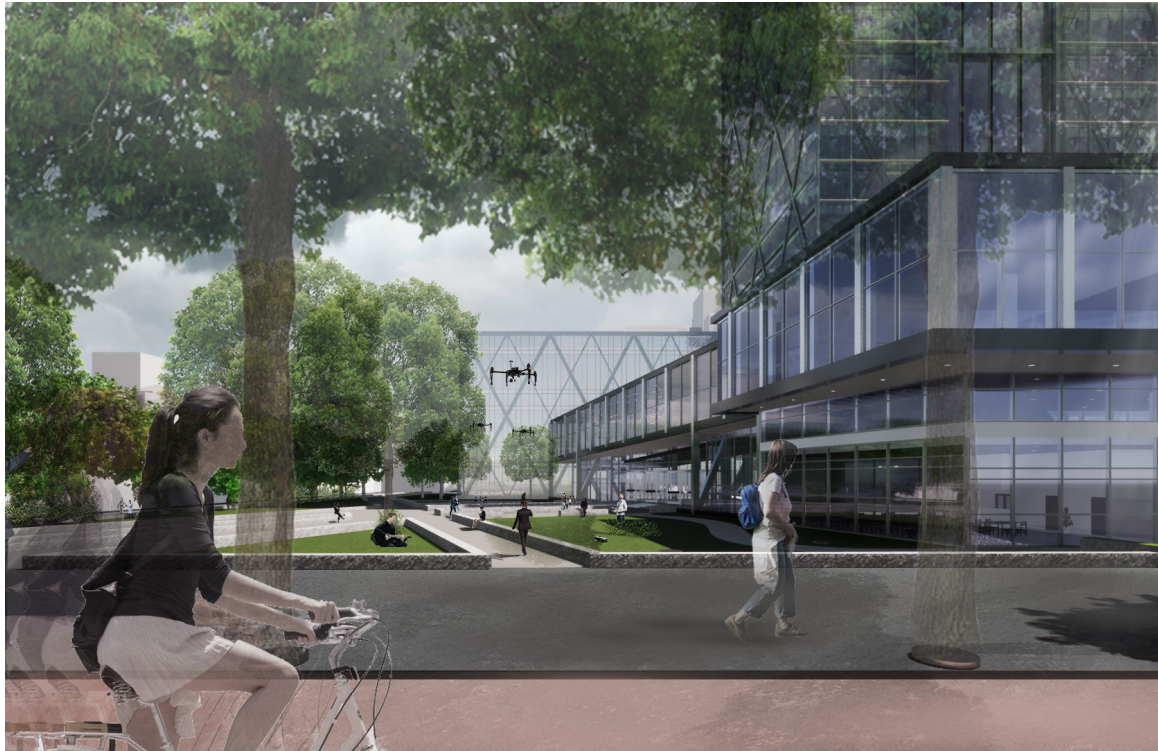
The area of the RCD around the Weena in Rotterdam, marks an economical area in Rotterdam that currently isn't fulfilling its potential. This central business district provides an unique situation as it is situated

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as an integrated part of the city, rather than a forced isolated financial district in the periphery of the city. This forced isolation is common in a lot of the big cities like Madrid, Paris and even Amsterdam because of their monumentality, with all the associated disadvantages like completely abandoned areas outside working hours and immense security spending. Yet, amidst the lack of an economical identity, the problem of mono functionality and traditional corporate offices dominate this integrated central business district in the city of Rotterdam.

But while the project was initially planned to be situated among the Weena, the rapid neoliberal growth in Rotterdam entails changeable circumstances in the city. The new announced project of the Lumière in the middle of the process, forced the resituating of the project. The combination of some already claimed plots by other developments in the RCD and a careful analysis of other possible plot areas, did eventually led to the relocation of the project more to the south, in the area of the Lijnbaan. The site argument arises from a revision in courtyard, mass and function, to boost the early flamboyant appearance of the Lijnbaan into a more lively area. In here, the project blurs the lines between the corporate northern area and southern amenities area of the RCD. In this way, the campus establishes a connection to the RCD through its mix of both corporate and amenity function.





Concept

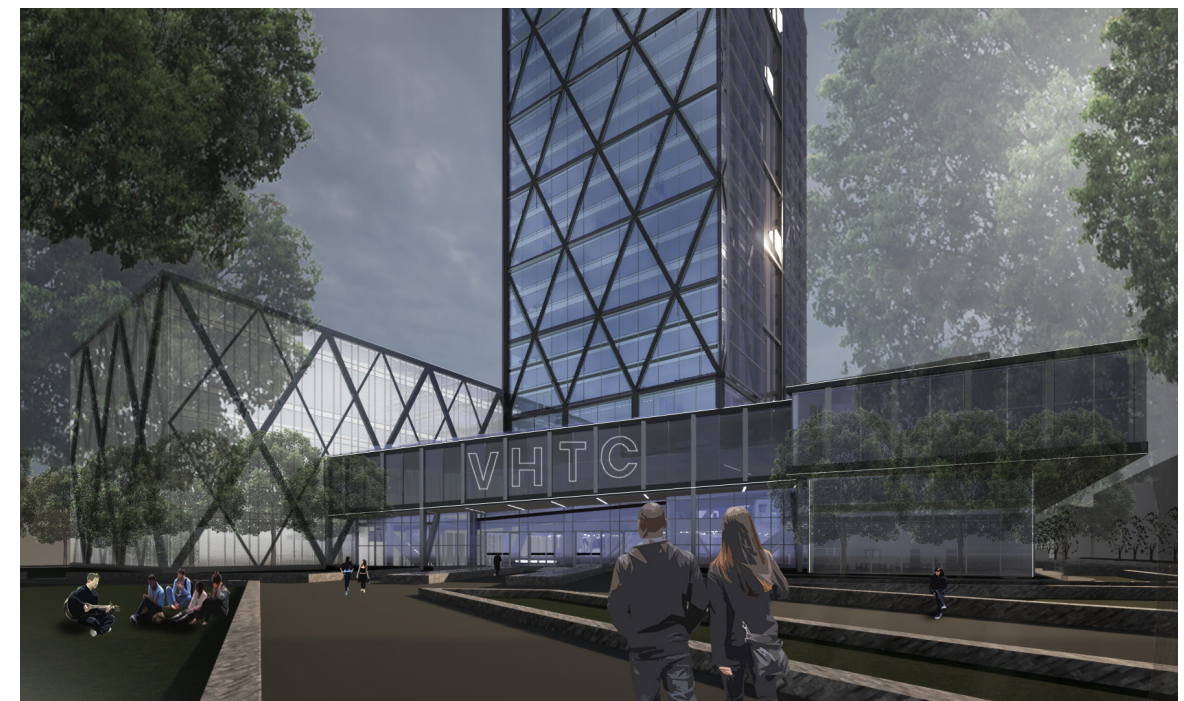
The vertical campus consists of two main parts; the lobby (plinth) and the tower. In here, the lobby marks the transitional zone from the physical urban life in the plinth, towards the mere visual connection in the introverted tower. The common public amenities of a campus, which are commonly scattered on a 2D plane due to the horizontal typology, will be transposed in a 3D organization which will form the transitional lobby. In here, the collection of amenities such as the expo, production hub, shops, restaurants and auditorium, will be visually weaved around the plot of the tower. The production hub at the same ground level will provide a visual connection to the lobby to accentuate the new identity.

The tower itself consists of 3 main parts, the lower, middle and higher part of the tower, which expresses themselves clearly in the façade of the building. The lower tower consists of mainly the laboratories and research hub and therefore will have relatively more private sensitivity. The higher part establishes primarily the corporate business function of the campus. Within this upper and lower part of the tower, a mix of different plans shall be organized in a clear way, according to split level principle. In here, these different

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split levels can be considered as 'faculties', where this can be seen as a collection of cut-out parts of different campus buildings plans that are stacked on top of each other and thus manifest themselves as the vertical campus. It provides opportunities for different kinds of work and spatial layouts and therefore the function of the campus answers to the posed problem of the monofunctional corporate office buildings scattered around the RCD as well.

The middle part of the tower consists of the semi-public function of a sky lobby and a library, which expresses itself in the façade as well. The sky lobby marks a central area in which a more public domain is established by providing space to meet and to pause. But more striking would be the transition from the one core to other. The split core provides a strong advantage in the dense and space consuming vertical mobility of the campus. The situation of the cores at the sides of the tower, also opens up the center of the tower, which provides clear space for the collaborative and meeting aspect of the campus, which is so highly desirable for a campus to be qualitative valuable as a function.



Interactive tower



Design

Since the plinth presents the high-tech identity and the campus directly physically to the urban life, a high value of transparence is established in the ground floor of the lobby. The offset layer of the façade of the lobby above has a vertical pattern which is derived from the Lijnbaan itself.

The distinguishing between the public and private part of the building, is accentuated in the matter of one enters the elevators to the tower. The entrance of this segment, is a lifted floor which borders itself as an island from which the tower is being reached. Around this lifted floor a spatial 'canal' is created to isolate it from the public floors above, yet provide visual connection and vertical openness throughout the different floors of the public plinth.

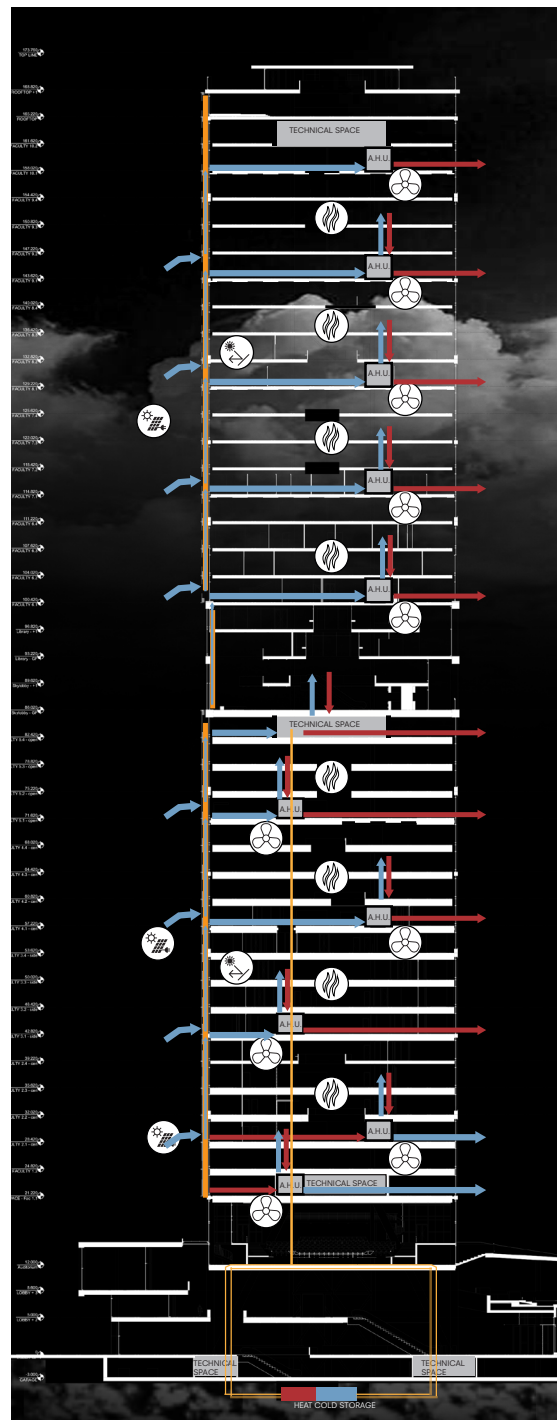
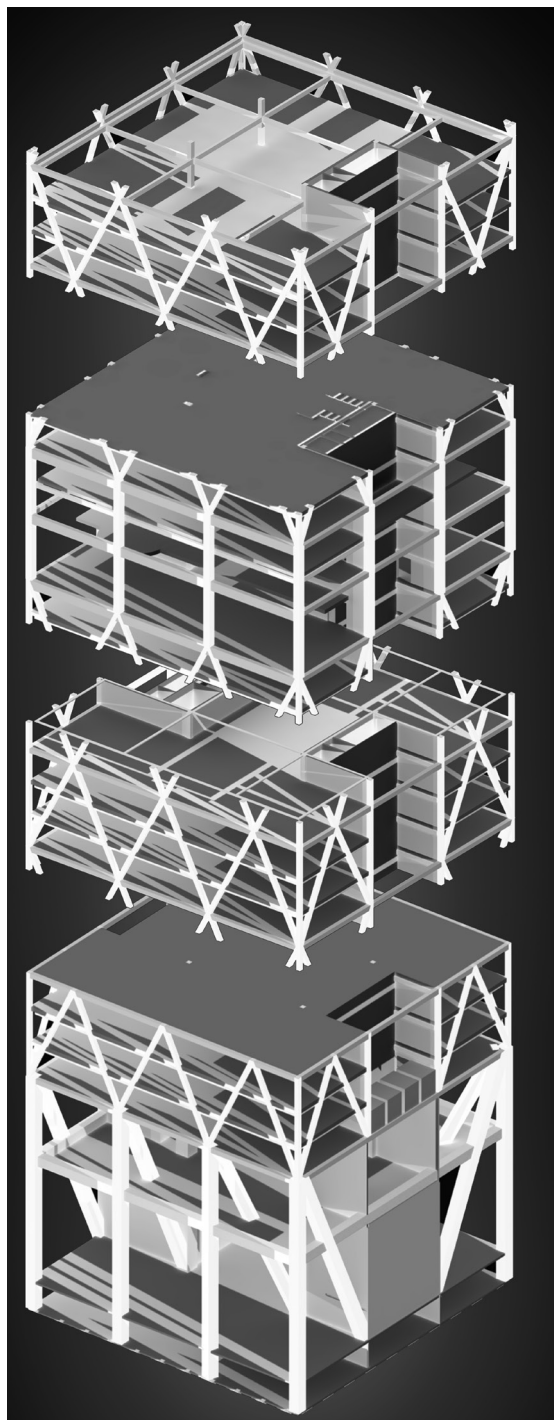
The tower distinguishes itself with a lot of different kind of workers, but most noticeably would be the different group of business workers and students. These two groups can be considered as formal (the business

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workers) and informal (students), since the business workers have fixed working spot and know how to reach their destination, while the students have to find a study spot as is common in a campus. In here the vertical challenge of mobility of people arises, of how to provide a route that prevent the student from traveling up and down. Therefore, a formal route and informal route is considered, with the formal route being the elevators at the sides, while the informal route weaves itself through the tower diagonally, with a direct connection between the faculties.

The campus has now become part of the urban fabric of the city of Rotterdam and this has to be emitted towards the city life, yet the tower, among most of the towers, are more introverted because of their typology. To establish a connection between the tower typology and the city itself, a clear visual connection is made in the side of the towers by making the elevators transparent and make the vertical mobility an extroverted journey.



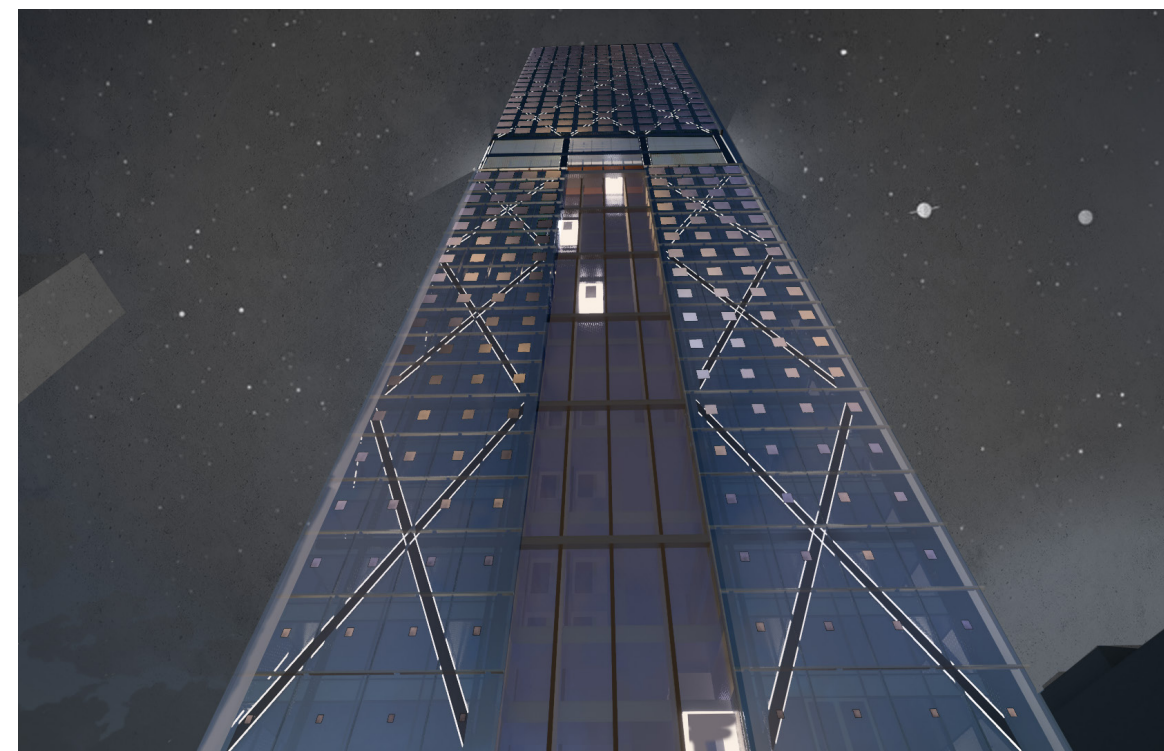


Structure & Climate

The kind of structure that is implemented answers to the desire for the mix of different kind of plans throughout the building. The ability to implement these different plans in one building demands a rate of flexibility in the interior in which the construction has to function as the balance between flexibility and a structure that doesn't take up unnecessary, valuable space in the vertical section of the tower. For this reason, the building finds its stability in a diagrid structure, which also expresses itself in the façade. The diagrid structure provides opportunities to have a minimal amount of columns in the interior, but is also able to let the cores play a less significant role in the construction and therefore open the core at the sides in a way that the vertical journey of the elevators can be made highly visible in the façade. By pushing these cores to the side, the central space of the tower opens up towards the remaining sides of the building, thus providing a centralized space which is used for the collaborative and interactive spaces through some of the faculties.

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The most striking part of the climate principle would be the climate façade which integrates itself both as a climate advantage as well as an element to provide the privacy in the lower parts of the tower where the research hubs and laboratories are situated. A gradient pattern marks the transitional tendency towards the tower opening up more the higher it goes. Air handling units, grouped per faculty, provide the ventilation and temperatures in the building in combination with floor heating. In here, dependent on the season, the climate façade either serves as an air exhauster or an air supplier. The horizontal floor construction immediately provides space for tubes throughout the building. However, the R&D situation in the lower part of the tower, demands an higher amount of space than in the higher part as well as a more stiff construction because of the amount of possible machinery that is present. These two demands are combined by making the vertical grid of the tower in the lower part slightly different than in the higher part, to continue to make optimal use of the possible maximum surface.







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