

# ROTTERDAM ATHLETIC CLUB

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**Introduction**

If we divide an average day of us, human beings, we can identify three main phases; sleeping time, working time and leisure time. A well-known example of leisure time is sports. Sport is everywhere. Sport is healthy, both mentally and physically. Sport connects people, both on and off the field. A less known example is a sports facility that aims to connect people, is the Athletic Club. These exclusive clubs, - which are, in their essence, a combination of a social club and a sports club – can be found all over the United States and one is even subject in Rem Koolhaas' Delirious New York. In this book, Koolhaas describes the Downtown Athletic Club and its main function; to intensify the social interaction of its users. One characteristic all Athletic Clubs have in common is their location; a dense city centre. With Rotterdam going through major densification right now, the migration of the typology of the Athletic Club is a useful graduation topic. In addition, the lack of club sports in the city centre of Rotterdam strengthens this possible migration even more. The resulting research question follows; *How can space-consuming leisure sports be implemented in a densified city centre, in order to be a social condenser?* In other words; how can we create the Rotterdam Athletic Club?

**Brief**

The project aims to create a vertical sports facility in a densified city centre, in order to intensify the social interaction of its users. In order to realize a complete and coherent project, a design brief is developed. This design brief is divided into three parts; programmatic rules, urban rules and character rules.

The programmatic rules explain the size and footprint of the building and how the free span of the sports function need to be managed. The main driver for these programmatic rules is logically the program. The program consists of multiple functions, such as; sports facilities, social amenities, wet rooms (toilet, dressing room), a hotel, horizontal/vertical movement and storage/ utilities.

The urban rules explain the possibilities and limitations of the project's location. As mentioned above, the location of an Athletic Club is of significant importance. To make sure the project succeeds in its social function, a dense area with a lot of new urban development is selected; the Leuvehaven. As part of the group vision and, more specifically, the Cool New District, the Rotterdam Athletic Club will function as a catalyst for the new urban development in that area. The southern corner of the old Leuvehaven is a location with the possibility to densify; a new sports tower could be the final part of the enclosing of the Leuvehaven. In addition, at that specific location, the project can be a landmark; an eye-catcher along the Maas. Next to these possibilities, the site restrictions can have a similar influence on the projects design choices.

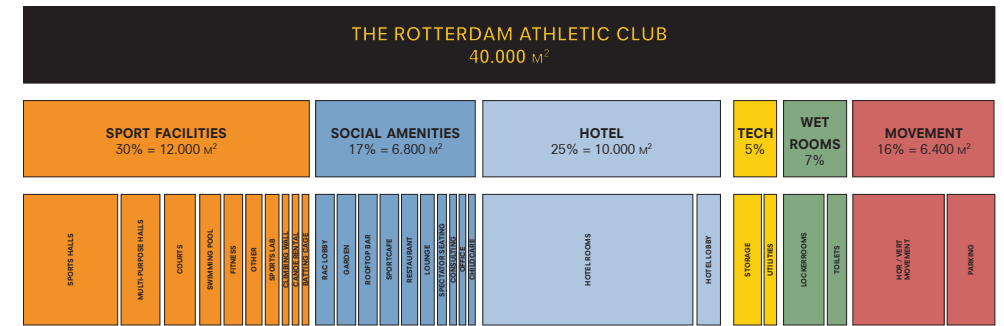
Following the Rotterdam High Rise Vision, a set of rules can be applied to the location, such as a maximum building height. Other examples of site restrictions are the height difference of the dyke and the connection with the other amenities as part of the group strategy.

Lastly, the character rules clarify the goals for the expression of the building; how should the building look and feel. The Rotterdam Athletic Club will exude luxury but will remain accessible for the common people. This luxury is reflected in the layout and materialization of the building. In addition, the project tries to create a reoccurring contrast between open and closed.

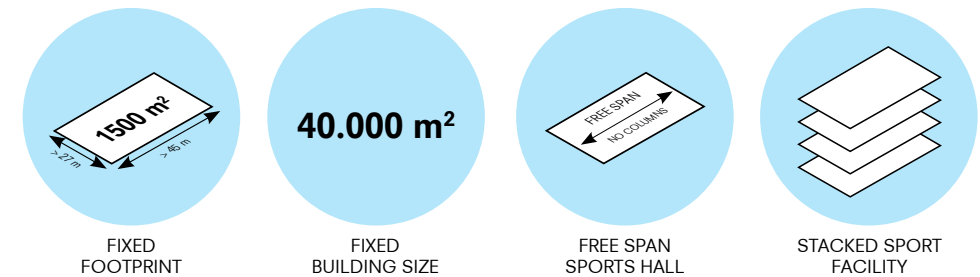
**Concept**

Based on the design brief and formed through a process of trial and error, a concept is created to embody the identity of the Rotterdam Athletic Club. The concept of the project consists of three parts; mass, program and architectural expression.

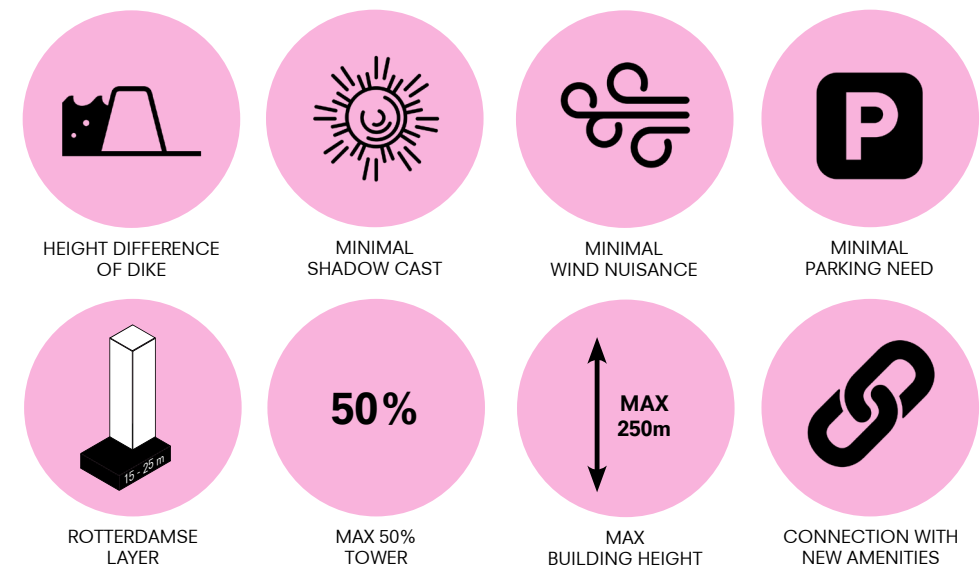
For the massing, a variety of types and possibilities is tried and analysed. The different options followed the design brief



**PROGRAMMATIC RULES**



**URBAN RULES**



**CHARACTER RULES**



fairly consistent, with a few exceptions. The result of the mass study is a straightforward extrusion of the fixed footprint determined in the design brief. With this mass, the stacking of sport and social amenities is best achieved, while still ensuring one coherent mass.

For the programmatic concept, there were two options; to split the functions or to mix the functions. The Athletic Club is a typology with multiple functions, however, they feel like one club through the mixture of these functions. In that sense, the choice for the programmatic concept was simple; creating a mixture of functions. Important to note; although functions are mixed, the stack effect is still in place.

The architectural expression has been the toughest aspect of the concept. The project struggles with the balance of being a luxurious club for the elite and an accessible club for the common people. I will elaborate more on this in the final part of the reflection; ethics. The final concept for the architectural expression consisted of a clear division between 'open' and 'closed'; the building should be closed to create this exclusive impression but should be open to feel inviting and accessible.

## Design

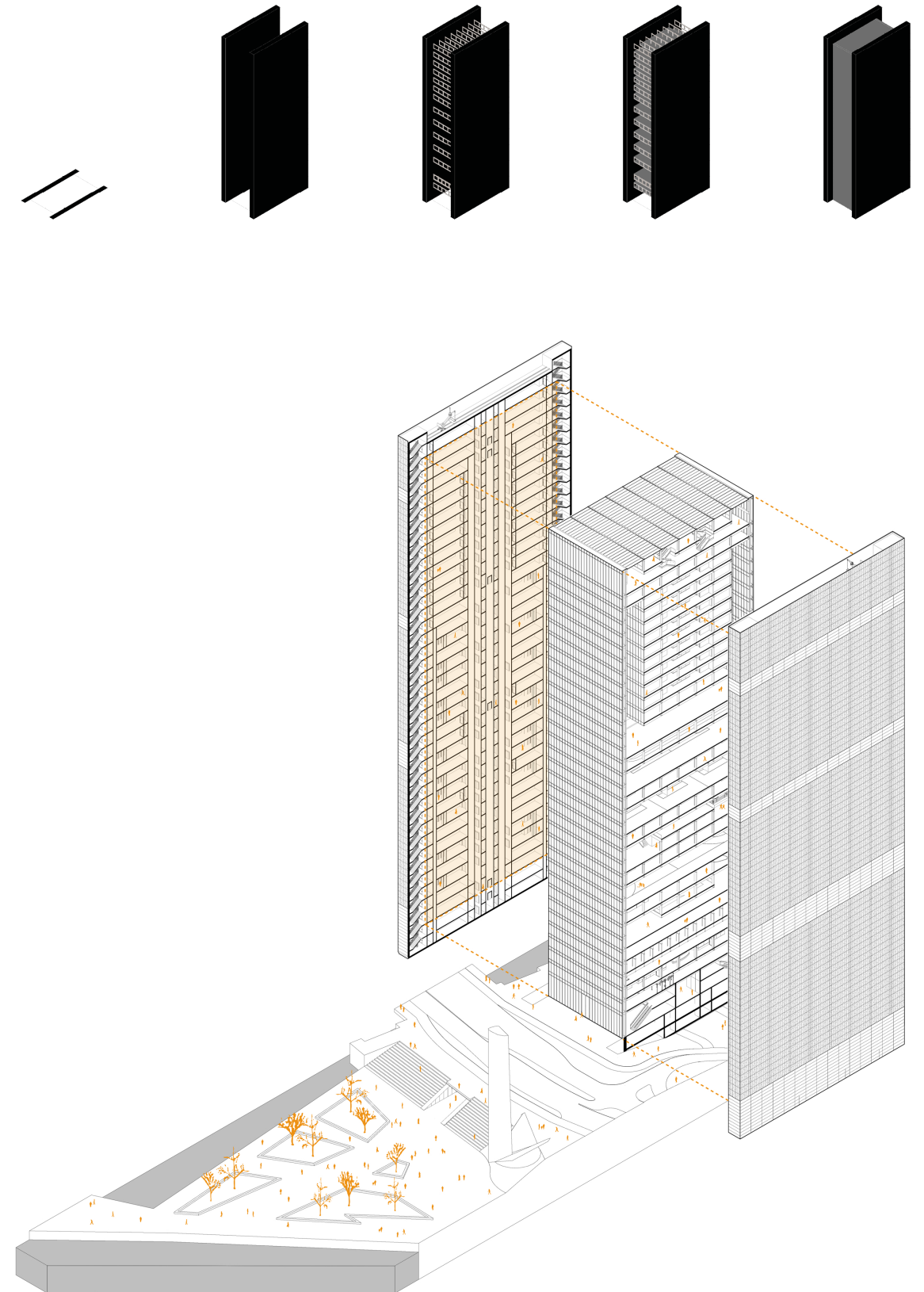
The mass of the final design consists of three main parts: an 'open' mixture of functions in the centre, supported by two 'closed' infrastructural slabs on the East and Westside. The central mixture of functions will take shape through the extrusion of the fixed footprint, which is based on the needed dimensions for a sports hall. This extrusion is filled with a mixture of activities, such as the social amenities, the hotel and the sports facilities. In this part of the building, the focus is on the activity. Contradicting the open centre, the two supporting slabs are completely closed; a blind façade. Due to the fact that the central part is based on the footprint of a sports hall, the structural core cannot be placed inside this zone and therefore is forced to be placed next to the fixed footprint. With its closed character, the slabs will function as the core. Next to their

function as the core, the slabs will host the vertical movement, wet rooms, utilities and storage; all the preparation before going into the activity itself.

Another aspect of the design is the routing. The building has three options to enter; the main entrance at the Boompjes dyke, a car entrance at the Terwenakker quay and a second pedestrian entrance at the Boompjes Boulevard in the form of a tunnel into the building. The connection with the Boompjes boulevard is important since a lot of sporting and social activity is happening on this waterfront. In addition, it will connect to the new pedestrian bridge to the West and the Bank of MAAS. All three entrances come together in the main lobby, from where the user can take one of two so-called sky-elevators. These high-speed elevators enable a fast distribution over the whole tower. From the sky-lobbies, the user can transfer to the second system of elevators to bring them to their designated floor.

Just as with the expression of the building, the experience has to be a great balance between luxurious and accessible. In other words; it should be open to every Rotterdammer, but has to feel exclusive. By using 'expensive' materials like marble and the implementation of a fully-automated parking garage, will create this luxurious feeling. I imagine every member feeling special when a butler serves you a tray of oysters at your arrival in the club. Another aspect of the experience is the routing through the infrastructure slabs before going into the designated activity. Think of a user standing in the elevator, which opens up directly into the dressing room. After changing, the user exits the slab to start a game of basketball with his friends. After the game, they can change and move on to another floor to have a drink afterwards or go into one of the other activities; giving the user a feeling of complete freedom.

The structure of the building is not a standard structural scheme for a tower. Due to the fact that the cores are located on the sides and that there are no columns allowed on the sports floors, the floors need to span in between the



slabs. With this distance being 27 meters, no reasonable floor type can span this without support. To create the column-free spaces story-high Vierendeel trusses are used. These trusses span between the two slabs, resulting in the floors spanning in between the trusses. By making a stiff connection between the trusses and the slabs, the whole building will function as a vertical Vierendeel truss.

Lastly, the climate is designed in an integrated way into the building. Through the use of the closed infrastructure slab and the glass double-skin façades on the North and Southside, the building will generate energy, which will be used to 'fuel' the building in its energy needs. In a building with functions as mentioned above, the necessary amount of energy will be significant and the climate is, therefore, an even more relevant aspect of the building.

### Material

The exterior materialisation can be divided into two parts; the 'open' double-skin façade and the 'closed' façade of the two infrastructural slabs. The double skin façade consists of two elements with brushed aluminium as a trim and filled with glass. This transparency will ensure the open look of the middle part of the building; the area where all the activity is happening. Next to the glass part, the elements will be filled with either a transparent ventilation grille or with a sun shading system, which is hidden behind a black coated steel panel.

Instead of the open character of the double-skin façade, the slabs will have a closed character. The structural concrete will be clad by two materials; at the lobby floors with black marble panels and the other levels with black glass PV cells. Each PV cell will generate electricity and will have a LED dot, which makes a pulsing motion to create the look of a starry sky on this façade. The two different materials will be separated by a gold trim with an integrated light strip, showing the different layers even more. The reason to use light as an element in the façade is twofold; it's a reference to other buildings along the

Rotterdam waterfront with light as a feature and it's a way to make the façade interesting both during the day and at night.

The interior materialisation aims to reach two goals; to create this exclusive feeling and to create a link to Rotterdam. By using white marble, warm wood and gold (painted steel), this luxurious feeling can be achieved. To create the link to Rotterdam, more industrial elements are added, such as exposed beams and columns, bare concrete walls and polished concrete floors. By combining the two types of interior materialisation, the project will give this exclusive feeling, but will still be unique due to the link to its location.

### Conclusion:

The answer to the research question turns out to be quite simple for this graduation project. How can space-consuming leisure sports be implemented in a densified city centre, in order to be a social condenser? Well, by creating a vertical stacked sports facility on a very dense and developing location, a first step has been taken. By making sure that both social amenities and sports facilities are completely integrated with each other and with the building as a whole, the project will function as a social condenser for its users.

Reflecting on my final year at our faculty, I can definitely say that I learned a lot, both on academic skills as on design skills. I think the summer break between the two phases has resulted in some struggles with getting up and running again, especially since creating an architectural mass 'out of the blue' is still one of the hardest things for me. At the start of the project, the topic of sports was chosen easily, since that is where my ambition is. Having a topic so close to your own interest makes the process much more interesting.

Let me conclude by thanking my tutors for the guidance throughout the year and for all the inspiring sessions we have had. Thanks to them, I am proud on my final graduation project and I will look back positive on a year of personal and professional development.









