



IJBOULEVARD, LOGISTICAL AND TECHNICAL INGENUITY LEAD TO FABULOUS BICYCLE PARKING

An architectural and structural surprise underneath the IJ. That is the best way to describe bicycle parking IJboulevard. Here – at the busiest point in Amsterdam’s infrastructure location – ships sail past, the Noord-Zuid metro line passes underground, train passengers come and go in droves, and people are strutting across the roof terrace along the IJ. Despite all of these traffic movements, the bicycle parking is very peaceful. Owing to the power of the architectural design and the detailed manner in which the wooden ceiling strengthens the rhythm and flowing style.

VenhoevenCS was commissioned by Van Hattum en Blankevoort for the architectural design of the IJboulevard. A project that, even before completion, had captured the imagination of many. Prefab concrete tubs - manufactured in the Westelijke Havengebied - were placed on an immersion pontoon, transported over the IJ for 15 kilometres and then placed onto 72 foundation piles on the North side of Amsterdam CS.

Delivery over the water

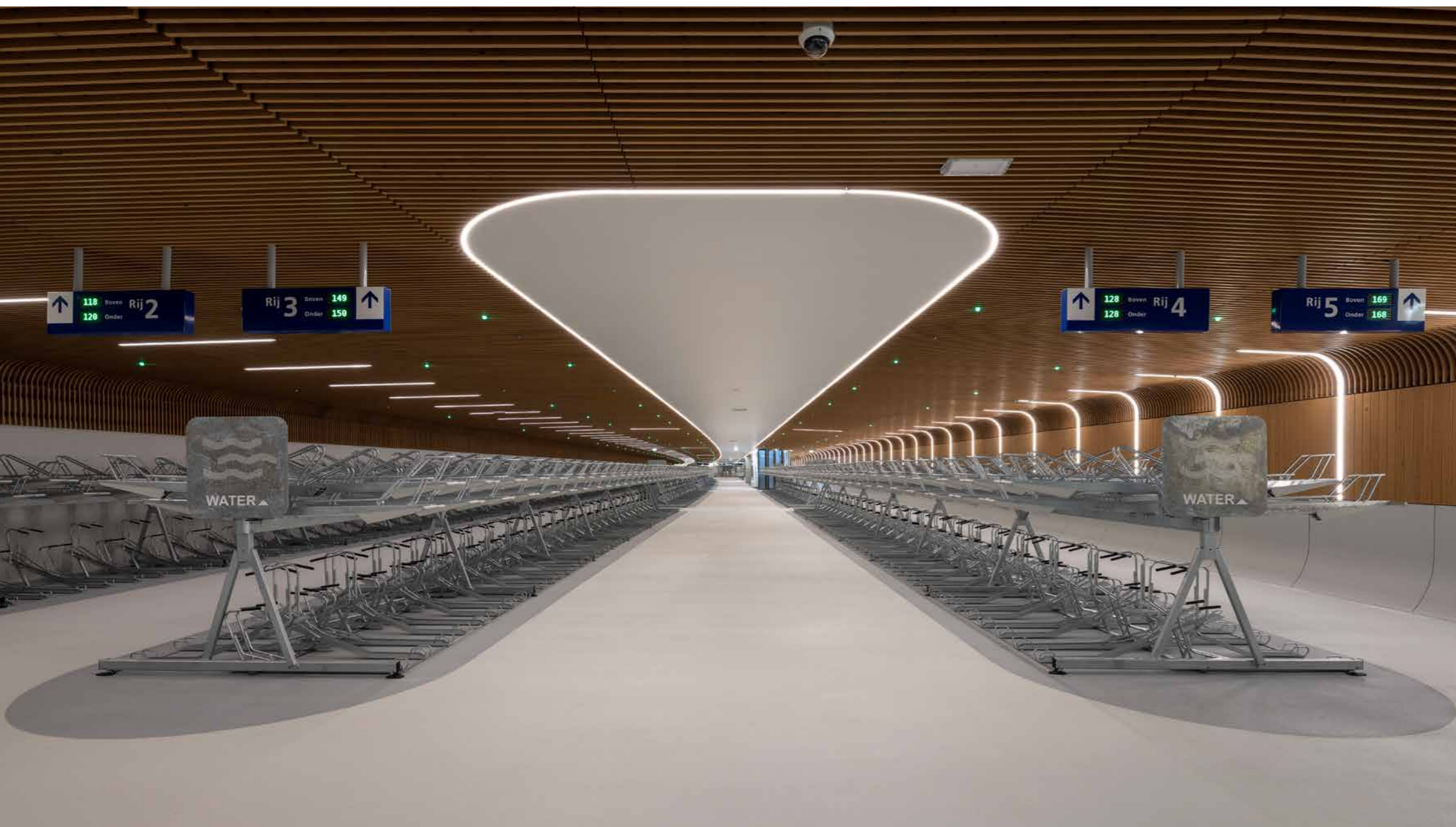
Other construction elements and materials, such as the solid wood wall and ceiling systems, were also delivered over the water. "The construction hub was located on the Melissaweg in Amsterdam-Noord. That is where the construction materials would first arrive. Twelve deliveries, which were delivered by Derako, at three-week intervals, exactly in line with our installation schedule.

Packaged in custom size crates to minimise the risk of transport damage. And supplied in packaging that Derako took back and reused", says Aad Blaauw, work planner at Verwol. "We informed them of the weight and the dimensions and checked the quantities, after which we handed the materials over to Van Hattum en Blankevoort. Because, as the main contractor, they were responsible for the transshipment and delivery to the construction site."

Fitted with a crane, the ferry crossed the IJ more than thirty times to deliver crates of grill ceilings and linear wall systems to their final destination. "Where they were then hoisted onto the roof and into the bicycle parking." A logistical masterpiece that underpins the collaborative qualities of all parties but which was only the first step in the realisation of the IJboulevard. Everybody's technical expertise was then yet to be put to the test.

Slight radii require precision

"In this 'underground' bicycle parking everything is round, both horizontally and vertically", states Maurice Ligtoet, project leader at Verwol. "That imposes special requirements on the engineering and processing of the ceilings and walls, because it is exactly in that processing of a natural product under slight radii that precision is of such great importance." That is why, in the spring of 2020, Derako International and Verwol began their preparations, long before completion. As part of this, Derako made a technical translation of the design into the solid wood systems and worked out a detailed installation plan. While Verwol worked out the architectural aspects of this enormous project down to the tiniest details.



Solid wood ceiling

All in all, 3,700 square metres of solid wood Grill ceiling system and 200 square metres of Linear wall system was supplied for the IJboulevard. The FSC pinewood components in the Grill system are 20 mm thick and 53 mm high, with a spacing of 55 mm. While the Linear slatted wall consists of slats measuring 15 mm thick and 92 mm wide. "The Grill panels are all completely straight, but during finalising of this project, we made an adjustment", Tim Tolsma, Sales Manager at Derako International, explains. "The final position of the wood towards the dowel (the connecting element in the Grill) is 3 mm less on the inside than it does on the outside of the panel (451 mm). As a result, in the horizontal direction, the wooden components bend towards the line of the main construction. This made it possible to incorporate the curvature in a natural way, without having to produce special fan panels." But in the vertical sense, the ceiling system also forms itself to the curvature of the architectural design. The stretch ceiling is the only truly level part.



"That is why, during installation, the stretch ceiling served as a calibration point for the solid wood pine Grill system that gets slightly angled as it approaches the walls. From there, specially CNC-machined curved Grill panels provide a smooth transition to the Linear wall system." These are delivered prefab for quick and easy installation.

Double grid

Engineering of a wooden ceiling like this is one thing, but the finesse is achieved through precise installation and implementation. Here too the expertise of both parties can be seen. Blaauw: "Height differences are visible in the stretch ceiling but they don't interfere with the overall picture thanks to the smooth manner

in which the 350-metre LED line encompasses the borders of the white ceiling. Only when a keen eye looks behind the wooden ceiling, can the level differences be seen." Thanks to the black suspension construction, these details are optically almost entirely eliminated. But between the slats, a glimpse can still be caught of the double grid that was used and the quick action hangers with which the top grid was attached to the construction. "A job that requires precision, because one dissonant and the rhythm of the design is disturbed. That is why - working from the centre outwards - the mounting points were determined using a laser. It took two contractors two full weeks to complete this."





Finetuning in BIM and a mock up In

addition, the careful integration of light fixtures, sprinklers, parking detection and sound systems is noteworthy. Such as the LED lines that follow the organic shape of the central ceiling, but were also incorporated symmetrically in ceilings and walls. "Based on the design, Verwol worked out a proposal to create 21 wooden components in custom sizes, with the two outer-most parts of the work being cut to width. As part of this, Derako developed a special wall pattern of 97 mm. This created a 5 mm seam between the slats, making a perfect fit for the LED lines", explains Tim Tolsma, Sales Manager of Derako.

"Everything was worked out in BIM and we also planned weekly meetings right from the start", Blaauw adds. "With the contractor and the architect, but also with the supplier of the glass walls and the installer. Especially when details and connections require so much precision, it is important to get together regularly and keep the BIM model optimised." In addition, a beautiful mock up was made of the ceiling, including the installation components, so that the parties could dot their i's and cross their t's together.

IJboulevard

Client: Municipality Amsterdam in collaboration with Transport region Amsterdam and ProRail.

Architect: VenhoevenCS

Contractor: Van Hattum en Blankevoort

Engineering and installation wooden ceilings,

stretch & metal stud ceiling and walls: Verwol

Supplier wooden ceilings and walls: Derako International

"Visualisation is an essential component for avoiding surprises during the implementation. In addition, it allowed us to do the necessary finetuning. And to jointly look for solutions for the integration of, for example, security cameras and parking detection. Homij, for example, developed special brackets for the fixing of the red and green detection lamps."

Subtle details

It is the subtle details that the soon to start arriving 4,000 rushed cyclists will completely fail to notice. Just like they will most likely speed past 'The Threatened Swan' by Jan Asselijn and won't have time to take in the careful embedding of it on the short side of the bicycle parking. And who will even notice the obviousness with which the wooden wall elements are exactly aligned to the curved concrete retaining elements because Verwol installed these retaining elements after the processing of the Linear wall system? And yet, it is exactly these fine details that create the sense of space and, thanks to the craftsmanship and collaboration, give the powerful composition of VenhoevenCS that capital city flair.

