SuperHub Meerstad – more than a supermarkt

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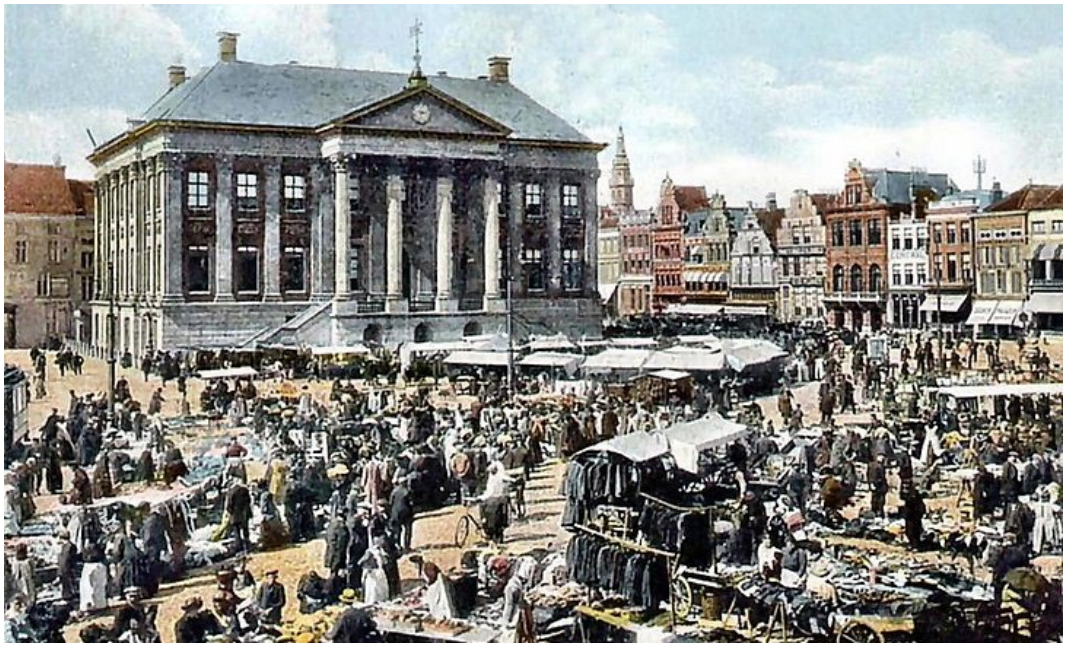
SuperHub Meerstad

Meerstad is the greenest part of Groningen, known for its space, greenery and the lake – the Woldmeer – that was recently created there. There's no rumbling traffic here, but only the rustle of reeds. It's a place that inspires an energetic lifestyle, where sustainability is the most natural thing in the world. In the coming decades, about 5,000 homes will gradually be built in this area. SuperHub Meerstad will take on the function of the neighbourhood's centre – a function that will grow with the development of the district.

Picture 1: Situation Groningen-Meerstad

Erik Roerdink, partner and architect, De Zwarte Hond: «SuperHub is about creating the supermarket of the future. The building is more than a supermarket. It's also a meeting place, in the way that the market used to be a place for meetings.»



Picture 2: The Groningen market: a place of meeting

Picture 3: SuperHub: the supermarket of the future

1. Facilities and experience

The idea behind the design of the building is that it will grow with the developing neighbourhood and continue to offer opportunities for all kinds of functions. Initially a supermarket, later it can also be used as a place to live, or a school, museum or community centre. A pioneering building that grows with the neighbourhood, in addition to providing basic necessities it also provides spaces for meeting, activity and entertainment. In filling public functions, it acquires a social role. This means that the building will have to be extra attractive to ensure that people enjoy spending time there.
The design for SuperHub is currently a spectacular supermarket that offers you views of the surrounding nature while shopping. Shopping here is a special experience. In addition to the supermarket, there is also a café with a terrace in the park and a parcel service point.
Because SuperHub is located in a park, it is really important that it fits in with the environment. Due to its all-round character, SuperHub Meerstad easily blends in with the school and the homes on the north side of the building. At the same time, there is a connection on the south side with the newly constructed Meerstad Park and the Woldmeer, which provides views of greenery and water. The building is located at the intersection of important access roads and recreational routes and is easily accessible from all sides, including by bicycle.

Picture 4

Picture 5: SuperHub is a building that grows with the city

1.1. Building in wood

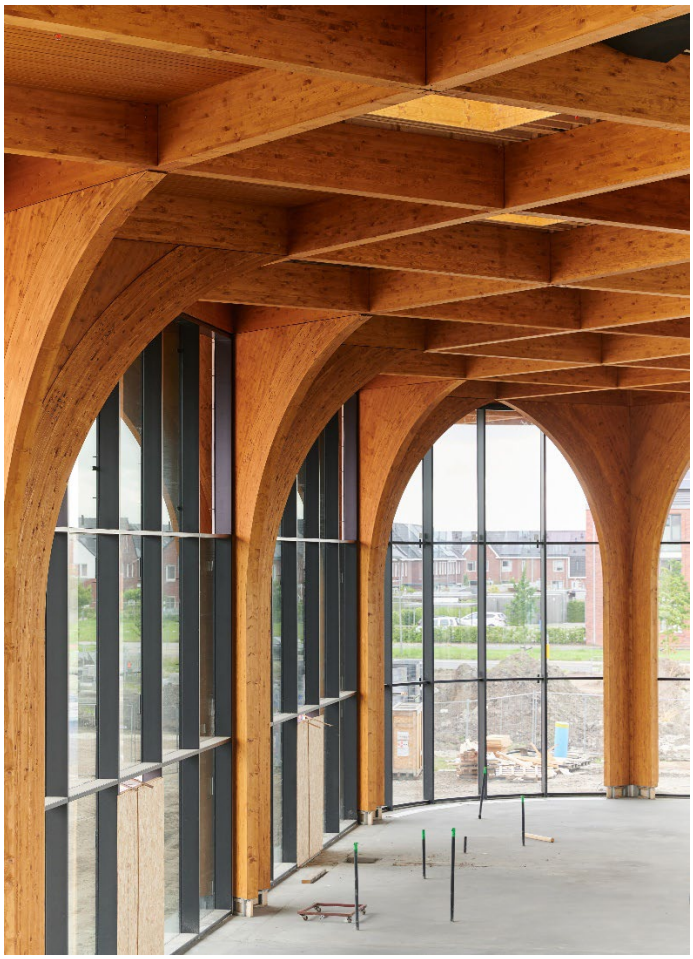
SuperHub Meerstad is built from wood. We consider timber construction important from the point of view of sustainability and climate. The advantage of building in wood is that the construction site becomes an assembly site. Everything is made in the factory and assembled on site. That means a short construction time, a clean construction site and less chance of mistakes. Wood is light, natural, easily adaptable, has a good insulation value and it captures CO2 instead of emitting CO2 like concrete. A wooden building has the pleasant property of providing a healthier indoor climate compared to a traditional building. Wood smells pleasant and provides a natural and warm appearance; it ensures tranquility and a pleasant quality of stay.
De Zwarte Hond builds on best practices from previous timber construction design assignments, including the wooden station in Assen, a villa with a solid wooden oak façade on Schiermonnikoog, an urban plan with wooden buildings in Bremen, the wooden head office and work building of Alliander in Amsterdam, and a wooden tower as an addition to an existing high-rise complex in Rotterdam.

1.2. Curved frames and grid

The building consists of a diagonal grid of cross-shaped curved trusses. The shape of the truss changes from a column to a girder thanks to its elegant curvature, which creates a spectacular image. The cross shape of the wooden trusses guarantees the rigidity of the construction and results in a high degree of internal flexibility. With a round or square column the building would fall over, but with this column shape it will remain standing. This means that no large-scale wind bracing is required, ensuring maximum transparency in the façade which has a very slim, steel, storey-high curtain wall with curved corners and with no auxiliary construction. The 10-metre-high building has a large wooden roof with an overhang of five metres. The canopy embraces the environment in an inviting way and shields the transparent building from the sun. The shape of the columns and beams, combined with the diagonal grid, is what creates the cathedral-like experience of the building.

Picture 6

Picture 7



Picture 8

Picture 9: In the future, it will be possible to accommodate other functions

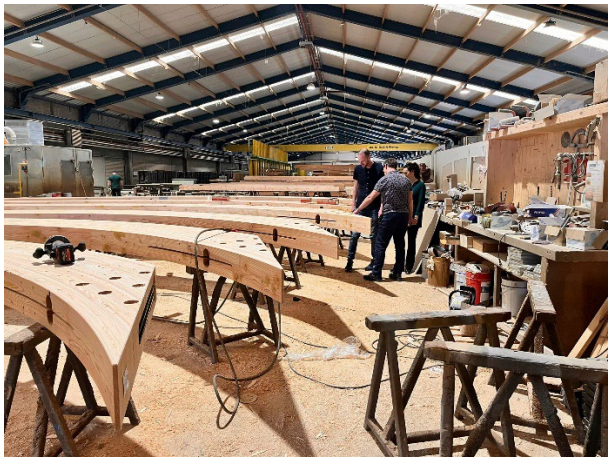
1.3. Flexibility and adaptability

The building was deliberately designed with a height and column grid, making it suitable for other functions in the future, such as a community centre or even housing. The floor of the building is designed for a large load and the whole building is one large fire compartment.

We have increased the flexibility of the building by not concealing the technical installations in the building, but opting for open installations. The interior and technology are therefore easy to adapt or replace over time.

1.4. Wood texture

How do you make the laminated wood used in the design? Wooden planks are glued together and pressed against each other in moulds in order to achieve the curved shape. The curves are functional, connecting the columns and the beams. After sanding and planing, the holes and connections are added using a 3D mill. This is a purely wooden building, since no concrete surfacing is required to resolve aspects such as noise. Acoustic cloth will be installed in all sections between the beams, with wooden slats underneath with space in between, so that the entire roof has an acoustic function.



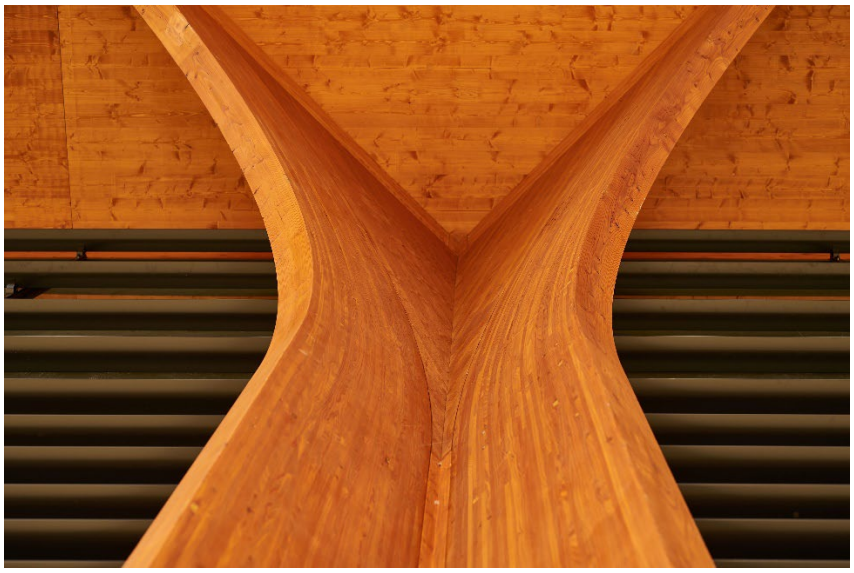
Picture 10

1.5. Earthquake proof

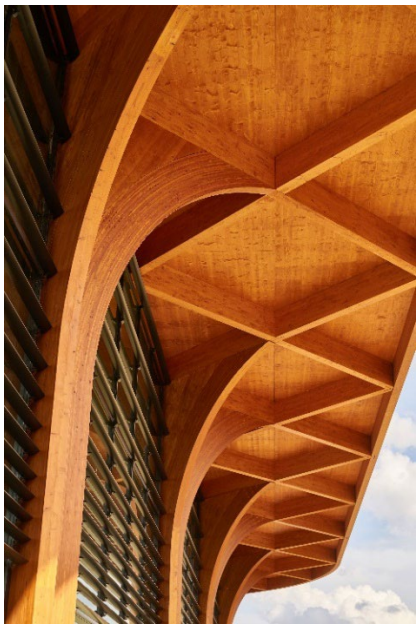
Due to its location in this part of Groningen, the building has been made earthquake resistant. The nice thing about wood is that it is light and that it can absorb the vibrations of an earthquake well. If a crack occurs in the wood, further cracking is prevented by the specific use of screws.

1.6. Sustainable roof

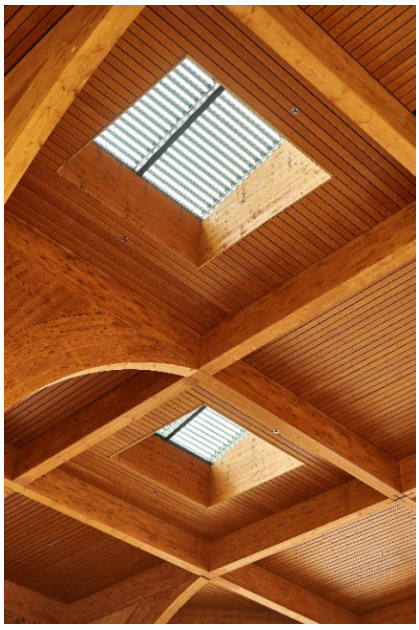
The roof is also optimally used by installing solar panels and roof plants for bees and other insects. Technology – in the form of an air treatment system and heat/cold storage from the ground – is integrated in the building to ensure an optimal, energy-efficient indoor climate. In the building grid there are several skylights that bring extra daylight into the heart of the building.



Picture 11



Picture 12



Picture 13

1.7. Sustainability ambitions

With Meerstad we are aiming for the highest achievable sustainability certificate. MWPO and De Zwarte Hond hope that Superhub will be a driver for timber construction and bio-based construction. This is why actors with expertise in this field, such as Pieters Bouwtechniek and DGMR, are involved in this project.

1.8. CO2 impact

Trees are indispensable for reducing CO2. Building with wood is interesting because CO2 is stored in trees. This makes SuperHub Meerstad a CO2-positive building! For all the wood used for SuperHub, we are ensuring that new trees are planted. The wood comes from the Netherlands, Scandinavia and Central Europe.

2. Facts and figures

Footprint: -262,680, (0 kg CO2 EQ)

Beams/columns: 350, of which 88 arched columns

spruce laminated: 230 m3

larch laminated: 70m³

CLT roof sheet: 120 m³

spruce from: Scandinavia and Central European forests

larch from: the Netherlands (Staatsbosbeheer)

Photography: Ronald Zijlstra

www.dezwartehond.nl

Picture 14