

## **Two projects in wood: circular but still for eternity**

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# Two projects in wood: circular but still for eternity

## SuperHub Meerstad

Meerstad is the greenest part of Groningen, known for its space, greenery, and the lake – the Woldmeer – that was recently created there. 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. 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 1: SuperHub

### 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 CO<sub>2</sub> instead of emitting CO<sub>2</sub> 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.



Picture 2: Side view SuperHub



Picture 3: Side view wooden construction and transparent facade



### 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.



Picture 4: In the future, it will be possible to accommodate other functions

### Curved frames and grid

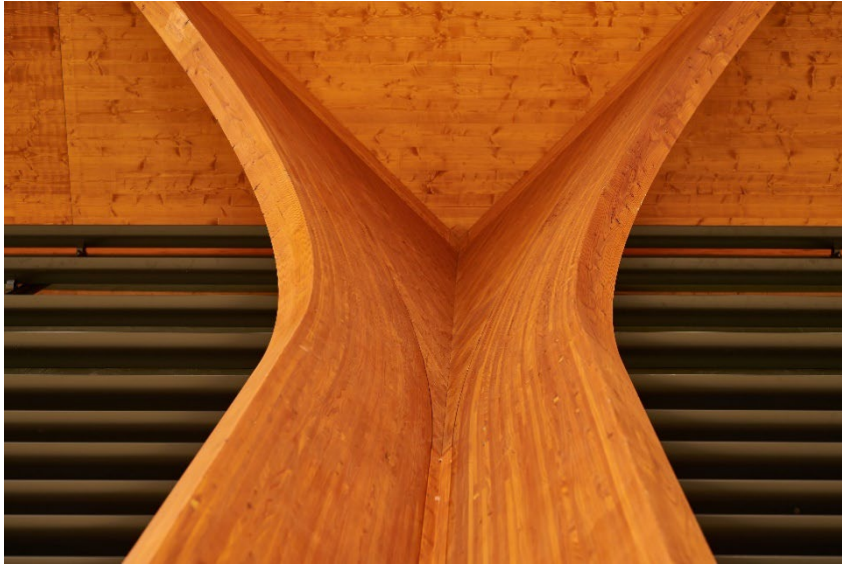
The building consists of a diagonal grid of cross-shaped curved trusses. The shape of the truss changes from a column to a girder thanks to its elegant curvature, which creates a spectacular image. The cross shape of the wooden trusses guarantees the rigidity of the construction and results in a high 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.



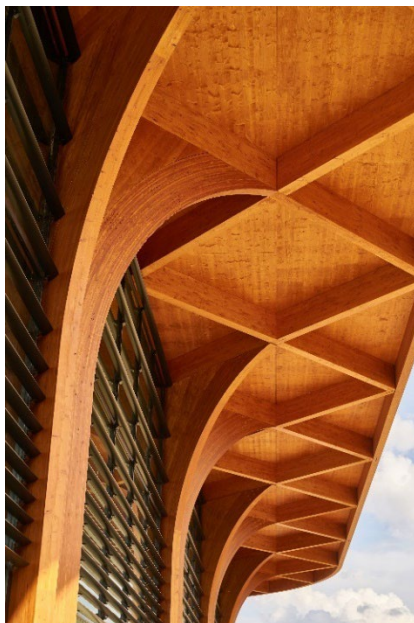
Picture 5: Diagonal grid of cross-shaped curved trusses

### Earthquake proof and sustainable roof

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. 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 6



Picture 7



Picture 8

### 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 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.



Picture 9 and 10: SuperHub Meerstad provides spaces for meeting, activity, and entertainment



Picture 11: SuperHub Meerstad in Meerstad Groningen, NL

## Liander Westpoort

De Zwarte Hond was commissioned by network company Alliander to design a working building that offers space for offices, training facilities, workshops, storage and test rooms for network operator Liander. De Zwarte Hond translated the functional requirements and aspirations into an extremely sustainable energy-neutral building (ENG), which considers Liander's future changing needs and has an energy performance certificate (EPC) of -0.007 (see attached DGMR document).

The design consists of a rhythmic alternation of buildings and spaces in between and is striking because of the equal attention given to all parts of the programme. The work buildings and storage areas have been designed with the same care as the office building. At its peak, the office forms a height accent which is visible from the A5. The building is cost-efficient, thanks to its compact construction, limited façade surface and focus on the reuse of materials.

The sustainability goals were formulated together with Copper8 and include a high degree of flexibility, scalability, and modularity. Thanks to sustainable energy generation, including solar panels and thermal storage (TES), the buildings are energy neutral, while the enormous PV roof in the workshop allows them to generate most of the electricity needed for charging forklifts and other equipment.



Picture 22: Liander Westpoort, as the location will be called, will offer space for offices, training facilities, workshops, storage and test areas

### Circularity, futureproofing and designing for multiple lifecycles

Liander Westpoort is the most extensive timber construction project in the Netherlands. Using a generic wooden construction makes the design future-proof. The materials of this circular building are easy to reuse thanks to the stacked (wooden) columns, beams, and floor sections with their detachable connections. In addition, the installations are designed not to be inbuilt in between, which guarantees the future flexibility of the building. Furthermore, the Corten steel façade is also demountable and reusable.

An outbuilding occupies the site of the current location where the environment and projects square is located. This will be taken apart and elements will be reused in the new work hall of the office. In addition, the lighting fixtures from the current office will also be reused in the new office.





Picture 33: The office forms a height accent and is therefore visible from the A5 motorway

### **Wooden construction**

The use of a wooden construction has a positive effect on CO<sub>2</sub> emissions, but this regional office design does even more for Alliander. For example, the façade is more than 30% green, which contributes to water retention. This encompasses brown roofs as well as green roofs, and containers beneath the road surface that collect water. The roofs not only retain water, but also provide nesting opportunities for birds. The design of the new regional office acts as a connecting element in the ecological wildlife route.

Stairs and a lift have been placed in the core of the building. Connecting all the office floors with «wandering stairs» encourages the building's users to mainly take the stairs. Sustainable, construction- and energy-neutral design solutions are a core value in the new office. This is reflected in the appearance of the design.



Picture 44

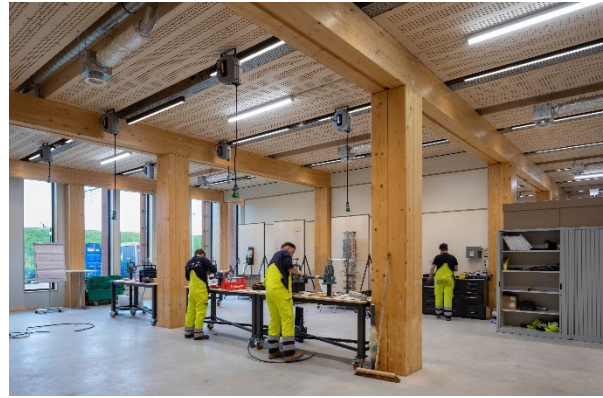


Picture 55





Picture 16



Picture 17

### Increasing biodiversity

The landscape plan for the outdoor space – on and around the buildings – is inviting for people and wildlife. The surface area of the site, the size of the building and the location in the port area require landscape planting that is robust and therefore able to withstand the scale of the building. The site is part of an ecological zone within the port area and the planting is in line with the locally occurring species. The different layers of vegetation enhance the landscape, increase biodiversity, purify the air, reduce heat stress, and absorb flooding in extreme weather. Refining the planting on a smaller scale ensures that the seasons are experienced. Near visitors and employees, colours and scents stimulate the senses and contribute to psychological health. With this design, Liander Westpoort contributes to a climate-adaptive and nature-inclusive environment.



Picture 18





Picture 19: The rich vegetation provides a habitat for insects, birds, amphibians, and small mammals.

**De Zwarte Hond** is a design agency for architecture, urban design, and strategy with offices in Groningen, Rotterdam and Cologne. Through a combination of social commitment and craftsmanship, we create high quality projects that are sensitive to their context, the needs of users and the vision of our customer.

### Credits Photography

SuperHub Meerstad: Ronald Tilleman

Liander Westpoort: ScagliolaBrakkee, Proloog (Renderings)