



Belgian family-owned company FACQ has been a specialist in bathrooms, heating and renewable energies since 1880. Image source: © Bart Vercammen.

Is this the longest wire mesh façade in the world?

Although the jury is still out on whether it can be named the longest in the world, the new FACQ building's 300-metre-long wire mesh façade cladding is certainly an eye-catcher on Belgium's E40 highway. In collaboration with architect Gérard Courtoy and general contractor Verelst Bedrijfsbouw & Renovatie, Haver & Boecker realised the stainless steel mesh façade in Merelbeke.

Images and text courtesy of Haver & Boecker, interviewed by Ellie Pritchard

Aesthetics and purpose

The stainless steel mesh cladding is interrupted horizontally over its entire length by an elliptical elongated shape. In front of the glass façade on the south side of the building, the metal mesh cladding acts as an effective privacy- and sun protection screen. From the very beginning, special requirements were made on it. On the one hand, the facade cladding should appear transparent from the inside but closed from the outside, on the other hand it should offer perfect sun protection with a very low g-value. Haver & Boecker

met the customer's requirements with the stainless steel wire mesh LARGO-TWIST, developed especially for sun protection.

Everything from a single source

Haver & Boecker took over the assembly of the 3,200 m² mesh façade. In total 182 façade elements, with a width of 2.98 m and a length of up to 7.71 m, were attached to the substructure using flat tension profiles, clevis screws and pressure springs. The architectural team of Haver & Boecker partnered tasks ranging from consultation and planning

phase, through mesh production and delivery, up to installation of the wire mesh elements on the customer's side.

Consolidating expectations

We spoke with Haver & Boecker's Project Manager, Mr. Marek Morawski, about the project.

"When we begin on these projects, we work as a collaborative unit. The architect presents us with their vision, obviously agreed by the client, and we assess how we can realise this. So, we are looking into the specification of the mesh required; what is the main

application of the wire mesh, what properties does it need to have? Is it sun protection, is it just an aesthetic coverage?"

On a large scale project such as this, the Haver & Boecker project team start with a mock-up to ensure that all parties have the same expectations. "In this case, it was really a professional approach from the architect," says Mr. Morawski. "He had the client and the contractor in the same boat, and we needed to all be heading in the same direction even though we all had clear visual, technical and financial expectations".

In rare cases, and the FACQ project was one of them, the team will also do a reference tour where the client and the architect are shown reference objects to get an idea of expectations, and the team receive feedback on the materials they intend to use. "The architect and client will get an idea of which particular mesh will give the results they want; we look at the environment, the direction the façade will be facing, and so on. It can be a complicated process, but we like it."

Tried and tested

"Of course, we do try to use our standard wire mesh products,"

Mr. Morawski explains, "because they are already proven, whereas with customized types we always have to consider that certain tests will need to be performed to check for things like wind impact, durability, and so on."

"In this project we used a new standard type, the LARGO-TWIST, which we have so far used on three buildings, in Mexico France, and now in Belgium. This type has a big advantage in that it is



View from inside FACQ building, demonstrating the near transparency of the mesh when looking out. Source: Haver & Boecker.

opaque from one side, but transparent from the other; it is kind of a hybrid. It has an impressive solar transmittance value so it is ideal for use in shading".

No room for error

We asked Mr. Morawski what were some of the biggest challenges to producing a mesh façade of this scale?

"Although not the biggest, this was a big project for us," says Mr. Morawski.

"What was especially interesting was the shape of the façade; its width is almost 300m, so that presented a lot of challenges as far as alloy batch uniformity is concerned. Also, the proper installation was very important; on this façade, every imperfection would be clearly visible, so it had to be perfectly produced, delivered, and installed."

"The installation was challenging because of the width of the product,

but we had great access so the physical aspect was not too difficult. Obviously, the fact that we were working in Germany and the façade needed to be built in Belgium presented some issues, but that isn't uncommon for us. The big challenge was getting to the point where every party was giving the green light to start production."

Excellent shading values

Due to the semi-transparent geometry, HAVER Architectural Mesh is suitable for external sun protection. By providing efficient shading and transparency at the same time, architectural wire mesh improves indoor comfort and energy efficiency of the rooms.

The used stainless steel mesh LARGO-TWIST 2045 is characterized by its tilted horizontal flat wires, which offer good sun protection. With an open area of 38%, the mesh type creates a homogeneous appearance with low transparency and extensive light reflections. At the same time, it allows an unobstructed view out of the building.

With a sunlight incident angle of 60° and a double glazing window, most of the architectural mesh types used for sun protection effect a reduction of solar energy input between 40% and 70%. In interaction with a solar control glazing, they reach at the same angle of incidence a g-value among 0.1 to 0.18. The sun shading mesh exceeds these shading values. Confirmed by independent tests, the mesh reduces the entry of sunlight at this angle by more than 90%. In combination with solar control glazing, it is a g-value of 0.02.



The façade's outer metallic surface is almost opaque, making it an ideal sunshade. Source: Haver & Boecker.