Reconstruction monumental Façade Kalverstraat Amsterdam

nedcam
shaping technology

A1
active composite

1

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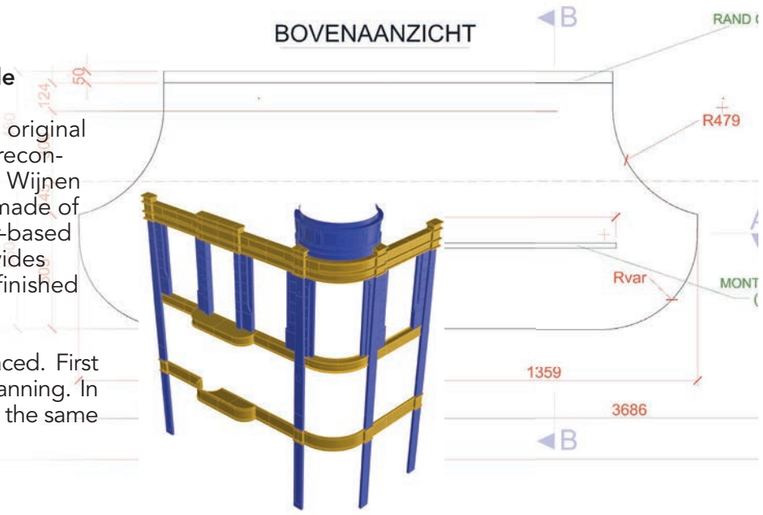
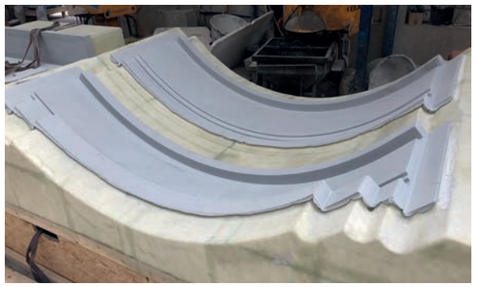
In the reconstruction of this building original materials could not be used for the reconstruction. Winhof Architects and van Wijnen Heerhugowaard choose to work with replica's made of the sustainable glass fibre reinforced and water-based system A1 (Acrylic One) material. Nedcam provides the engineering, mould making, as well as the finished façade elements.

The old façade of the building had to be replaced. First the old façade has been scanned by 3D-laserscanning. In this manner the façade could be rebuilt exactly in the same dimensions and with the same details.



2

From the scanned data, a 3D-model has been made with all 35 A1-elements to be made. For each element to be made a direct mould has been produced by Nedcam. The direct moulds were made of an EPS-base with a PU-paste layer that was milled to the exact dimensions.



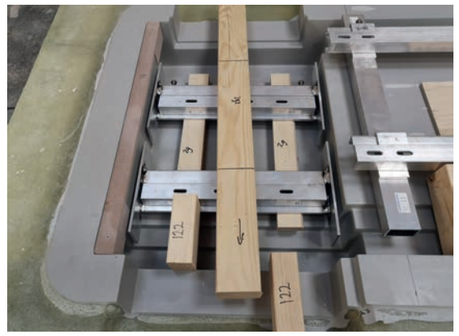
3

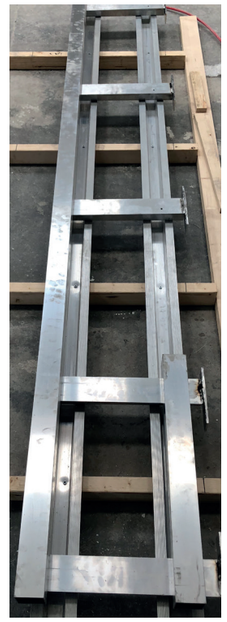
In the moulds the elements have been produced using A1. These were built up by starting with a non-reinforced resin layer, followed by laminating 4 layers of A1 Triaxial glass fibre reinforcement of 160 g/m^2.

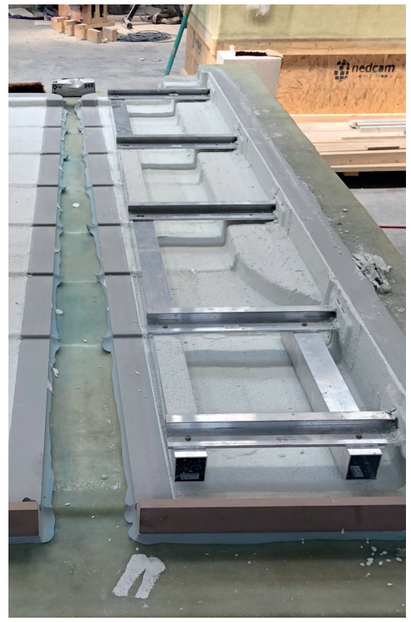
4

After curing an aluminum mounting structure is connected to the back of the panel by laminating. Including the mounting structure the elements have a surface weight of 20 kg/m^2.

Because of the low weight the elements were easy to install. In this manner the façade of La Place in Amsterdam has been built.







A1 has a number of important advantages in the manufacture of lightweight façades.

Appearance
A façade provides information about the function of the building and presents itself through its appearance. With A1 an almost infinite number of (natural) radiations and colours can be achieved by adding (natural) filling materials. By using (silicone) moulds almost every structure can be reproduced.

Excellent fire resistance properties
A1 has excellent fire resistance properties and can be used for projects with high fire resistance requirements.

Classification of reaction to fire performance in accordance with EN 13501-1:2002. A1 (Acrylic One) LP01 and A1 Triaxial Fabric: **B-s1,d0**

Classification of reaction to fire performance in accordance with EN 13501-1:2007+A1:2009. A1 LP01 and A1 Tri-axial Fabric + sand (25% of mass A1): **A2 - s1,d0**

Evaluation of the surface burning characteristics of a material identified as A1 in accordance with ASTM E84-15b, standard test method for surface burning characteristics of building materials.

Flame Spread Index (FSI) : 20
Smoke Development Index (SDI) : 15

Freedom of form
Because after mixing the A1 Liquid with the A1 Powder the A1 has a liquid form, almost any form can be created. This creates interesting opportunities for designers who are looking for special forms in their design.

Lightweight
By using our A1 Triaxial glass fibre, it is possible to create lightweight panels/objects with a thickness of approx. 6 mm and a weight of ca 12 kg/m2. This makes A1 panels applicable where other materials become too heavy. This also simplifies the installation of the panels.

Processing
A1 is water-based and contains no harmful substances. This makes it a safe material to work with. Also, there are no expensive investments in equipment needed to be able to use A1. This means that A1 can be used in almost all types of production environments, provided that they have a proper heat and moisture balance.

Renovations
Because of the above advantages, A1 is very suitable for the renovation of buildings where the original radiations must be preserved, but without using these building materials.

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