

Project description

The transformation of Station Assen is currently under construction. The station will be completed and the temporary station will be removed by the end of 2018.

Assen

Assen is the fastest growing city in the north; the growth is accompanied by more commuting and more trains in the future. That is why the railway track and the station in Assen are growing. For travellers there will be a lot of improvement in the coming years on and around the Assen station. With a completely new station building, extra bicycle parking, improved access and a better track and new **underpass**, traveling through Assen will be comfortable and fast.

New station building for Assen

In 2016 the construction of the new station and the new station square started. The design of Assen station has an urban appearance and gives the station allure. Striking at the new station is the large triangular wavy roof. This roof connects all station parts together. The building is more accessible thanks to the new access via a tunnel on the east side, with a lift, and wider stairs. Platform 1 is made longer and wider, so that intercity trains can also stop here. There will also be a large new bicycle parking facility for 2600 bicycles under the station. The building has a logical layout and will soon have facilities that contribute to a pleasant stay.

The construction is based on a concrete foundation with steel pillars. A wood construction is used to create the triangle wavy roof. On that wavy roof skylights are created by Licotec. The skylights are made off aluminium, in house designed profiles (mullion, transom), with an 8 mm clear polycarbonate (PC) plate and aluminium flashing.

Challenges

The triangular wavy roof is the challenge in this project. The constraints were roof angles 5° - 7° and the base of the wooden gutters that follow the wave of the roof in a straight line. The aluminium mullion profiles are placed on the high side of the gutters. On the other side the mullion is supported/extended by a square tube. Both sides are mounted with a base plate on the gutter. The middle support, where the aluminium mullion profiles connect, is an I-section profile. The I-section gives the aluminium construction stability. The other challenge was to create tools to make modelling easy and fast. The custom components and C# are ideal tools in Tekla structures. This helped a lot to reduce mouse clicks. The 3d trigonometric functions were used to place the profiles.

Success

The success is the result of the decision to start detailing in 2D and generating the presentation model and information needed for production in 3D. This enabled us to keep good track of the workflow in our production as well as on the building site.

Simple, yet effective, tools were created to place the aluminium construction in the 3D model. For example advanced details for editing custom profiles, placing the glazing and flashing and dummy profiles to simplify the placing of the transoms.

The created tools helped making the modelling easy and fast. They are also easy to maintain and extend.