



Enjoy Concrete relies on ALLPLAN Precast for detailed precast design.

## ALLPLAN in practice | Prefabrication

# SUSTAINABLE AND GREEN

**Like a green thread, this precast concrete staircase winds around the central column of the outdoor staircase of a primary school in Ghent, Belgium.**

## The innovative precast concrete outdoor staircase

Like a green thread, this precast concrete staircase winds around the central column of the outdoor staircase of a primary school in Ghent, Belgium. The innovative escape route for students and teachers is part of a pilot project using alkali-activated concrete (AAM). This type of concrete significantly reduces the carbon footprint by using only 25% of the usual amount of clinker compared to conventional concrete. At the same time, it retains the benefits of concrete, such as exceptional load-bearing capacity and formability.

The architects Back Architects and the engineering office Studiebureau Mouton developed the design

for Furnibo. The Belgian company Enjoy Concrete creativity and aesthetics in its work and provided the prefabricated elements. The „De Zonnepoort“ primary school also posed a number of challenges for the design team, particularly with regard to the advanced technology used in the more sustainable concrete and the necessary stability of the staircase.

The individual stair elements are very slender and have complex connections. These connections had to be invisible and smooth. At the same time, it was important that they could be disassembled as easily as possible.





Alkali-activated concrete enables a lower carbon footprint thanks to a 75% reduction in the amount of clinker.



Enjoy Concrete's precast elements feature sharp edges in exposed concrete quality.

### ALLPLAN provides architectural freedom

ALLPLAN Precast was used for element production to break down the complex 3D model into producible precast concrete elements. Precast-specific concrete processes and phases, formwork, and transport of the elements were already taken into account. Based on the 3D model in ALLPLAN Precast, Enjoy Concrete created all production plans and the entire reinforcement. This enabled the company to reliably coordinate reinforcement, anchoring, and formwork. The export of reinforcement quantity lists was particularly helpful for this project with variable stirrups and formwork.

### Pushing the limits of what is possible with ALLPLAN

What does Enjoy Concrete particularly like about ALLPLAN? The freedom to design and model in a very simple and user-friendly way. This is because the company does not produce according to a standardized scheme, but rather transforms bold architectural dreams into producible precast concrete parts.

### Up-to-date and reliable data

The precast design team also finds it convenient that all plans, quantities, and views are always up to date. This is because, technically speaking, the plans are views of the model, which means that the plan, model, and all views are always 100% consistent. This means that changes can be made either in the model or in the plan. With this unique element plan technology, ALLPLAN enables model-oriented AND plan-oriented work, while offering both vivid 3D models and clear plans.

### PROJECT INFORMATION AT A GLANCE


- > **Focus:** Prefabrication
- > **Software for precast detailing:** ALLPLAN Precast
- > **Design and production of precast elements:** Enjoy Concrete nv
- > **Number of precast elements:**
  - 13 special elements
  - 4 columns; one load-bearing column divided into 4 elements
  - 7 stairs
  - 1 stair landing
  - 1 T-pillar to support the canopy
- > **Project duration:** 8 months

### Teamwork and data exchange made easy

Since Enjoy Concrete often works with other project partners, a seamless flow of information is extremely important. The exchange of 3D models between the architect's office, the engineering office, and Enjoy Concrete was done using IFC. This makes it easy to share models and projects.

### Efficient production thanks to 3D

The 3D visualization in ALLPLAN changes the daily work in the precast plant. With Enjoy Concrete, the production plans contain a 3D image that serves as a kind of table of contents. A 3D visualization of complex reinforcement details is created especially for the reinforcement welders. Together with the specified production plans, this ensures an efficient production phase with clear work tasks.



„In precast design, it's the details that count. With ALLPLAN Precast, we benefit with these detail-oriented tasks.“

Maarten Durnez,  
Sales Engineer, Enjoy Concrete nv

### The client

Enjoy Concrete manufactures precast concrete products that meet the highest aesthetic standards. In 2009, entrepreneur Bernard Joye created a brand new company with a team of young engineers. More than 15 years later, Enjoy Concrete is an established player in the construction industry with around 45 employees.

Its plant in Veurne, Belgium, which opened in 2010, produces around 6,000 precast elements per year. Enjoy Concrete produces these precast elements in fair-faced concrete quality with sharp edges, enabling top-quality architectural projects

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## About ALLPLAN

ALLPLAN is a global provider of AEC software with BIM solutions for architecture, structural engineering, detailing, fabrication and construction. True to our "design to build" claim, we provide tools that enable earlier data-driven design decisions, support digital fabrication and leverage information throughout the entire construction process. Integrated cloud technology further optimizes interdisciplinary collaboration on building and infrastructure projects. Our innovative workflows

empower architects, engineers, and construction professionals to deliver their projects more productively, safely, and eco-consciously.

Around the world, over 700 dedicated employees continue to write the ALLPLAN success story. Headquartered in Munich, Germany, ALLPLAN is part of the Nemetschek Group – a pioneer for digital transformation in the construction sector.

### Competence Center ALLPLAN Precast

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