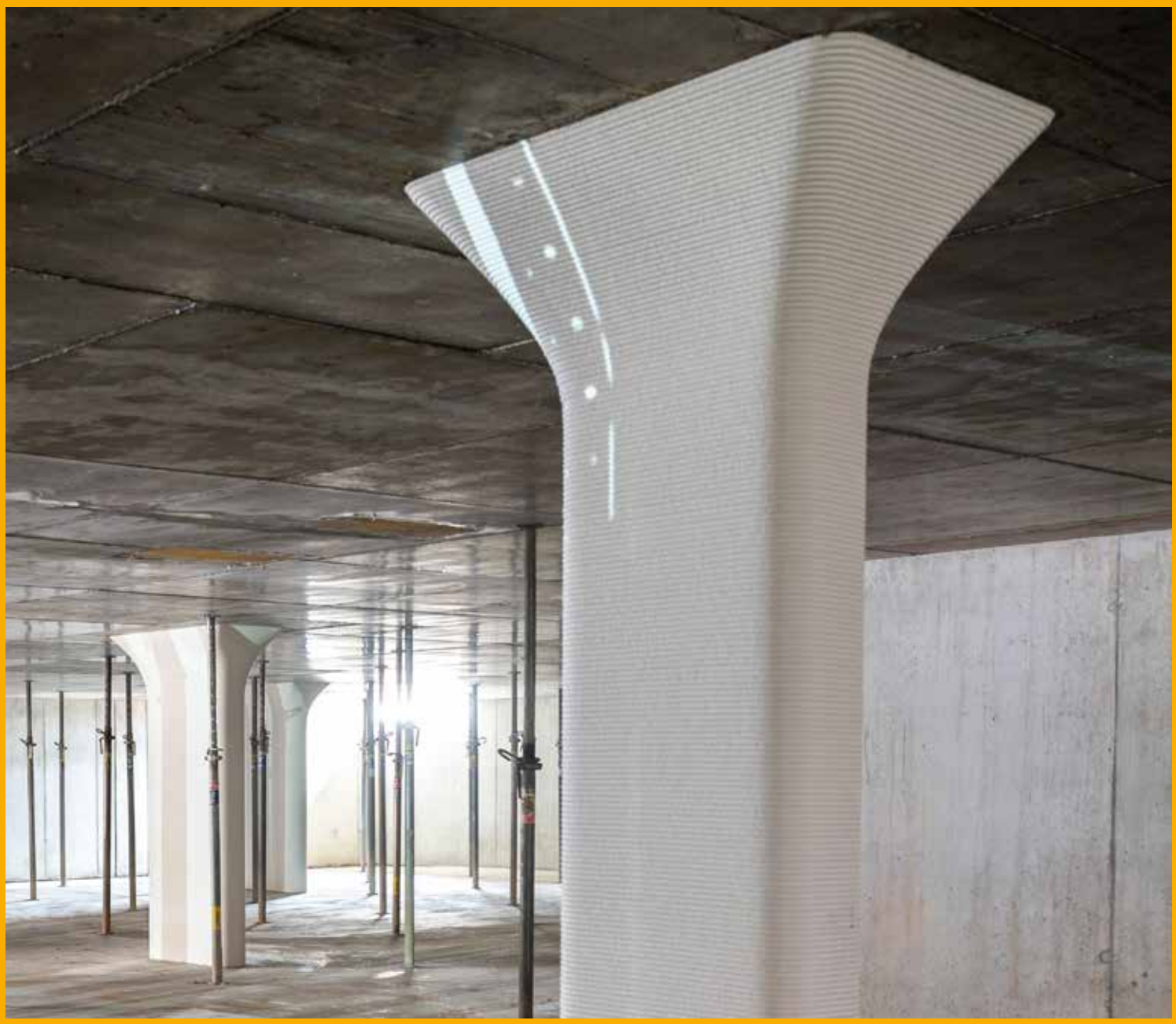


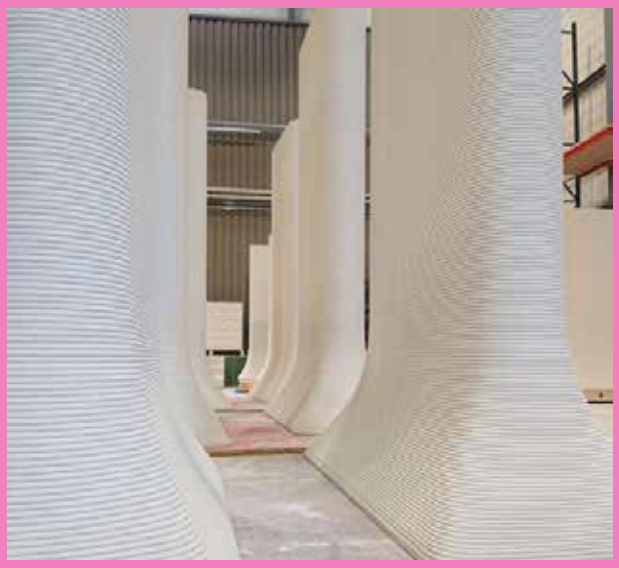
SIKA AT WORK

3DCP COLUMNS FOR A NEW ASSEMBLY HALL, GRETZENBACH, SWITZERLAND

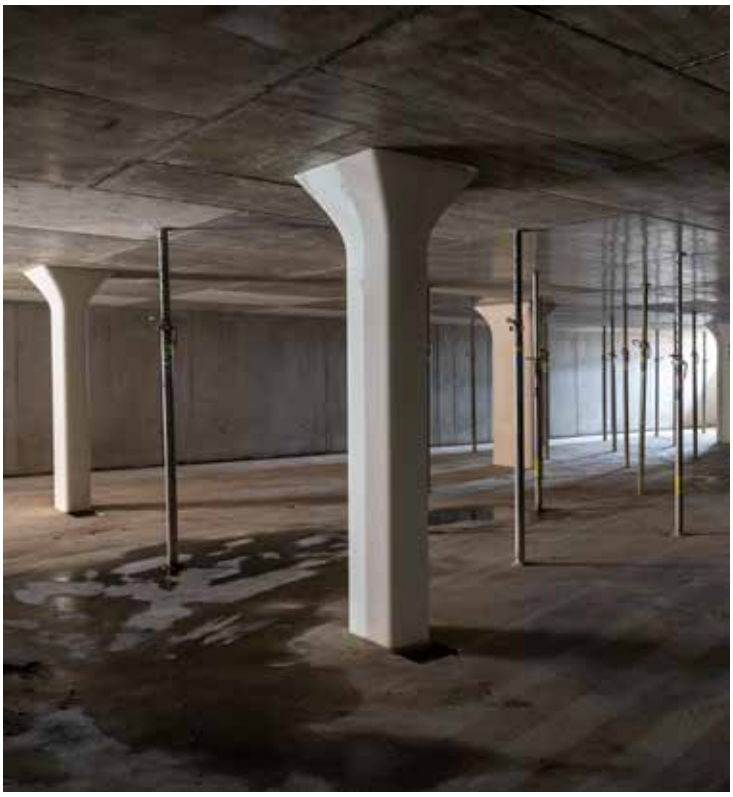
CONCRETE: Sikacrete® 3D

BUILDING TRUST

THE NEW FREEDOM TO DESIGN



Printed in the factory.



Installed onsite.

PROJECT DESCRIPTION

The new garage construction consists of 38 load-bearing columns which utilized the method of 3D concrete printing (3DCP) as opposed to using traditional formwork.

After placing, steel reinforcement cages were placed inside the 3DCP forms which were later filled with concrete to form a composite load bearing element.

Location: Gretzenbach, Kanton Solothurn, Switzerland
Project year: 2021

PROJECT REQUIREMENTS

Three variations of the load bearing columns were designed by the Architect with the specific shape, optimized by the Structural Engineer to reduce steel reinforcement at the floor connection. The project required a high-quality surface finishing with very accurate dimensional line stability and the printing had to be economically viable compared to traditional construction techniques

SIKA SOLUTIONS

Sika provided the 3D concrete printing material Sikacrete®-7100 3D to Affentranger Bau AG who printed the columns, using the Sika developed gantry printer.

The added value of using 3D concrete printing:

- Easily printed shapes in a form that would be expensive using traditional formwork
- Statically optimized column shape
- Alternative surface texture to smooth cast concrete
- Positioning of electrical sockets for plugs and charging points
- Amendments to the design can be implemented easily

PROJECT PARTICIPANTS

General contractor: TU WAT THAI GmbH, Zofingen
Architect: Prosys concept AG, Zofingen
Engineer: Born + Grimm AG, Langenthal
Contractor + 3DCP: Affentranger Bau AG, Altbüron
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