



TEKTONIEK event

3D Concrete Printing Merging Design & Production

22 October 2015

13.00 - 22.30 hrs

TU Eindhoven,
Auditorium

TU/e

photo: Emerging Objects

Program

13.00 hrs **Reception in 'Senaatszaal'**
Marketplace for 3D Concrete Printing (3DCP) and
Structural Design

14.00 hrs **Start program in 'Blauwe Zaal'**
Welcome by Suzanne Udo, Managing Director, TU/e,
department of the Built Environment

Inspiration for innovation

Floris Alkemade, Dutch State Architect

Keynote 1 (in English)

3DCP project TU/e, ambition and potential

Theo Salet, professor Structural Design
Rob Wolfs, promovendus

Intermezzo 1

Design proposals experimental prototypes*

Break

Intermezzo 2

Design proposals experimental prototypes*

Keynote 2 (in English)

Trending Topics in High Tech Concrete

Gregor Zimmermann, researcher and consultant, G.tecz

17.00 hrs Parallell workshops**

- A. **Materials & Techniques**, for structural engineers, producers and contractors
- B. **Shape & Structure**, for architectural and structural designers, consultants and engineers

Guided tour to the 3D concrete printer in the laboratory of the department of the Build Environment

Break and dinner

19.30 hrs Joined program

with Tektoniek students workshop

Intermezzo 3

Design proposals experimental prototypes*

Tektoniek presentation

Keynote 3 (in English)

Digital Concrete Fabrication

Fabio Gramazio, Gramazio Kohler Research group,
professor Architecture and Digital Fabrication, ETH Zürich

21.30 hrs **Tektoniek networking reception**

22.30 hrs **Closure**

Chairman: Hans Köhne, Cement&BetonCentrum

***) Design proposals experimental prototypes**

Presentation of design proposals developed by designers who participated in workshops organised by Cement&BetonCentrum in collaboration with Boosting, the platform for innovation in architecture and building production. The challenge was to develop design proposals that explore the potential of 3D concrete printing.

*****) Workshops**

The parallel workshops are organised to get extra input for the development project 3DCP of TU/e. Duration time 45 minutes. Short presentations will be followed by lively discussions. Experts with vision are welcome.

Registration in advance is required. Participation is limited to 70 persons per workshop.

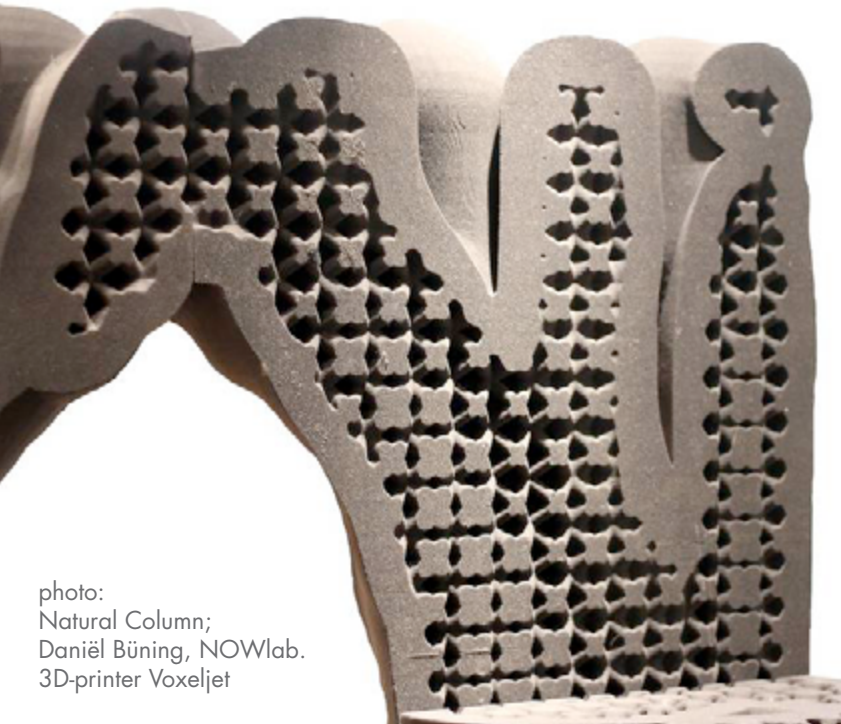


photo:
Natural Column;
Daniël Büning, NOWlab.
3D-printer Voxeljet

Tektoniek is the knowledge network for architecture in concrete.
Tektoniek is an initiative of the Cement&BetonCentrum.

Theo Salet

Prof.dr.ir. Theo Salet is professor for concrete structures at the Technical University Eindhoven, Department for the Built Environment. He combines his professorship with a leading responsibility at consulting engineers firm Witteveen+Bos. In that firm he is responsible for the section Buildings, with special focus on underground buildings.

Theo Salet is educated in civil engineering at the TU Eindhoven; he got his PhD degree at the same university in 1990 with a thesis on the structural use of foamed concrete. His current research program deals with the development of 3D printing of sustainable concrete structures. Projects within this framework are the development of digital design models and optimisation techniques, structural application of new concrete types and development of discrete finite element models for advanced material research. Close collaboration has been set up for these research projects with other chairs at the TU Eindhoven and with other universities.



Rob Wolfs

Ir. Rob Wolfs is PhD student at the faculty of the Built Environment of the TU/e. He graduated in February 2015 on the topic '3D printing of concrete structures'. During his education he studied the use of textile moulds for production of concrete structural elements, topological optimization of structures and the magnetic orientation of steel fibers in concrete. During his education he was actively involved in the study association Koers (structural design), for one year as chairman.

Rob started his PhD research in April 2015. He became closely involved in the development of the 3D concrete printer at TU/e. Coming years Rob will do research on the structural behavior of printed concrete structures.



Gregor Zimmermann

Dr.-Ing. Gregor Zimmermann is CEO and founder of G.tecz Engineering (Kassel), an innovative research & development company on cement bonded high tech materials for industry applications. Gregor studied Structural Engineering at University of Karlsruhe (graduated in 1999). He worked as engineer for IPL and developed textile light weight structures for e.g. soccer stadiums. In 2006 he got his doctor degree for Structural Engineering & Architecture at University of Kassel. In 2010 he worked at that university as visiting professor for digital design techniques.

Together with Matthias Teichmann Gregor started the G.tecz consultancy and development practise. G.tecz is recognized worldwide for their contribution to ultra high performance concrete (UHPC) and ultra lightweight concrete. In collaboration with Voxeljet and the University of Kassel, G.tecz developed the first printable pure water and cement based concrete. Gregor lectured at numerous universities in Europe and the United States of America.



Fabio Gramazio

Prof.ir. Fabio Gramazio is an architect with multi-disciplinary interests ranging from computational design and robotic fabrication to material innovation. In 2000, he founded the architecture practice Gramazio & Kohler in conjunction with his partner Matthias Kohler, where numerous award-winning designs have been realised.

Current projects include the design of the Empa NEST research platform, a future living and working laboratory for sustainable building construction. Opening also the world's first architectural robotic laboratory at ETH Zurich, Gramazio & Kohler's research has been formative in the field of digital architecture, setting precedence and de facto creating a new research field merging advanced architectural design and additive fabrication processes through the customised use of industrial robots. This ranges from 1:1 prototype installations to the design of robotically fabricated high-rises. The recent research is outlined and theoretically framed in the book 'The Robotic Touch: How Robots Change Architecture' (Park Books, 2014).



Location

TU Eindhoven, Auditorium
Den Dolech 2
5612 AZ Eindhoven

Registration

Participation is free. Registration in advance is required at www.cementenbeton.nl
Registrations will be confirmed by email.
The confirmation is the evidence of entrance.
[Click here to register.](#)

Organization

The event '3D concrete printing' is organized by the Cement&BetonCentrum in collaboration with the TU/e and the project partners.

More information

www.cementenbeton.nl
info@cementenbeton.nl
+31 73 203 20 48

boosting

The workshops '3D concrete printing' and 'Challenge design concrete proposals 3D printing' are organized in collaboration with Boosting.

Project partners

Ballast Nedam Bouw
Bekaert
Concrete Valley
CRH Sustainable Concrete Centre
CyBe Construction
Saint-Gobain Weber Beamix
SGS Intron
Van Wijnen Stolwijk
Verhoeven Timmerfabriek
Witteveen+Bos



Foundation SKKB is co-funder of the 3DCP project of TU Eindhoven.

The Cement&BetonCentrum represents SKKB in this project and supports the external communication.