Bouwkoppel#2 took place on 28 February 2019 in Amersfoort.

Presentation by Volker Ruitinga

Volker Ruitinga - Vertico (member of the Huizenprinters) gave an update on 3D concrete printing. Here is the pdf of his presentation.

2019_02_28_bouwkoppel_2_update-compressed.pdf

Account by one of the participants

Below you can find an account by Mirel Piek, one of the participants of Bouwkoppel#2, on how she became interested in the world of 3D concrete printing.

“In September of last year, I went to the Maker Faire 2018 in Eindhoven. There I first saw the mobile concrete printer by Vertico (part of De Huizenprinters) in action for the first time. This demonstration completely captured my attention, and it was, in my opinion, the most interesting thing I saw that day.”

“I wanted to know more about the possibilities that this working method offered and I called to see whether I could come and visit. After a spontanuous conversation on the phone with Volker, the motto was: “dropping by is taking part!” No sooner said than done, and the day started off with a firm handshake from Lars, a good-natured Volker, the enthusiastic Katrien, and a few students from Gent. We start working straight away and there we also encounter a setback; the nozzle is clogged with dried concrete. Unperturbed, Lars and Katrien fix this problem with tool assistance from me. On the ABB flex pendant, we saw time ticking away. The surprising thing about this whole process is that it comes with a lot of hands-on work such as mixing concrete, pouring the concrete into the pump that ensures concrete flow and putting containers filled with sand in place. Everything and everybody is ready to start and the printing process can begin. First up are the parts of a bridge for the students from Gent. Everyone has a job to do and the teamwork runs smoothly. When these parts are ready, we continue straight away with printing the artwork by Baum&Leahy. The challenge here lies in the height and the amount of sand needed to support the 3D printed wall. At the end of the day, the Vertico company floor is filled with 3D parts and the visible result of a physical working day.”

“After receiving the newsletter about Bouwkoppel #2, organised by De Huizenprinters, I registered for this day with enthusiasm. After the hands-on day, 3D concrete printing inspired me to think about how I can design a sustainable product with typography at its foundation. In the meantime, different typographical product ideas crossed my mind and I picked a sleek and round font for Bouwkoppel #2, print your own design. I picked this font to design the most important letters from my upcoming company logo, and the fact that my design was picked to be 3D printed really made my day.”

“After an introduction and word of welcome from Herman Broekhuizen, Volker Ruitinga gives an update about the developments in 3D concrete printing. He talks about existing systems, such as Gantry and Robot Arm. He informs us about the different hardware parts such as the pump, regulated screw and the nozzles, and ends his lecture with a graph depicting the workflow needed to transform an object to a real-life product made out of concrete.”

“The lecture by Sybren de Graaf was a clear presentation. The parametric scale model of the boathouse gave a clear visual image about the challenges he faced in this creative design and realisation process. Sybren describes the creative process with his client, working with and on wood from the local environment, the difficulties of designing with wooden, organic, natural shapes, creating a program with standard and special calculations to be able to upscale the boathouse, and to be able to adapt these calculations and shapes when something changes. This boathouse is a study in and of itself containing many unique challenges with a single versatile student.”

“This perseverance and versatility Sybren took with him to the company where he now works. Personalising glasses that match and fit a unique person. The SFERED software enables consumers to design a personal pair of glasses while sitting in front of the computer. Let the future start now… Then we continue with a workshop by Lars, now a regular employee of Vertico. He takes us through the slicing software step by step. Visualising this technique gives us a good idea of how complicated the communication process is between computer, robot, machines, and finally printing. During this workshop I notice the amount of development the Vertico team has made in the last 3 months.”

“The timing is strict, so stretch your legs during the ‘print your own design’ session. It is fun to see the OPQ emerging from the huge concrete printer. Head and heart meet, with a big smile. During the 3D print moment in the workplace, Katrien enthusiastically talks about her process and the result of the nozzle design. On the Bouwkoppel Wiki, she demonstrates step by step how she designed and developed these into a working part. On the wiki part of this website, a variety of open-source files can be found and good pictures of the test results of these nozzles. Besides this, Katrien taught a workshop on the Bouwkoppel Wiki page and held a collective brainstorming session on which information can be added and how more can be shared on this Bouwkoppel website.”

“Personal Construction is the final workshop, which is taught by Harmen Zijp. He held a brainstorming session about the question when or how it will become possible to print your own home on your home pc. Through woorden tiny houses, readymade software, mobile print input from the construction industry from Herman, the session, in my opinion, gets stuck in the myriad of rules that come with building a house.”

“I am left with a question for the next Bouwkoppel: what are the regulations surrounding a round house?”