Concrete printing – promising but not self-evident

Sofar, a universal printer does not exist. Any type of printer is developed in close relationship with the type of material to be printed. The presentation will start by providing a review of the various developments world-wide. In case of concrete, the print options are both extended and limited by the fluid and aging type of concrete properties. The presentation will show an example of a complicated geometry that can easily be printed without the need to describe a complex print path making use of the fluid property. On the other hand, it will be shown that the final product might suffer from a poor bond between two filaments. Therefore print strategies of printing concrete should be based on printing wet in wet material, despite the low strength characteristics of fresh concrete. Once the concrete is hardened, it is capable to resist high compressive forces. However, it is not capable to be stressed in tension due to the nature of the cementious material. Strategies to cope with this issue and allow for printed concrete to be applied in true structures will be discussed and some proof of concepts that have been realised will be shown.

Theo Salet