World's first metal 3-D-printed bridge enters test phase

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Credit: University of Twente

The Netherlands will be testing the first metal 3-D-printed bridge in the world. Plans are to insert this bridge in its permanent location in Amsterdam at the start of 2020. The Dutch company MX3D produced

the bridge after a design by Joris Laarman Lab in collaboration with lead engineer Arup. They used ground-breaking robot technology for 3-D printing. The bridge is remarkable thanks to both the revolutionary production method and its innovative design process. University of Twente, together with Imperial College London, will carry out the final construction tests. The bridge arrived by special transport at the UT campus and is placed near the de Horst building.

Initial testing will be on the total load-carrying capacity of the bridge to safeguard safety and functionality. The test will be supervised by Imperial College London. The bridge will remain at the campus for a further two months after the month planned for construction testing. University of Twente will work closely and actively with MX3D, Autodesk and Arup during this period, for the design, development and testing of the permanent sensor network to be installed on the bridge. MX3D and Autodesk are highly encouraging of creative and groundbreaking ideas for various aspects of the sensor network. This includes ideas for the types of sensors that could be incorporated in the network, safe and vandalism-proof sensors, data collection /communication/analysis, etc.

Planning

- Week 1 (2-8 September). Delivery of bridge to UT and pitching of tent.
- Week 2 (9-15 September). Preparation of the load-carrying capacity test by Imperial College.
- Week 3 and 4 (16-29 September). Load-carrying capacity test by Imperial College and CME.
- Week 4 and 5 (23 September-6 October). Research delegation from Autodesk to visit UT to brainstorm on the permanent sensor network.
- Week 5-7 (30 September-20 October). Design and testing of

permanent sensor network.

- Week 8-9 (21 October-3 November). Bridge available for testing under natural conditions by students and colleagues.

Provided by University of Twente