

## NCCR Digital Fabrication

### Innovative Building Processes in Architecture

#### A new national research initiative

##### **Changing paradigms:**

Digital fabrication represents a fundamentally new way of *making*. These emerging technologies have potential for significant advancements in industrial and constructive processes and a resulting enhancement in the quality of our built environment. To address the use of these new technologies at large scale the Swiss Federal Department of Economic Affairs, Education and Research (EAER) has funded the development of a new National Centre of Competence in Research (NCCR) to investigate Digital Fabrication: Innovative Building Processes in Architecture.

##### **Global Challenges:**

The rapidly evolving field of digital fabrication is now a global interest, with many countries committing large investments to the development of expertise on this topic. Switzerland has a pioneering role in the intersection between these technologies and architecture, and this new NCCR will solidify this leading position. This new NCCR will be a ground-breaking research initiative that will investigate digitally driven design, fabrication, and on-site construction with awareness of how these issues affect global concerns of society, economy, and sustainable development.

##### **National Expertise:**

The NCCR Digital Fabrication brings together excellence and experience in a team of fourteen leading professors from Swiss Institutions. This team will study, experiment, and develop new approaches to Digital Fabrication through the integration of the disciplines of architecture, computer science, structural engineering, material science, control systems engineering, and robotics. Key to this NCCR will be the intensive collaboration between disciplines and fostering high-risk / high-reward research, all with the goal of strong knowledge and technology transfer into real world practice and industry.

##### **Researchers wanted:**

This NCCR brings researchers to the forefront of this exciting new field by: 1) supporting fundamental research and PhD work; 2) equipping the centre of competence with cutting edge technology so as to be a training ground for the future; and 3) by stimulating collaboration between disciplines and with industry.

With an excellent tradition in architecture and engineering, and a recognized leadership in the fields of robotics and computational design, the ETH Zurich is an ideal context for the NCCR, and when partnered with the EPFL, the BFH and Empa, this uniquely qualified team will have an unprecedented opportunity to advance research and change the way we build.

#### Facts and Figures:

SNSF Funding contribution: **13.4 Million CHF**

Funding period: **1<sup>st</sup> Phase (4 years), renewable to a maximum of 12 years.**

Home Institution: **ETH Zurich**

Partner Institutions: **EPF Lausanne, Fachhochschule Bern, Empa**

Number of Principal Investigators: **14**

Number of Post Doctoral Researchers: **6**

Number of PhD Projects: **24-30**

Education Program: **MAS in Digital Fabrication (start 2015)**

New Home Building: **Arc\_Tec\_Lab (2016)**

Experimentation Facilities: **Robotic Fabrication Lab (2016)**

First full scale demonstration project: **NEST demonstrator (2018)**

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