Latex Formwork
Concrete wall panel construction method, Cambridge, MA, USA

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Summary by the jury
The research project by a Massachusetts Institute of Technology (MIT) doctoral candidate investigates a new construction method for creating thin concrete panels in Cambridge. The faceted formwork consists of two elements: a substructure and a lining, with the former made of a flexible wire mesh tracing the panel’s basic geometry and the latter made of a latex sheet determining the panel’s final form. The proposed method aims to reduce the weight of concrete molds and thus the amount of material used in construction. Additionally, the formwork is both reusable and recyclable. Furthermore, the research of Ephemeral Concrete explores potential applications of the proposed method — leading to modular façades with a unique and strong architectural expression.

Appraisal by the jury
The jury commends the exploratory nature of the project. Particularly appreciated is the author’s intention to establish a dialog between the workshop and the design atelier — a process investigating forms of mutual relationships between the production of full scale prototypes and the design of architectural propositions by means of drawings and digital models. A form of knowledge production is here explored that merges academic and practical work.

Project data
Context: Materials, products and construction technologies
Client: School project
Background: Academic research

Further authors

Image 3: Three different formworks were tested and a hybrid fish wire and latex sheet formwork was developed.

Image 4: Instruction of the final method: a light-weight and reusable formwork.

Image 5: Final model making process. Mock-up model using fish wire and latex sheet.

Image 6: Possible application of the concrete panel. Building a spatial sequence with the concrete wall panel.

Image 7: Physical models. Possible application of the concrete panel.

Image 8: Possible application of the concrete panel for building. Elevation, section and plan.

Image 9: Render image and plan.

Image 10: Render image and plan.