

DAVE PIGRAM in collaboration with WES McGEE & BRANDON CLIFFORD (MATTER DESIGN)

Periscope Tower

2010 | *Modern Atlanta*

10Up is a design competition organized by The Young Architects Forum of Atlanta (YAF Atlanta). Modern-Atlanta (MA) hosts an annual celebration of architecture and design with a week of events in and around the US. In 2010, MA invited YAF Atlanta to create a competition for a temporary outdoor installation, open to professionals and students in the fields of architecture, industrial design, landscape architecture and urban design, which would act as a beacon for the event week.

Taking on the task of designing a rapidly deployable temporary installation on a limited budget and a limited plot (the buildable area is no more than a 10' x 10' footprint), we proposed a tower of foam. The Periscope Tower is a research output in the domain of algorithmically controlled robotic fabrication, a subset of emerging techniques of mass customisation and file-to-factory processes in the construction field. It represents the production of new knowledge in three ways. It is the first example of a post-tensioned structure constructed almost entirely from polystyrene foam at this scale. Second, it is the first architectural project to deploy a robotically mounted hotwire cutter paired with three-dimensional modelling software. Third, the project utilized custom written software that directly generates robot instruction code, eliminating the need for construction or shop drawings and enabling an empirical feedback loop between formational processes and material properties.

By combining these three areas of new knowledge, the Periscope Tower demonstrates the design potential and real-world practicality and use value of the fabrication and algorithmic design techniques in terms of speed of assembly, weight, and relative affordability. The Periscope Tower was the winner of the 10Up competition in its inaugural year.

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Periscope Tower perspective view

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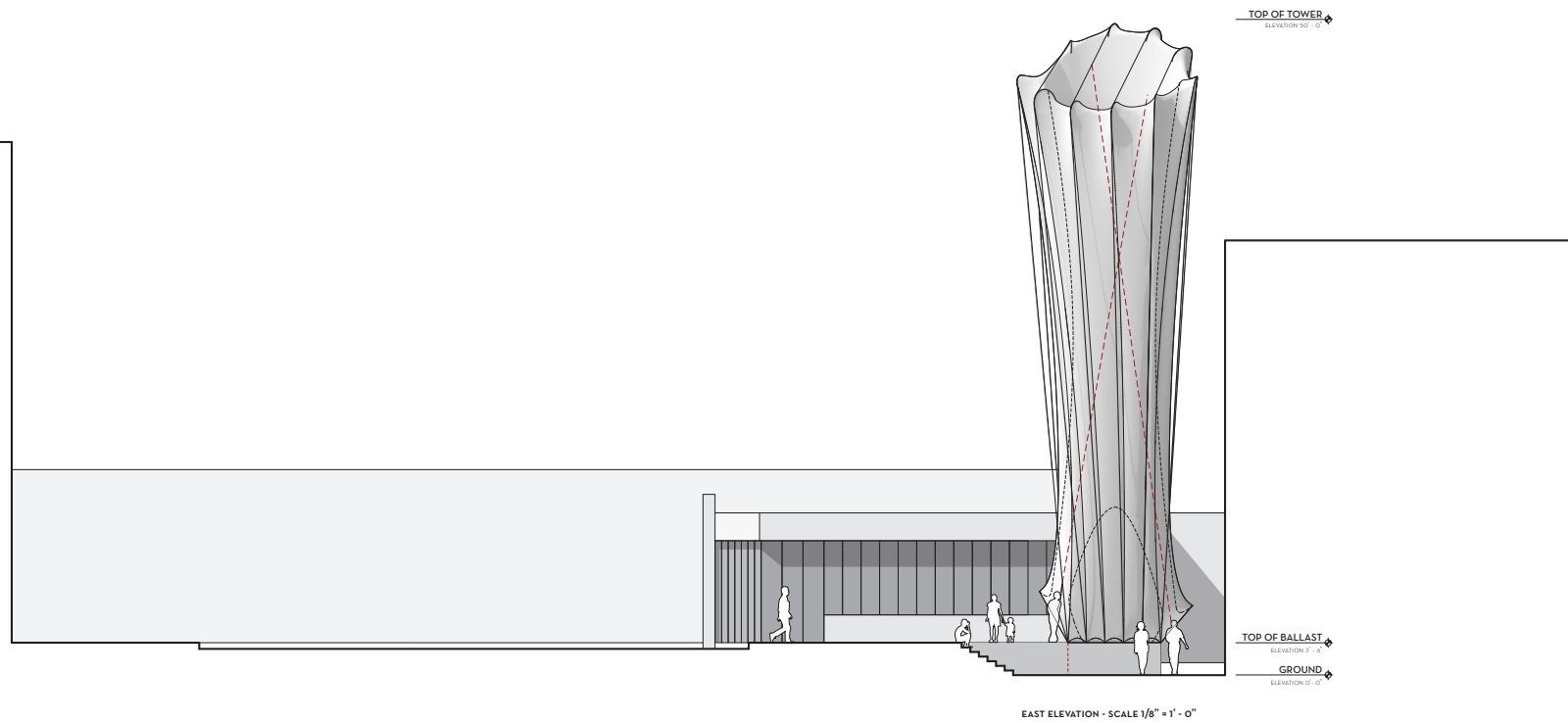
Installation view

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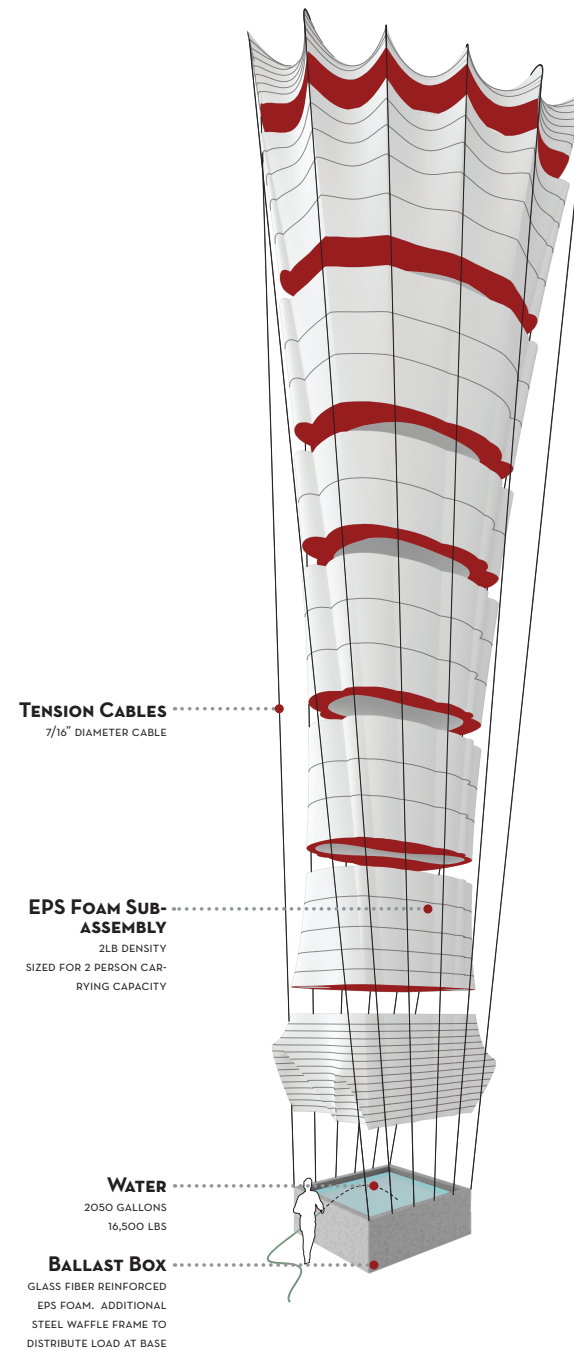
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East elevation view

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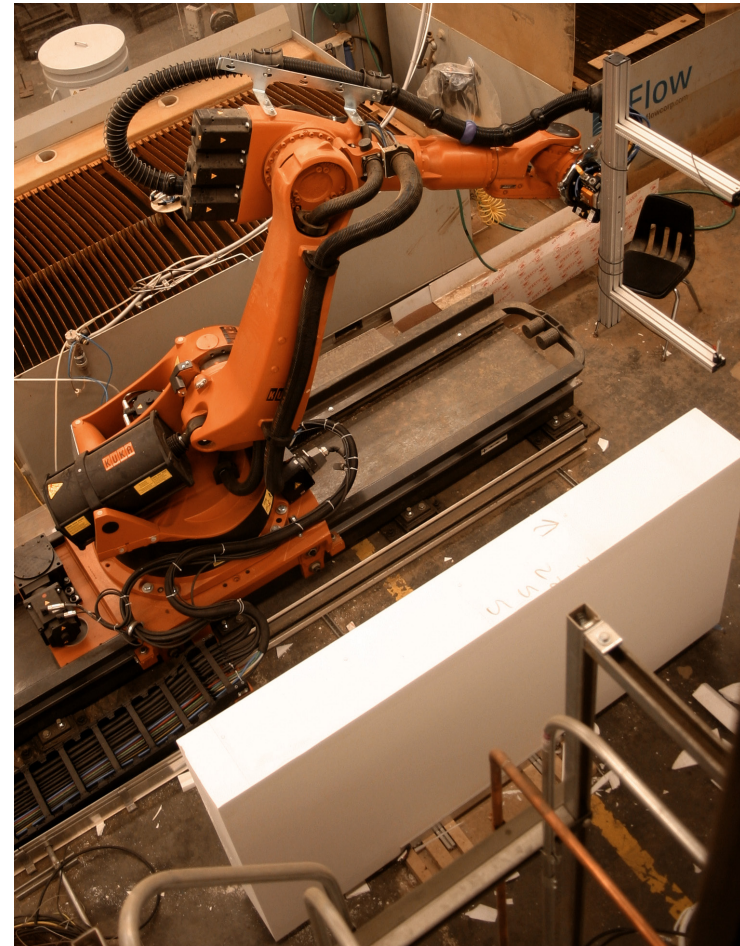
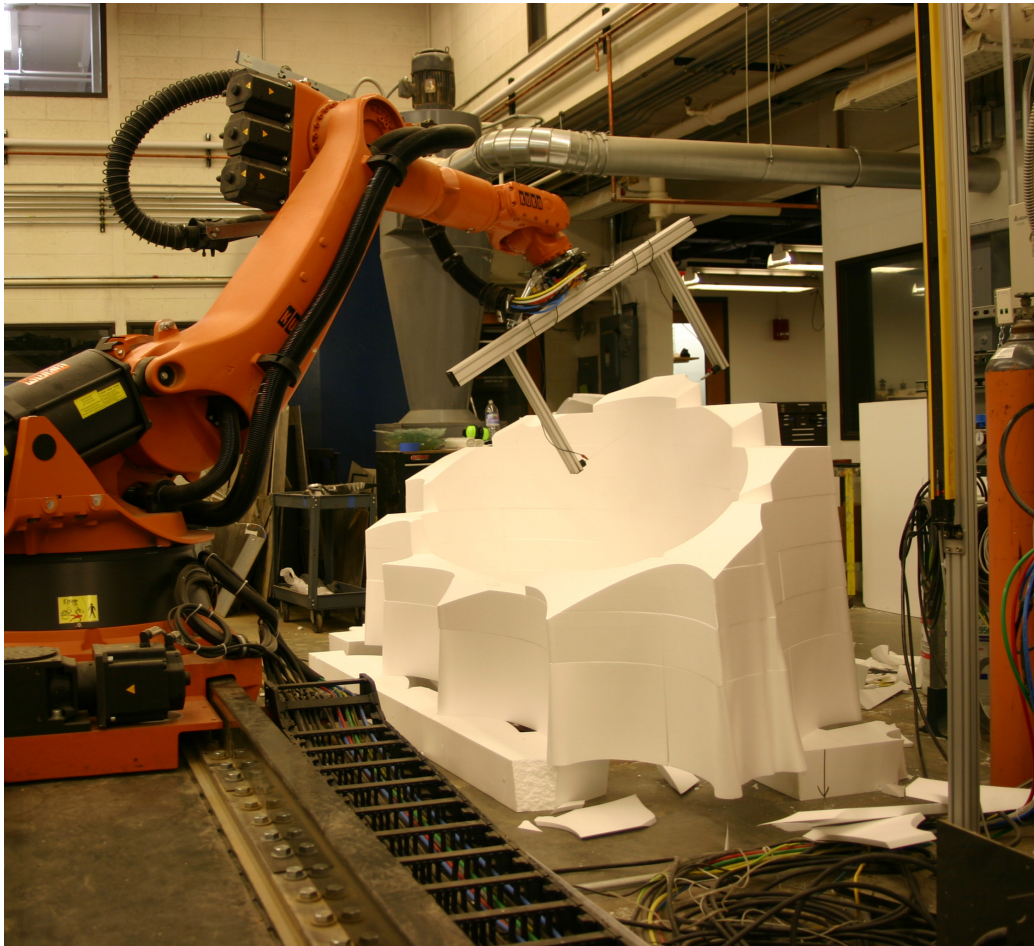


ASSEMBLY DIAGRAM

Periscope Tower assembly diagram

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Construction of the Periscope Tower



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