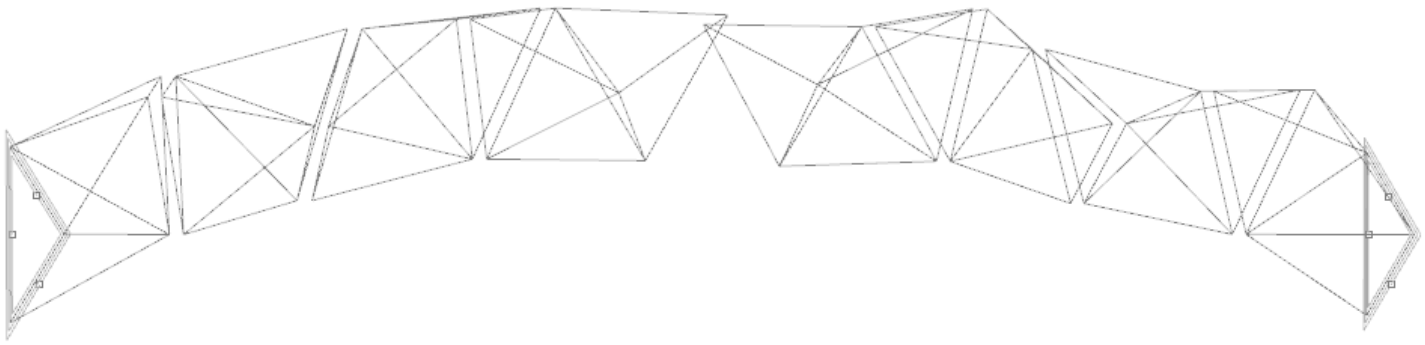
Strength in Numbers

Lisbeth Acevedo, Hannah Lienhard, William Wu



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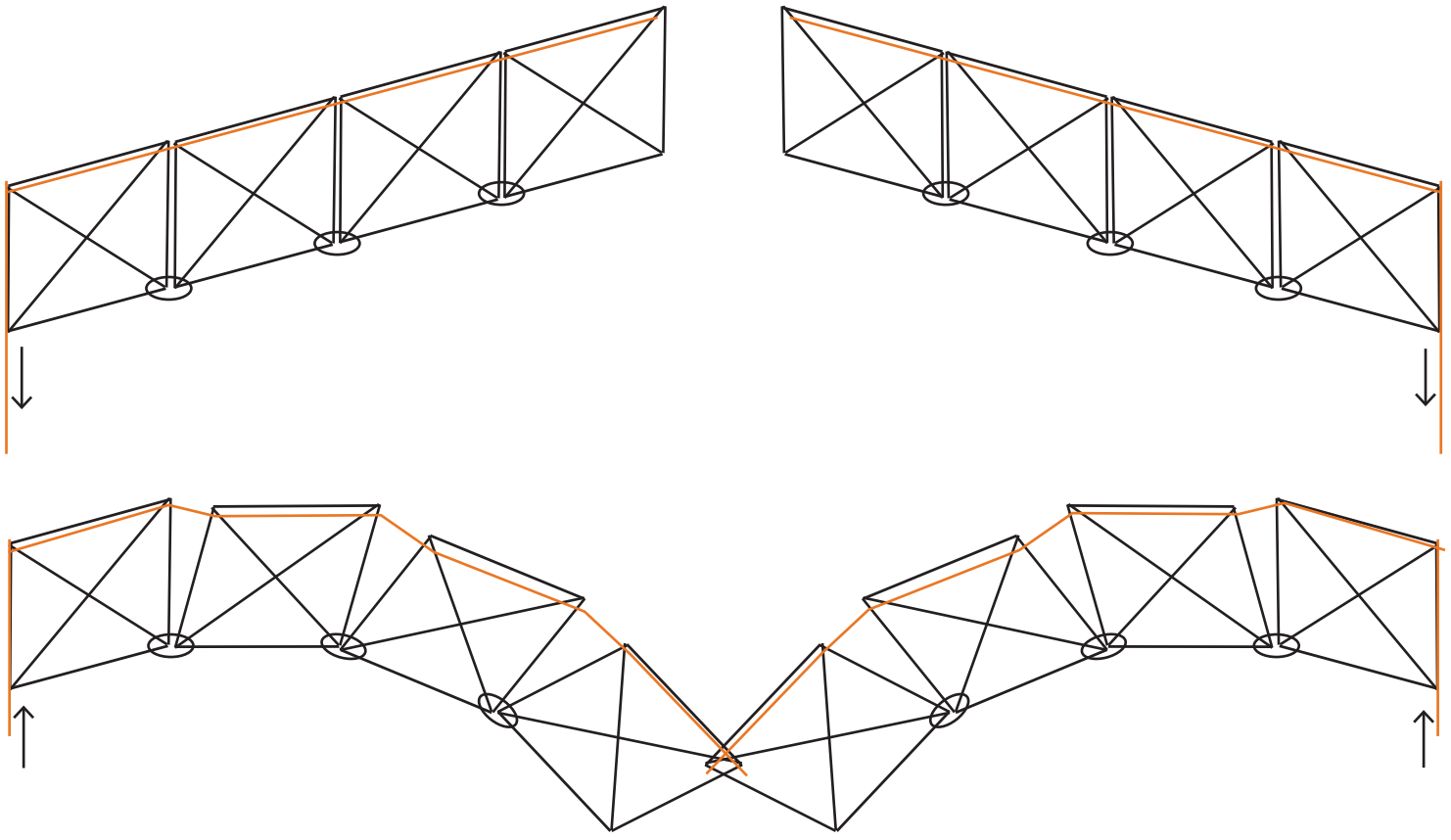
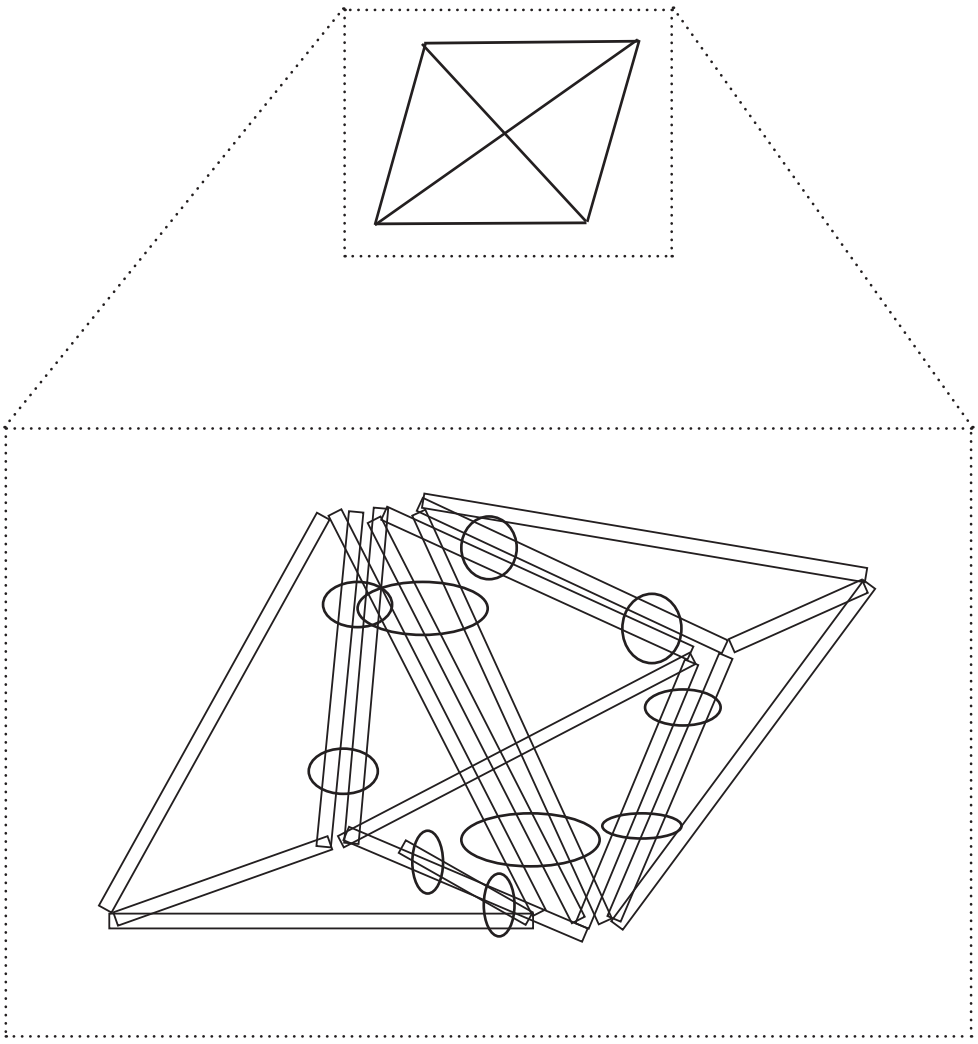
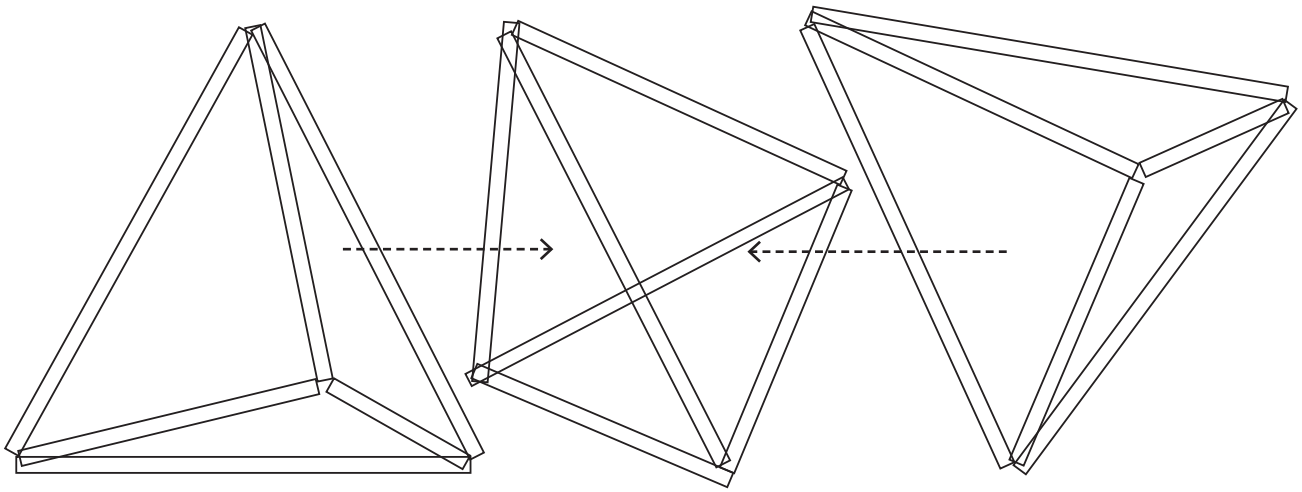
Strength in Numbers is a 24 foot spanning structure that is as modular as it is mobile. Its two symmetrical arms, each broken into four groups of three tetrahedral units, are able to curl up and down in response to tensioned control ropes. In addition, the structure is reversibly manufactured; using clear plastic tubes, velcro, knotted rope, and snap-in connectors, it is able to be broken apart into component pieces as easily as it is assembled and deployed.

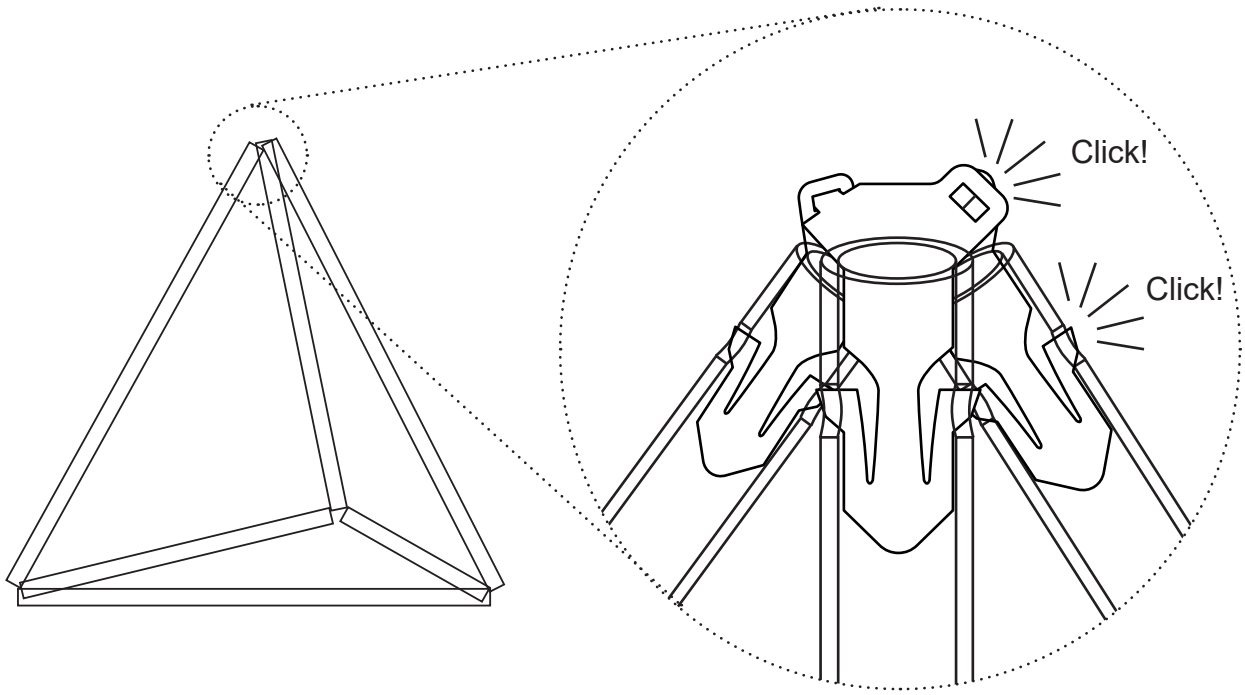
Each arm is broken up into four groups, connected by velcro joints on the bottom, and by threading control rope through near the top. Thus, the structure can curl up or sag down in response to the control rope, as shown below.

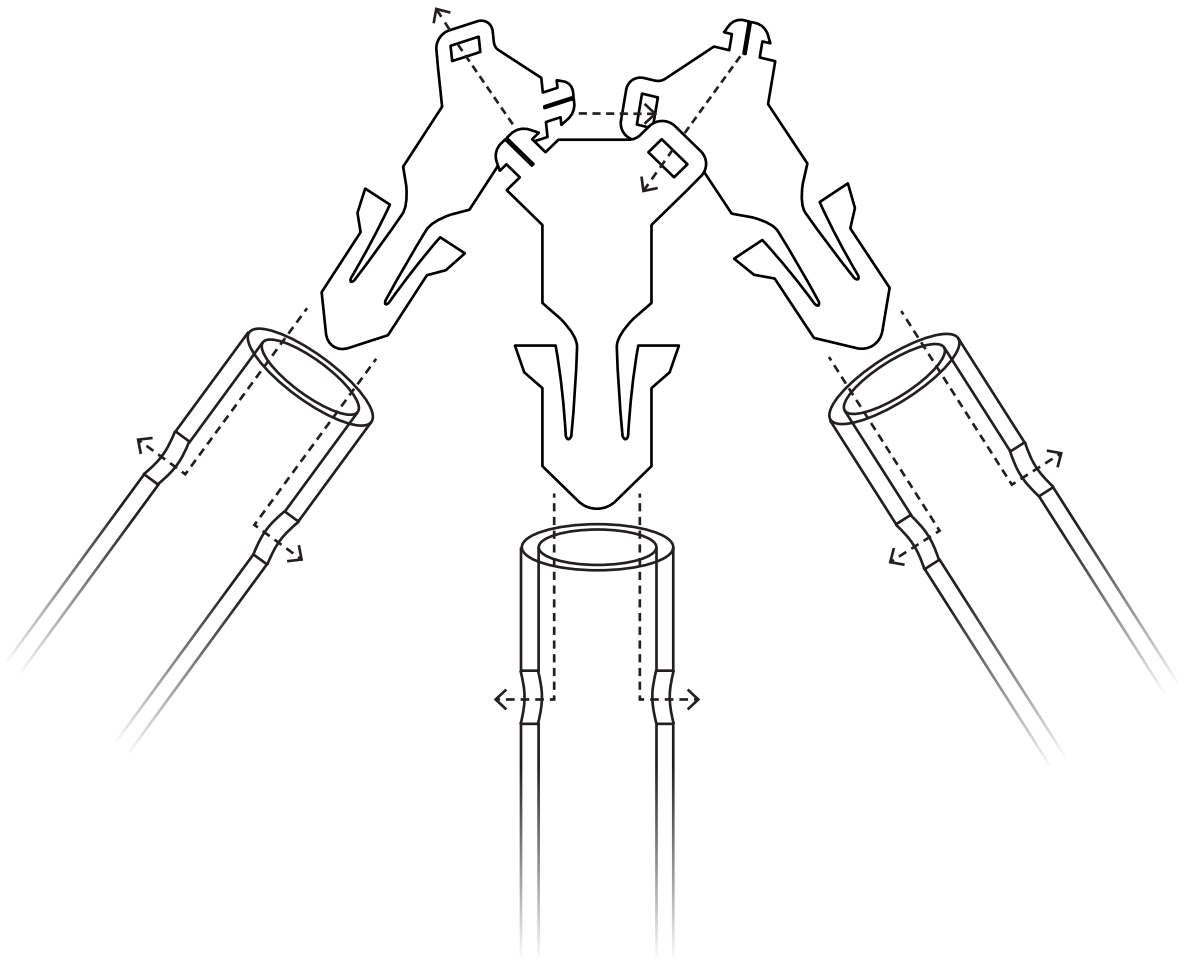




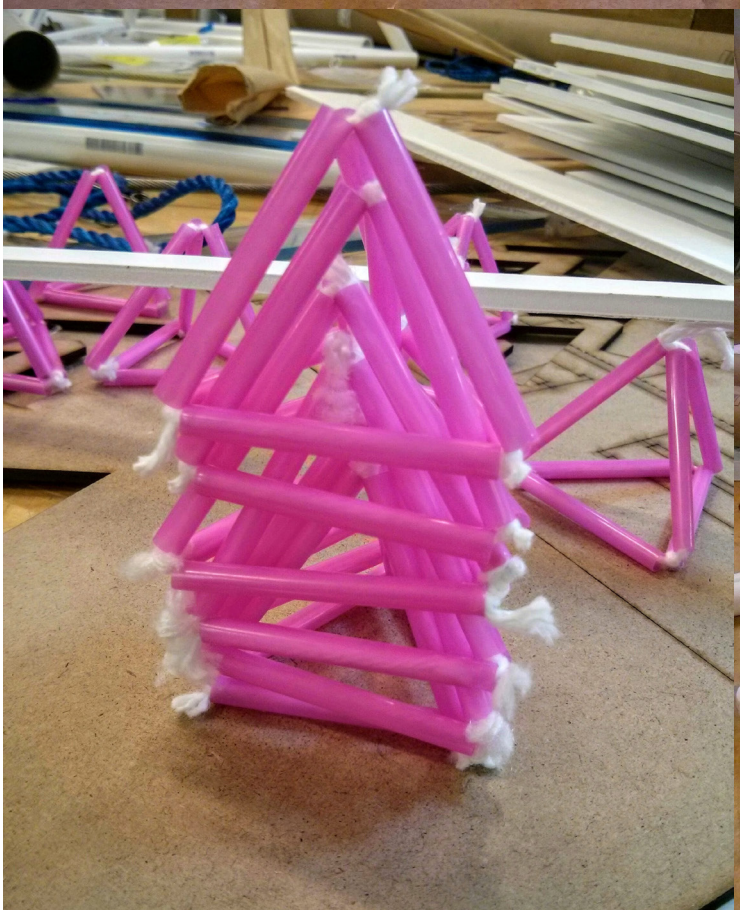


Each group is further subdivided into three tetrahedral modules, held to each other by velcro straps.

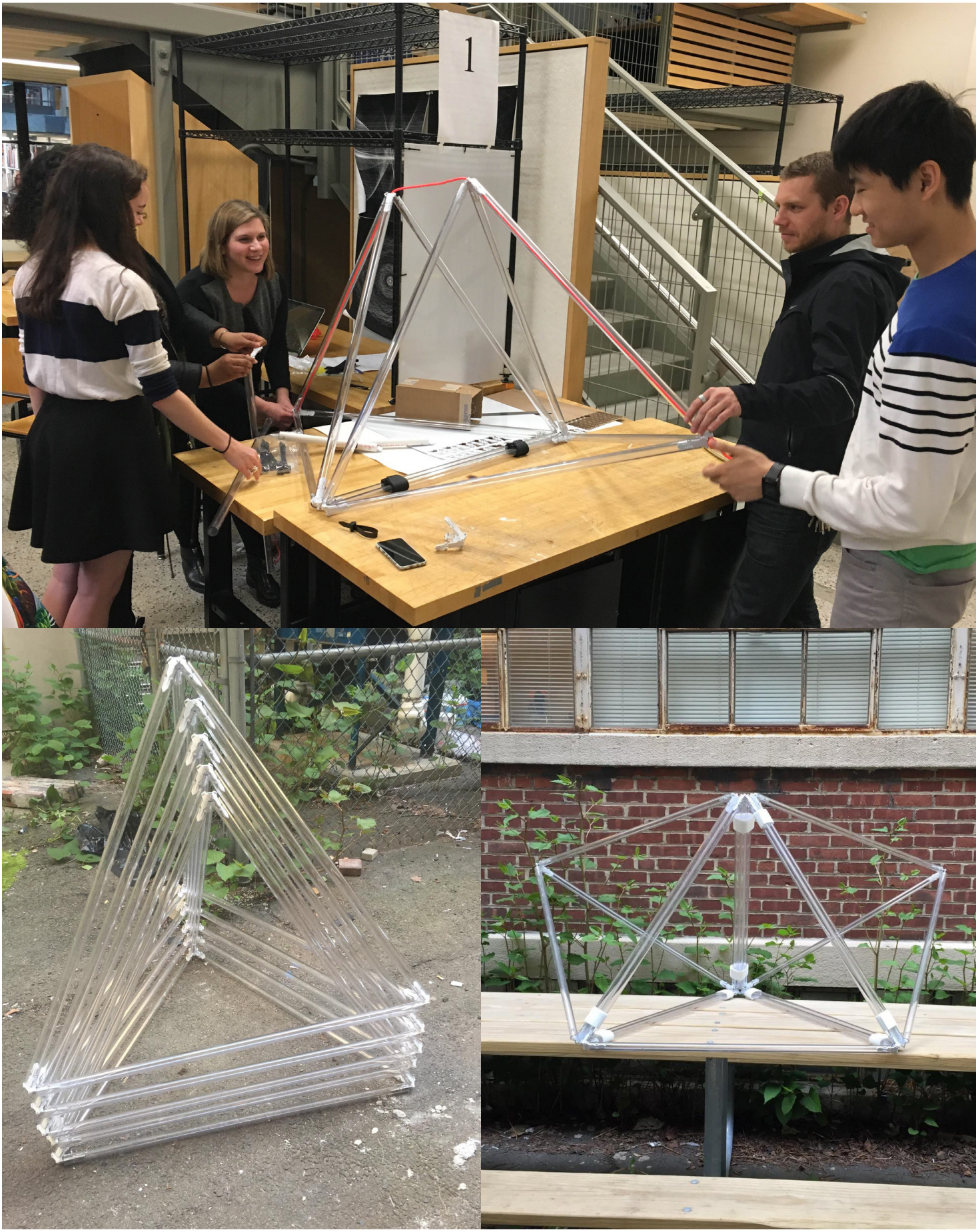




Each tetrahedral module is made from six 3-foot lengths of pipe, connected on the ends by laser-cut plastic connectors.



Prototyping the connectors and tetrahedrons



Testing and building in full scale