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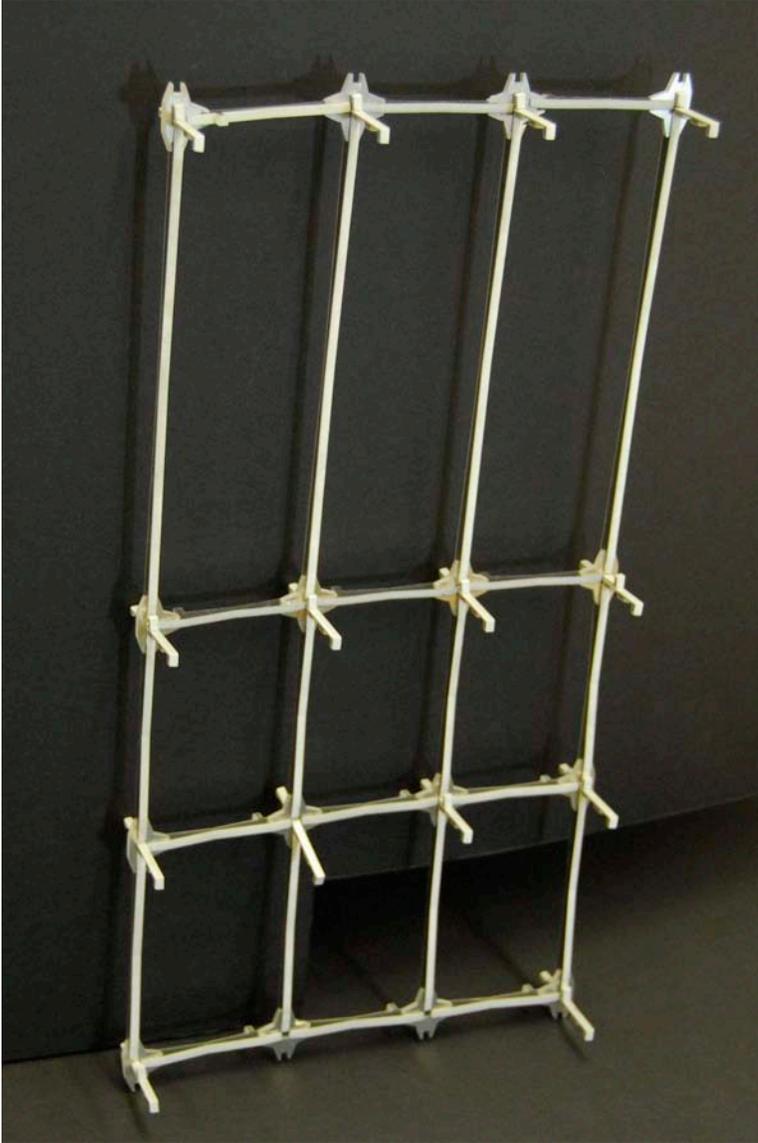
4.510 Digital Design Fabrication
Fall 2008

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Ornamental Structures

Wall Design

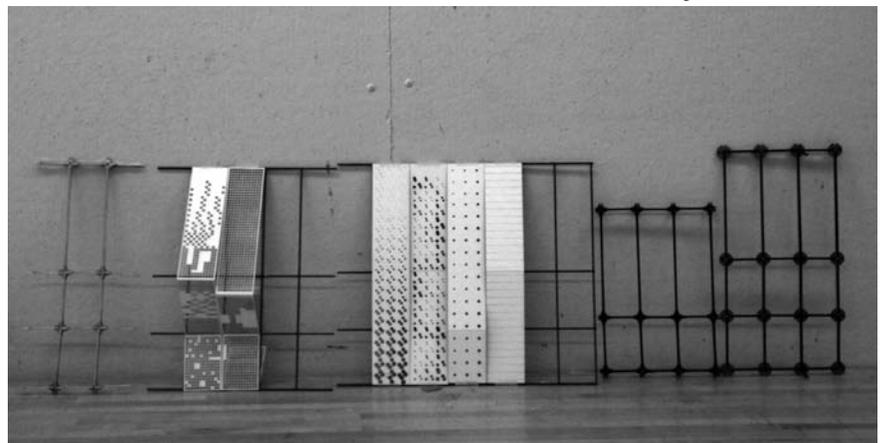
axon of wall frame - waterjet cut



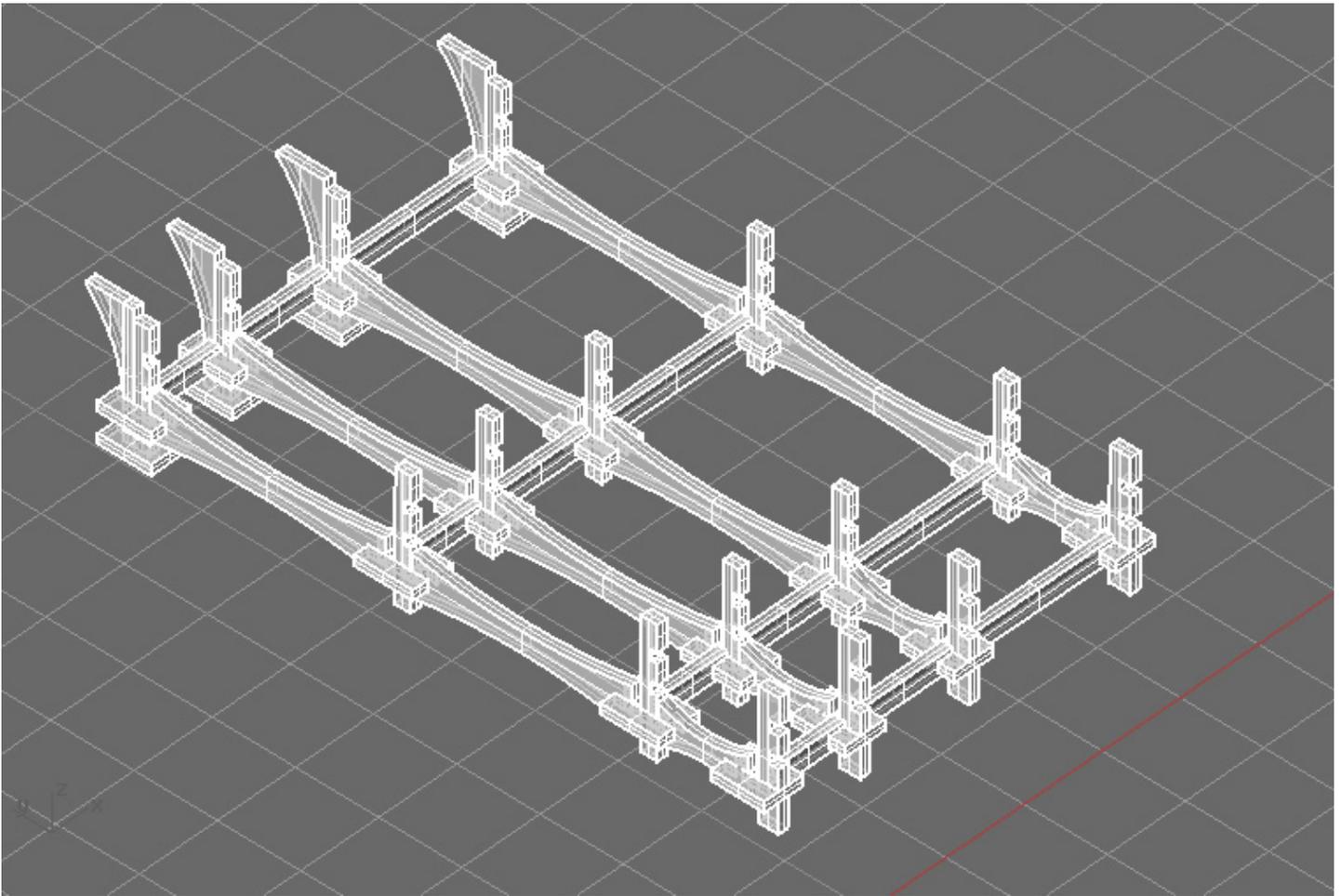
The wall system that we designed is meant to be an operable system that allows the facade to slip in and out creating new configurations on the interior. This connection between the exterior system and the interior system are crucial to the design. Based on this objective we set about developing our joint. The joint has 5 fastener points, 4 for brackets in the x and y axis and 1 for the adjustable facade fastener in the z axis.

The reconfigurability of the wall system led us to explore the idea of a facade that changes opacity based on a screening system which serves as the main cladding for the facade. This cladding provides more or less privacy + protection from the elements based on the decisions of the buildings inhabitants.

elevation of wall systems + screens



axon of chair

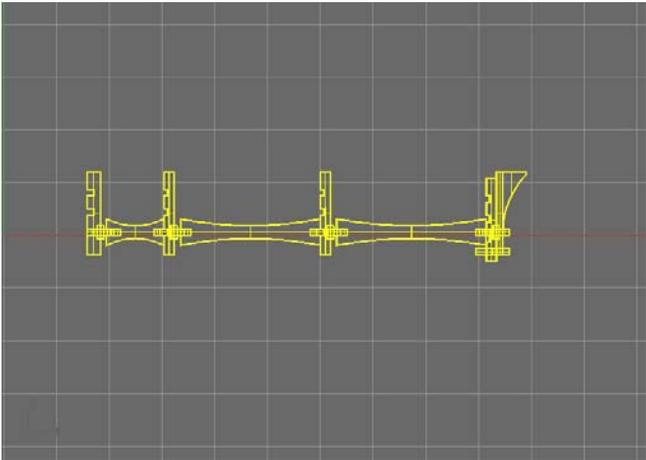


Above: Axon of System - Rhino

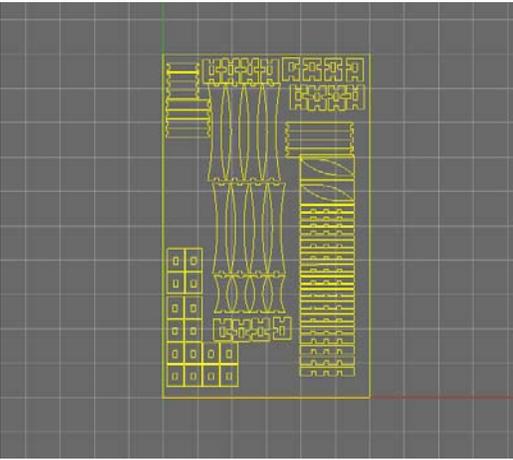
DESIGN MODEL

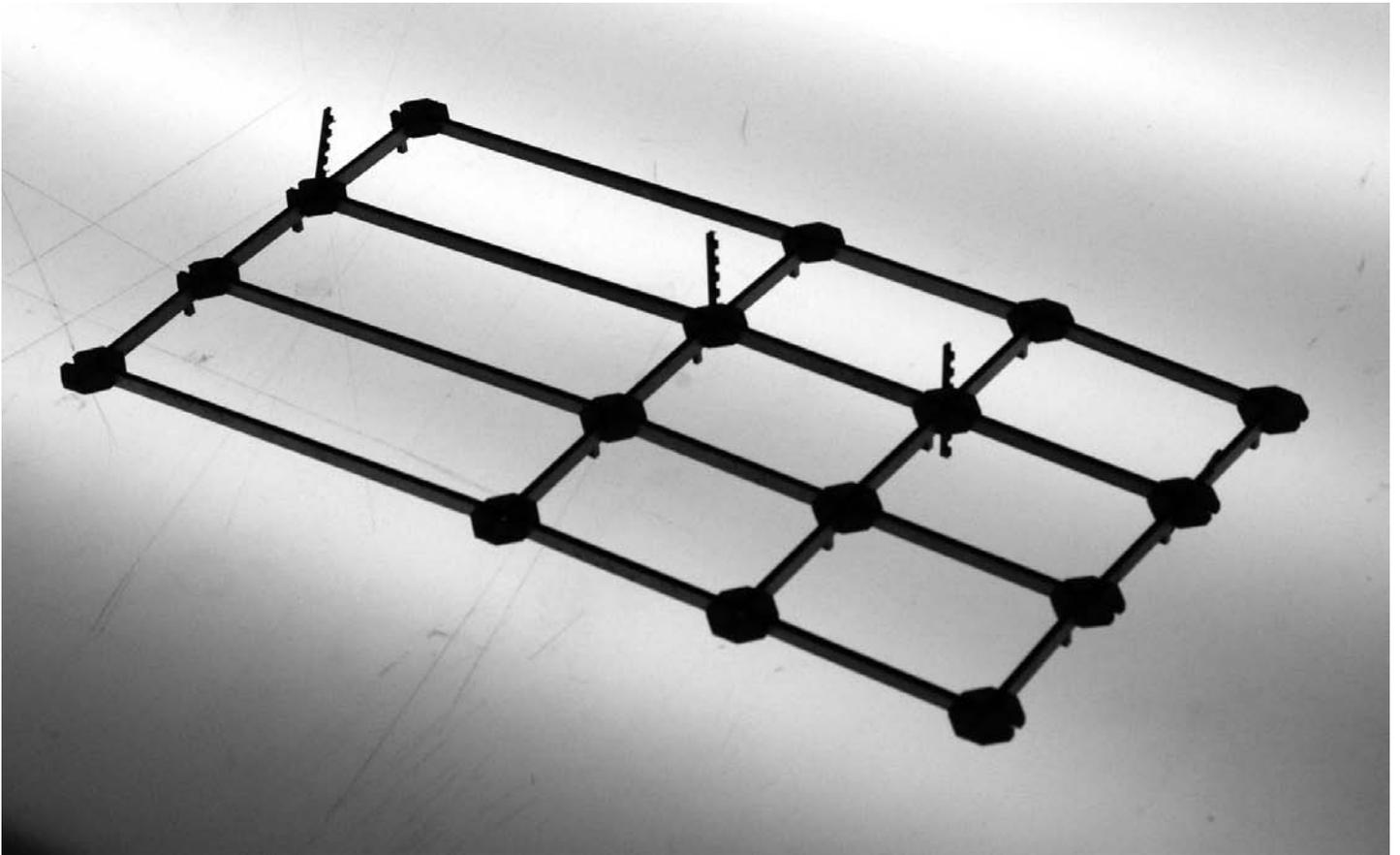
The design model was a sketch of the basic concept for the wall design. It was one of many different sketches and was a great learning tool. It allowed me to explore some of the basic concepts of the 3d model while also imagining how the materialization of the system might take place. We used the CAD files that were generated from this Rhino model to build our first prototype.

Below: Elevation of System - Rhino



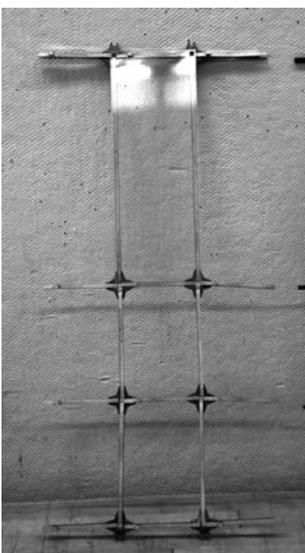
Below: Cut Sheet - Rhino





The prototype shown here allowed us to identify potential problems and to improve the functionality of the joints. Once some slight adjustments were made based on structural issues and configurability we moved on to the facade extensions. These extensions caused us to believe that another joint would be necessary, this joint will be presented in the final project.

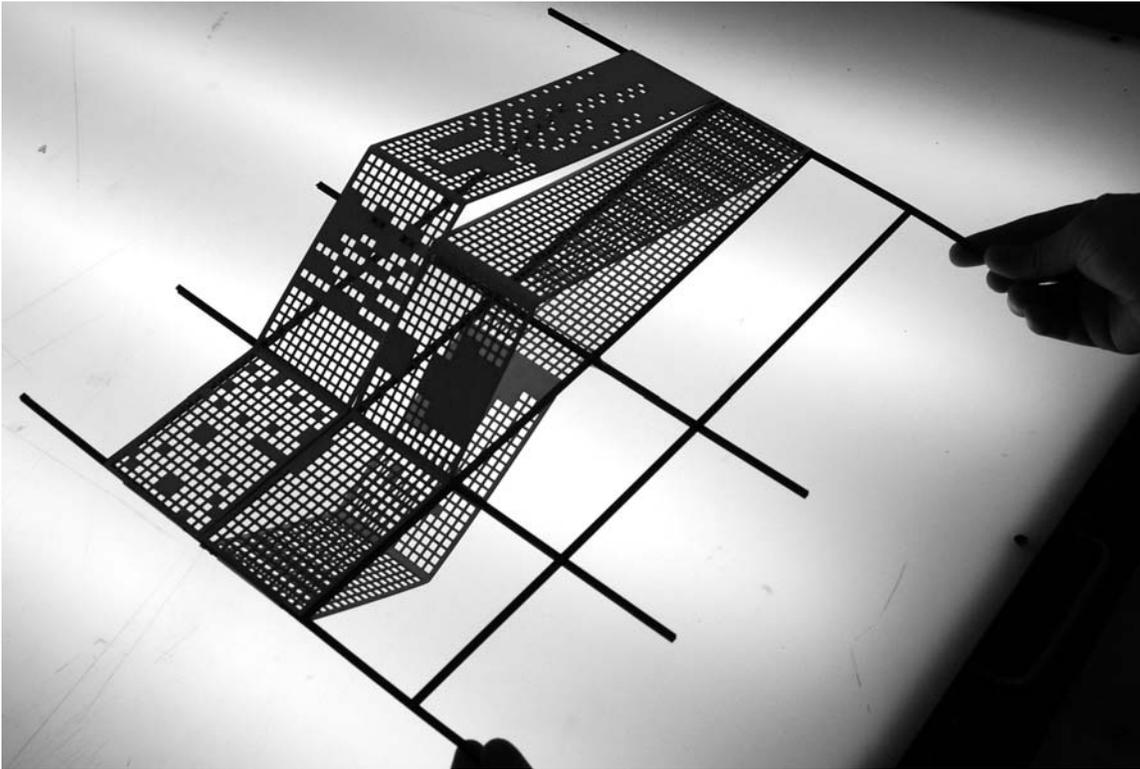
PROTOTYPE



Left:
elevation of waterjet prototype

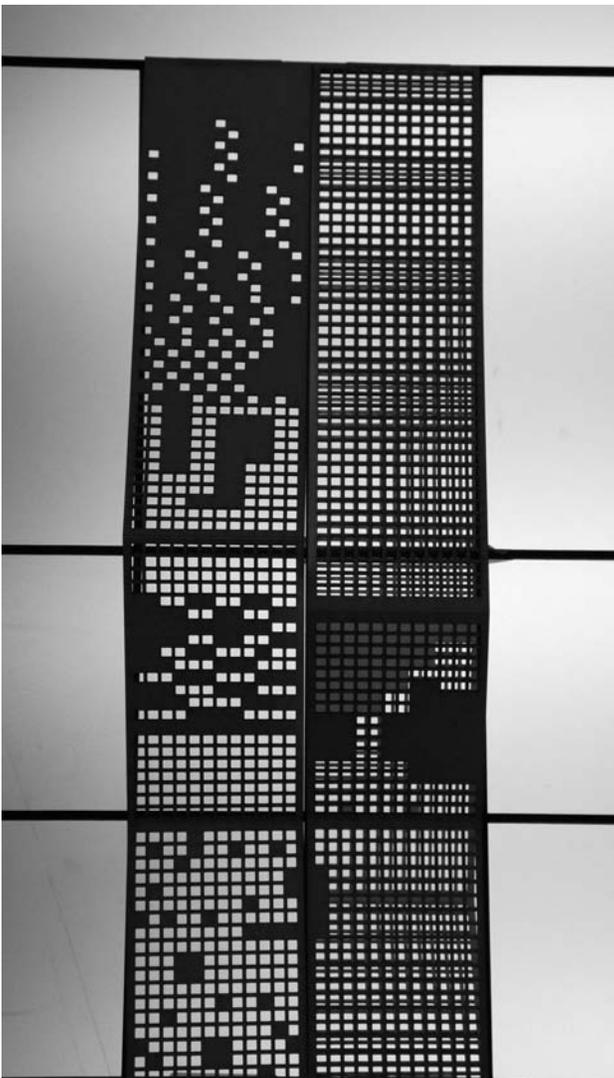


Right:
axon of masonite prototype



Left:
axon of screen

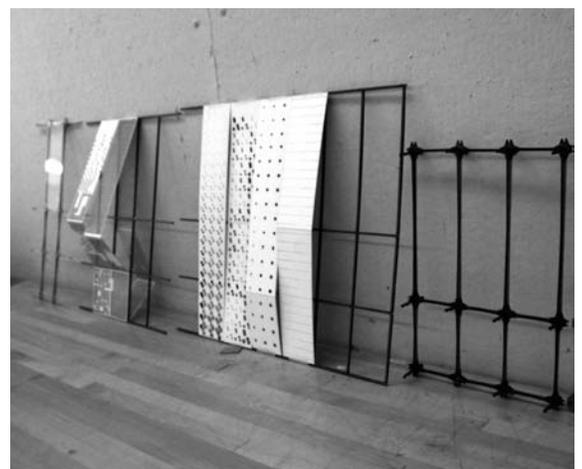
Below: screen detail

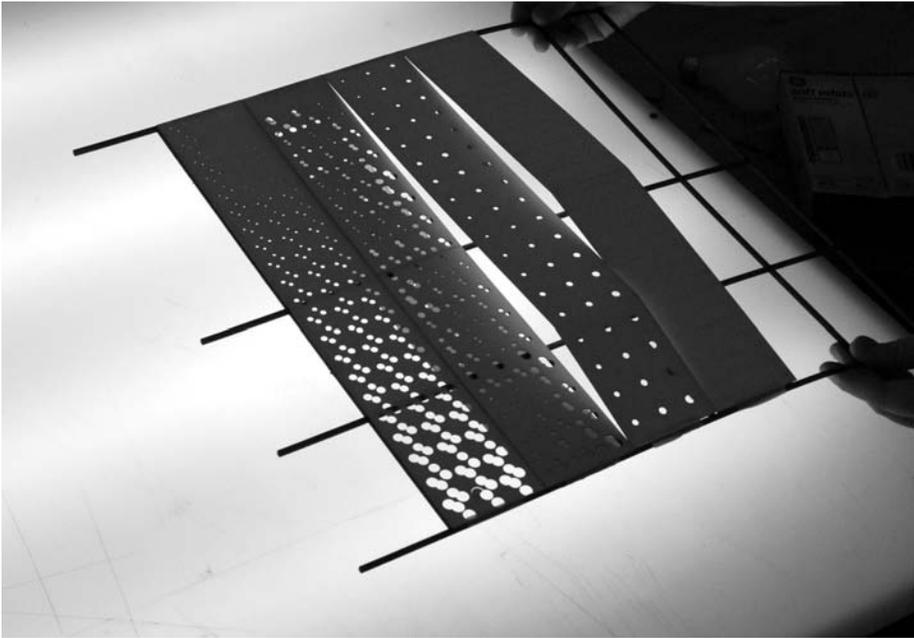


FACADE STUDIES

During our design process we implemented a series of facade studies to imagine different ways to vary the opacity of our wall system. We tried out 6 variations during this initial study. In subsequent studies we will vary materials and scripts to adjust for the desired transmittance of light and views.

Below: Screens and Wall System

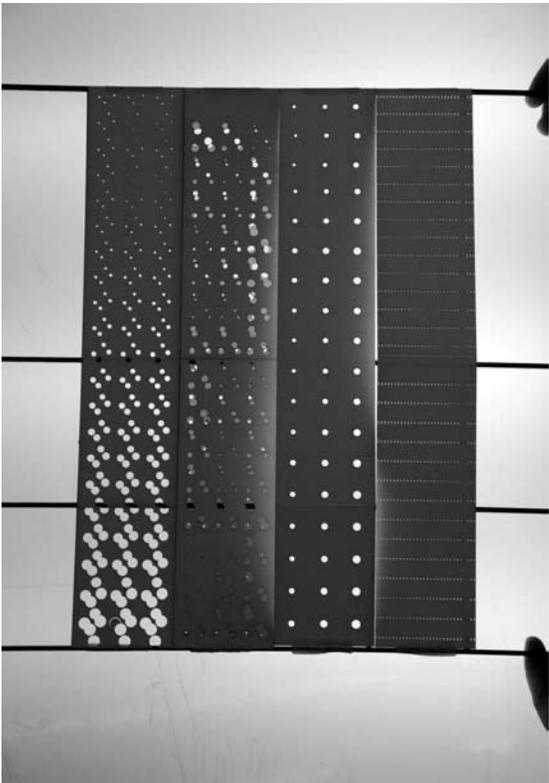




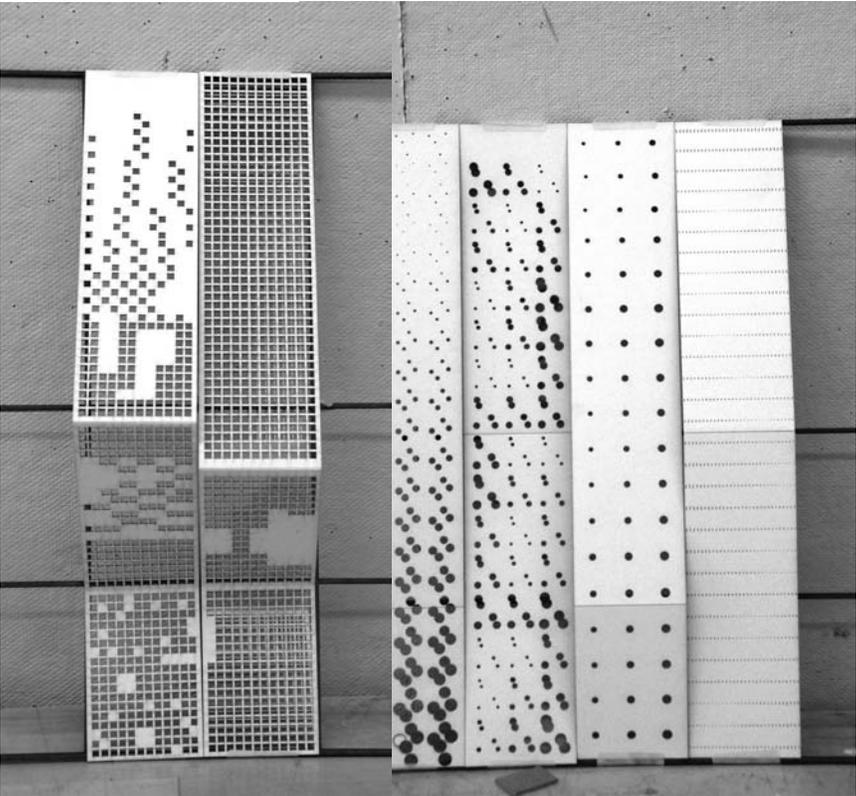
Left: screen on light box

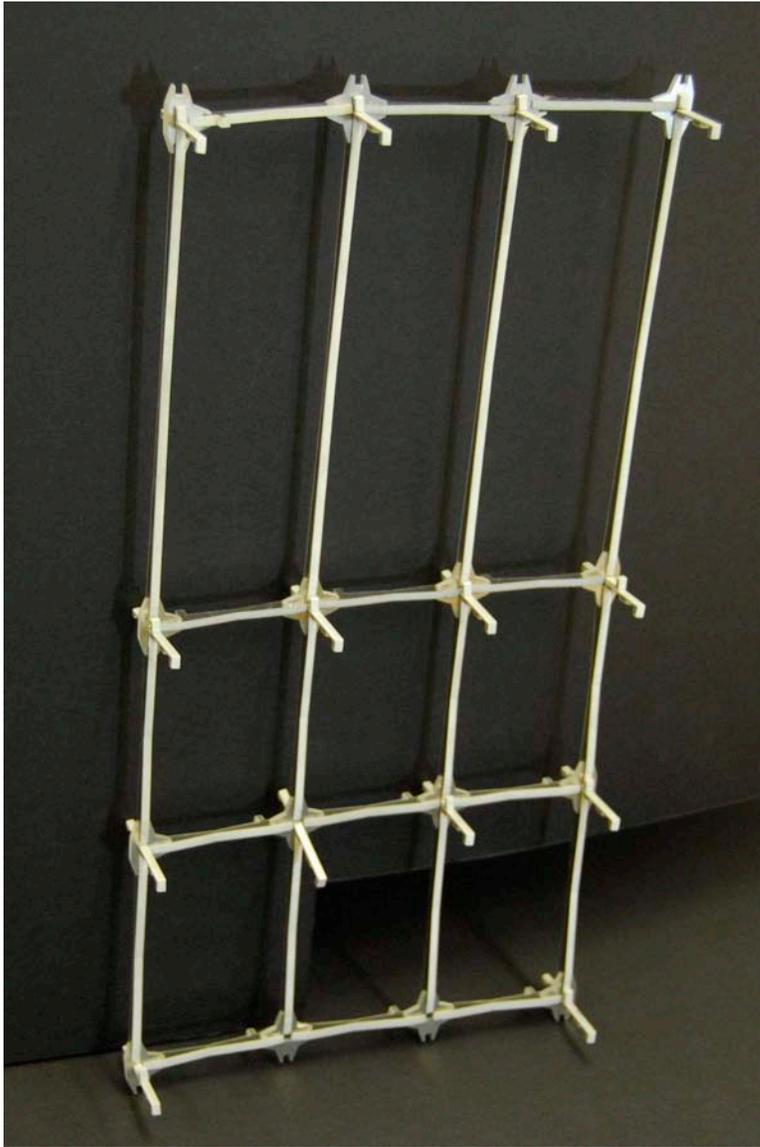
FACADE STUDIES

Below: Screens on light box



Below: Screens in elevation

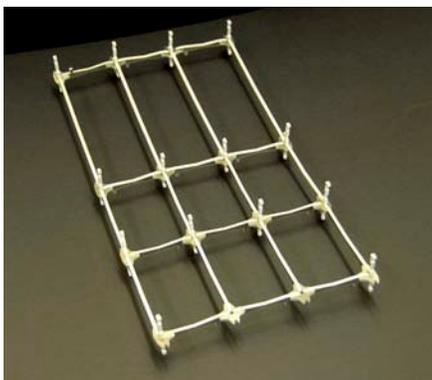




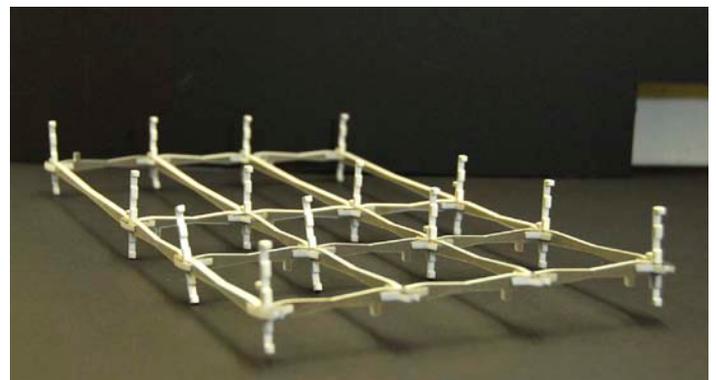
Left: Waterjet cut wall system

FINAL PRODUCT

Below: Axon of system



Left: Axon of system



The final waterjet wall system is very beautiful to behold. We are somewhat satisfied with the amount of built in functionality. We do intend on upgrading the joint, producing more screens and developing the roof connection detail. Once we have enhanced the joint we will then cut more pieces at a larger scale and begin to finalize the design. Overall we are happy with our progress, but have much more that we would like to accomplish before the end of the semester.