

Julie Solomon

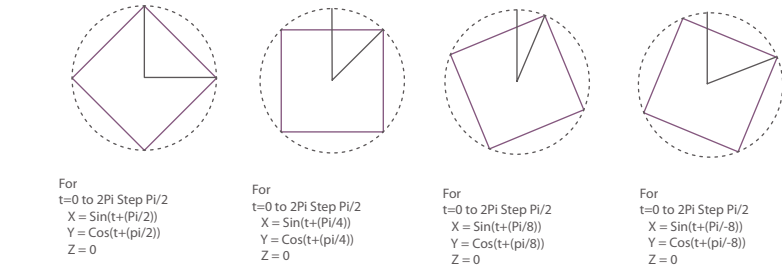
Julie.L.Solomon@gmail.com
860.798.3698



View through the museum.

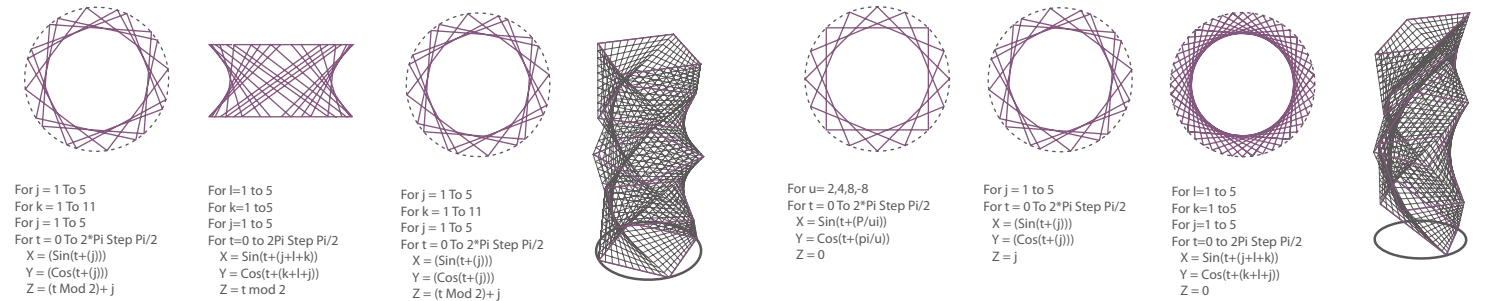
Geometry, Pattern, and Performance :: Islamic Extension to the Metropolitan Museum of Art Fall 2009

The Masjid-Jami located in Isfahan, Iran, embodies a large number of Islamic characteristics. The artifact encompasses the use of mosaic geometry and color to create a visual pattern. Through a series of rotating shapes employed at different scales, a strict pattern and geometry is formed. According to *The Mediation of Ornament*, mosaic forms are the first type of Islamic geometry. "Geometry appears, thus, as a frequent category to classify, describe, and comprehend the visual experience of many objects or monuments of architecture... It is also part of the process of creating things." [135] These



patterns were applied throughout Islamic art. According to Grabar, "In all these works the visible unit of design - vegetal, geometric, or other - has been constricted into a vehicle for the expression of something else than itself...each object or wall is totally covered; no part is left without ornament...the ornament can best be defined as a relationship between forms rather than as a sum of forms." [198]

The design for the extension to the Metropolitan Museum of Art acts in a similar fashion. Drawing inspiration from the mosaic pattern, the use of rotating squares acts as the primary design tool for both pavilion and landscape. This geometry is applied in a way that creates both form and circulatory patterns. Originally, this geometry was used in a field of differing variables in order

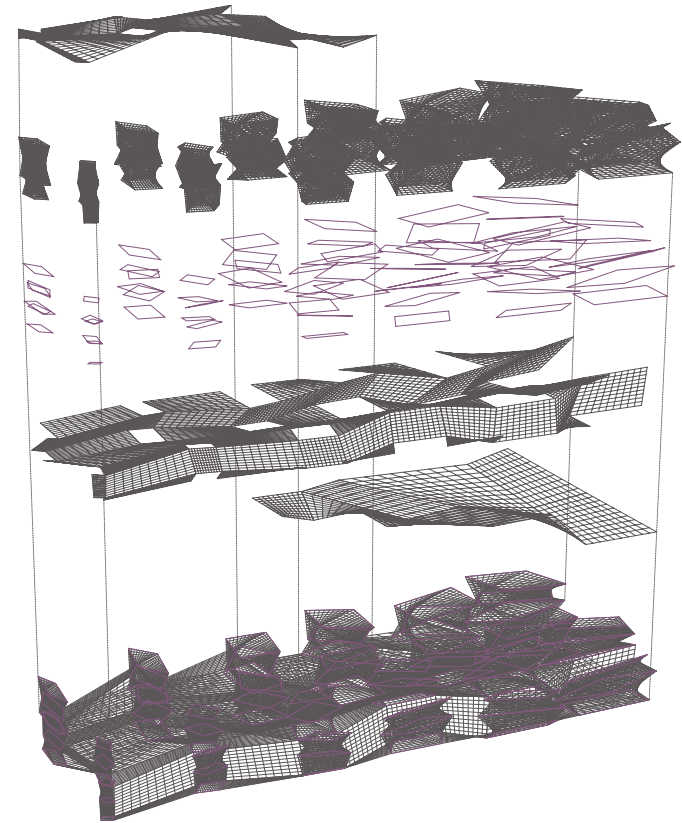


to create infinite growth possibility. According to Stan Allen, "a field condition could be any formal or spatial matrix capable of unifying diverse elements while respecting the identity of each." It all cumulates in "composition by parts." The forms generated by this design method create the overall field. Without each component present, the computation loses focus and discipline.

The MET extension design grows on this field condition. By employing the same geometry in similar discipline, space is created on the underside of the landscape. The landscape and museum merge into one another. The rotating squares act as both storage, core, and light wells in the project. The turbulent space created by the connection of the rotating squares acts

as gallery space. Each space is therefore unique within itself, but parametrically related. The entire design is composed of hyperbolic, four rail surfaces. Every connection and inflection point of the design can be simplified down to a straight line. The field moves from dense to scattered as the site morphs from Fifth Avenue into Central Park.

Allen, Stan. *Field Conditions. Points + Lines.* 1985
Grabar, Oleg. *The Intermediary of Geometry. The Mediation of Ornament,* Princeton University Press, 1989.
Grabar, Oleg. *Islamic Attitudes toward the Arts. The Formation of Islamic Art.* Yale University Press, 1973.

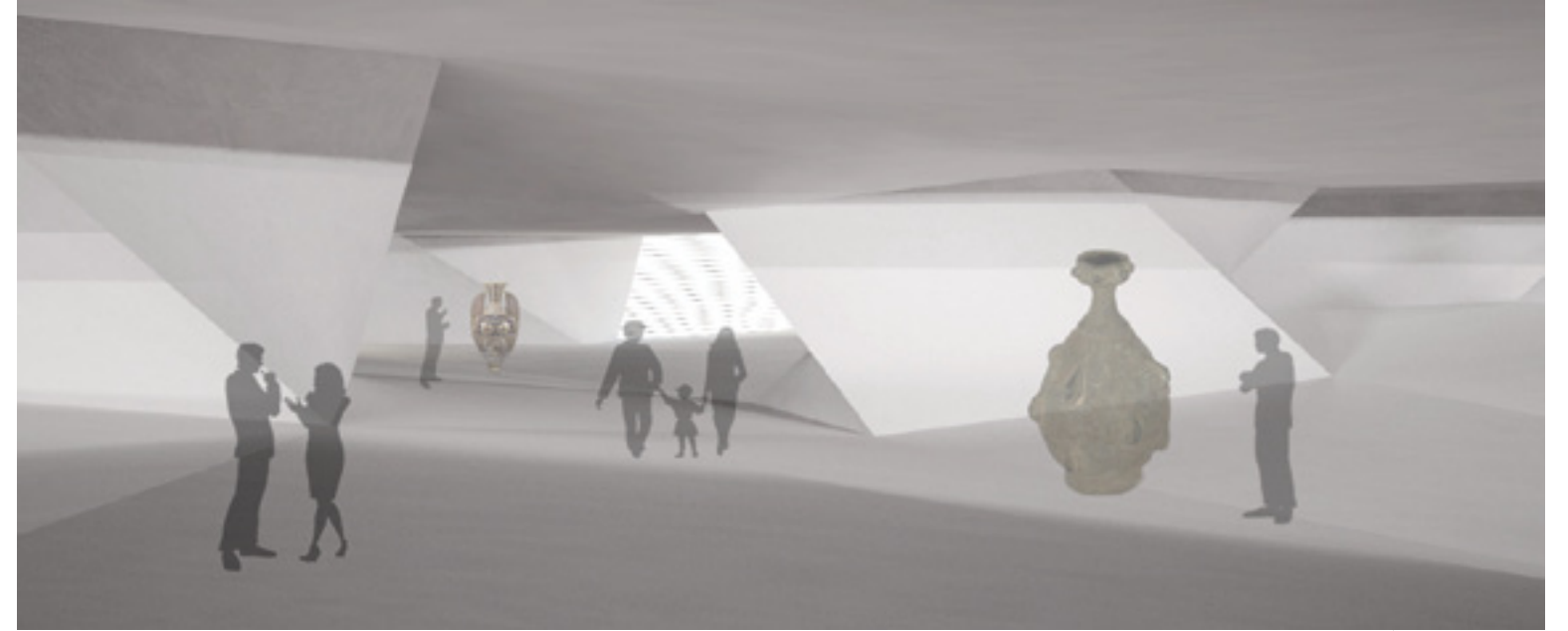
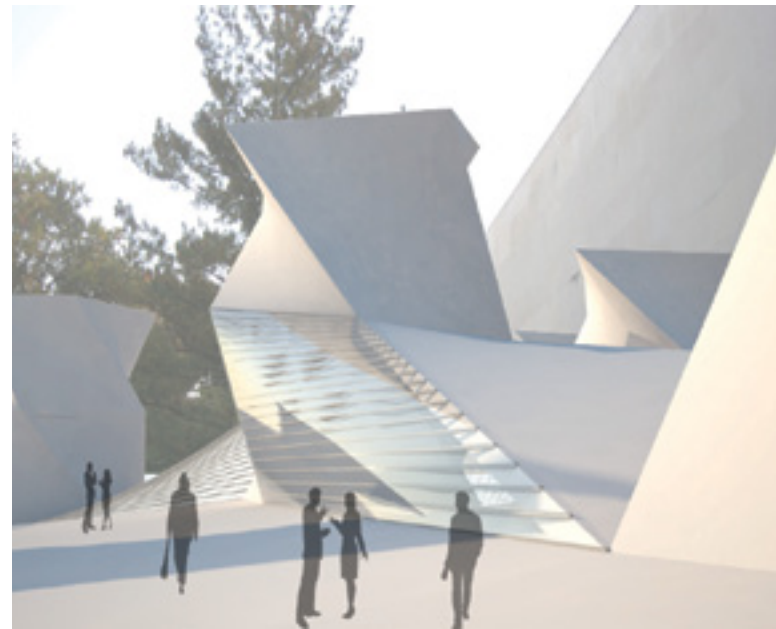


Exploded axonometric.

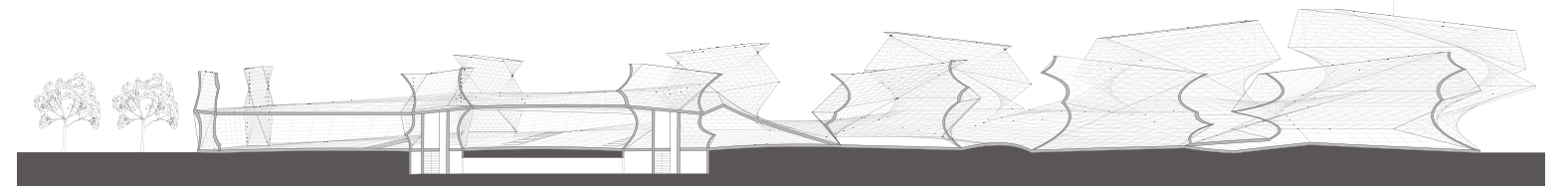


Entrance.

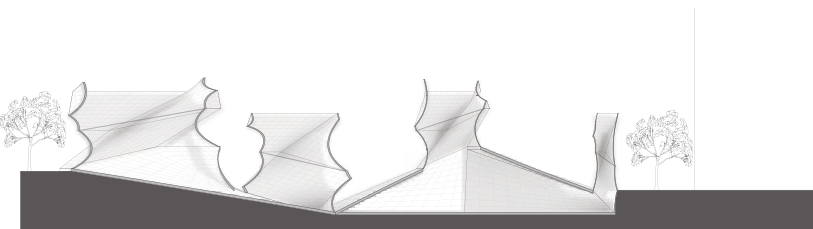
Rooftop landscape.



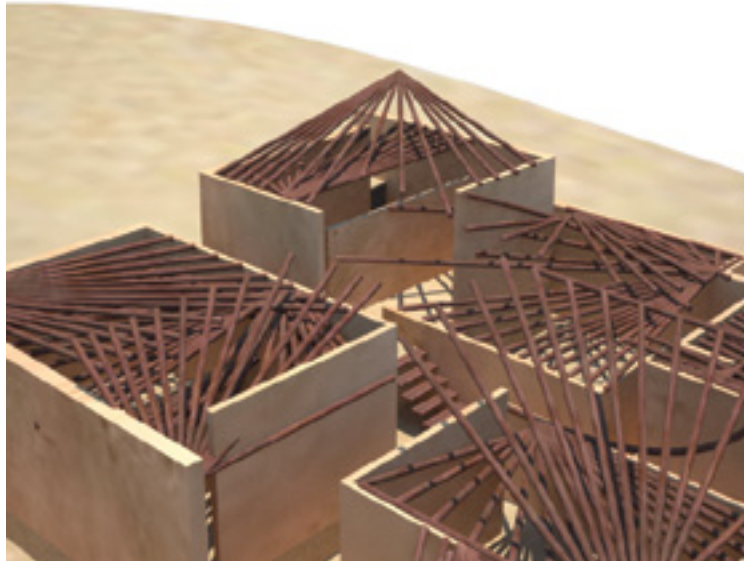
Latitudinal section.



Longitudinal section.



Latitudinal section.



Aerial view.

Site Lines and Ventilation ::
Natural Ventilation in Buildings
Spring 2009
Partner: Tiffany Pryce

The greatest focus of architectural design should be on the affects of the design on the people who will occupy the building. The relationship between architecture and the human body is both physical and psychological, with both imposing on each other resulting in a building with unique architectural expression while working practically for those who inhabit it.

Buildings that incorporate natural lighting, ventilation and clean water improve the quality of life of the people within it.



View from inside the clinic.

We seek new methods to incorporate light and air flow into spaces that retain privacy while maintaining an open feel that contributes to a positive mental state.

Through the use of materials, passive solar strategies and cross ventilation pattern, we want to open up buildings that are known to be very secluded and fragmented such as hospitals, clinics, schools and offices. Our aim is to create a prototype clinic that can be implemented by the UN in countries that lack many of the resources they desperately need.

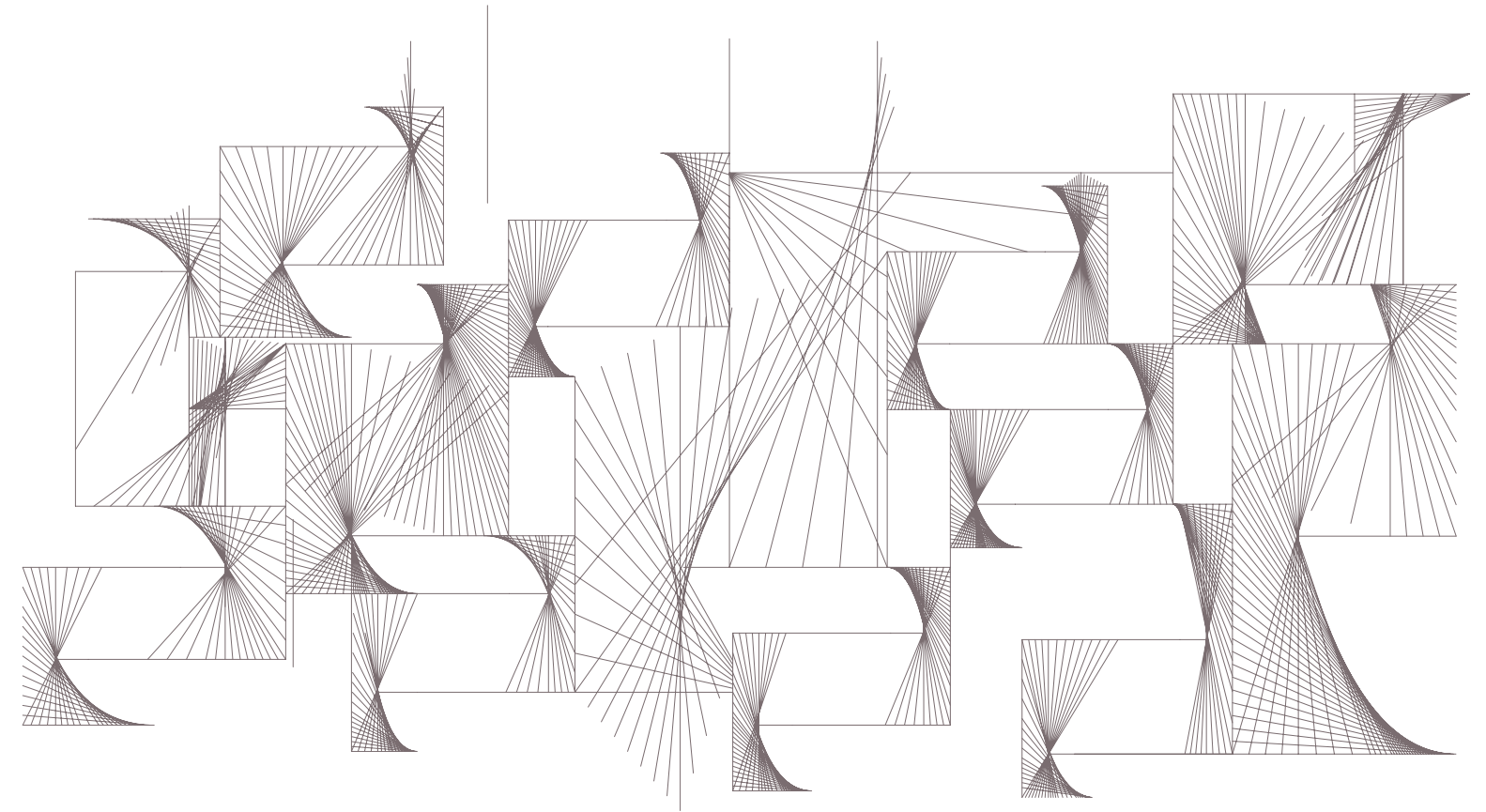
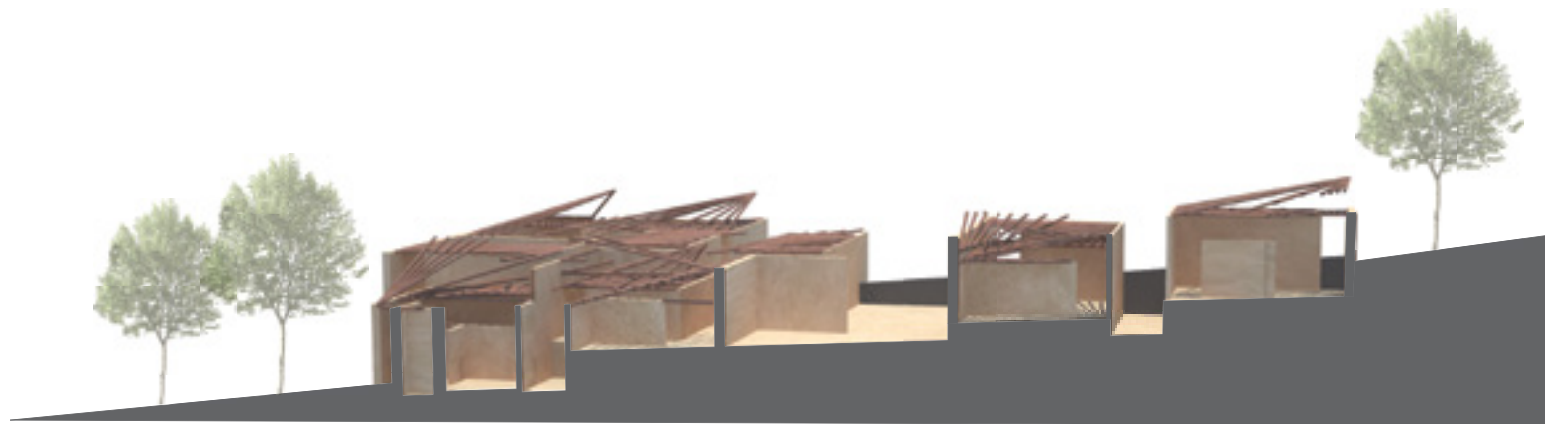


Diagram of site lines throughout the structure.



Sectional perspective.



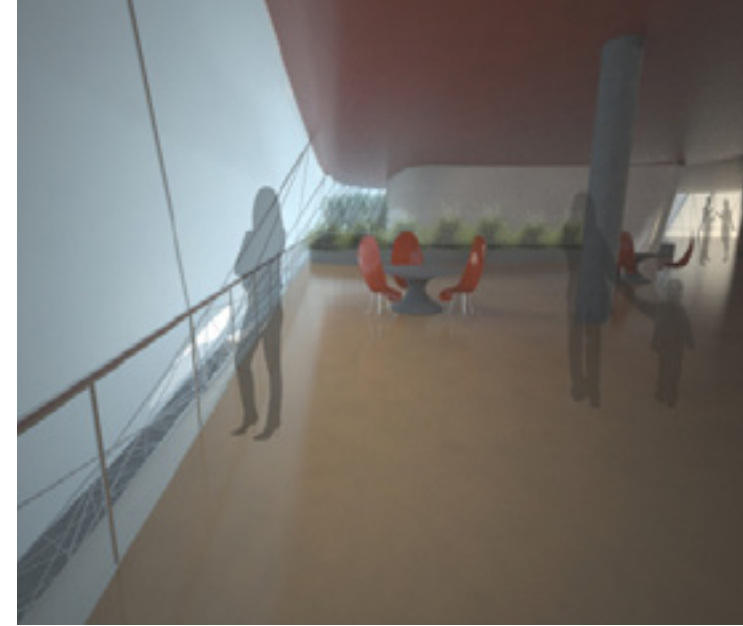
Opposite: Entrance to the clinic.



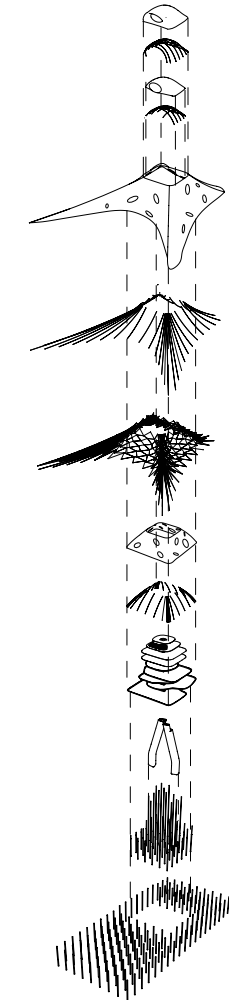
View from the "eye" looking out on Prague.



Balcony view.



Open top level.



Exploded axonometric.

Extrinsic Growth ::
Czech National Library
 Spring 2010

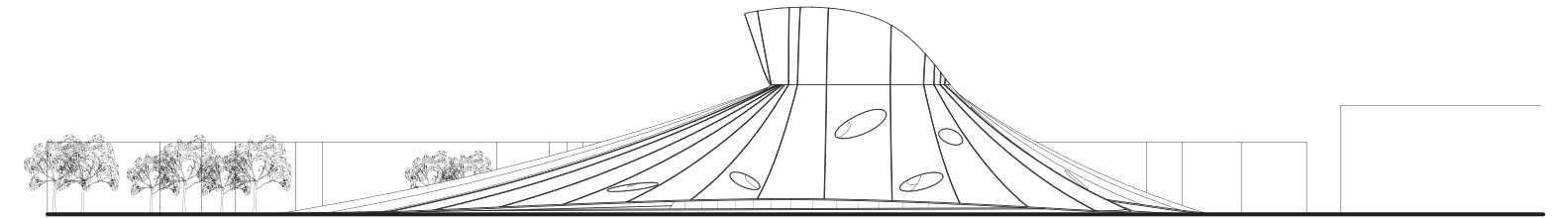
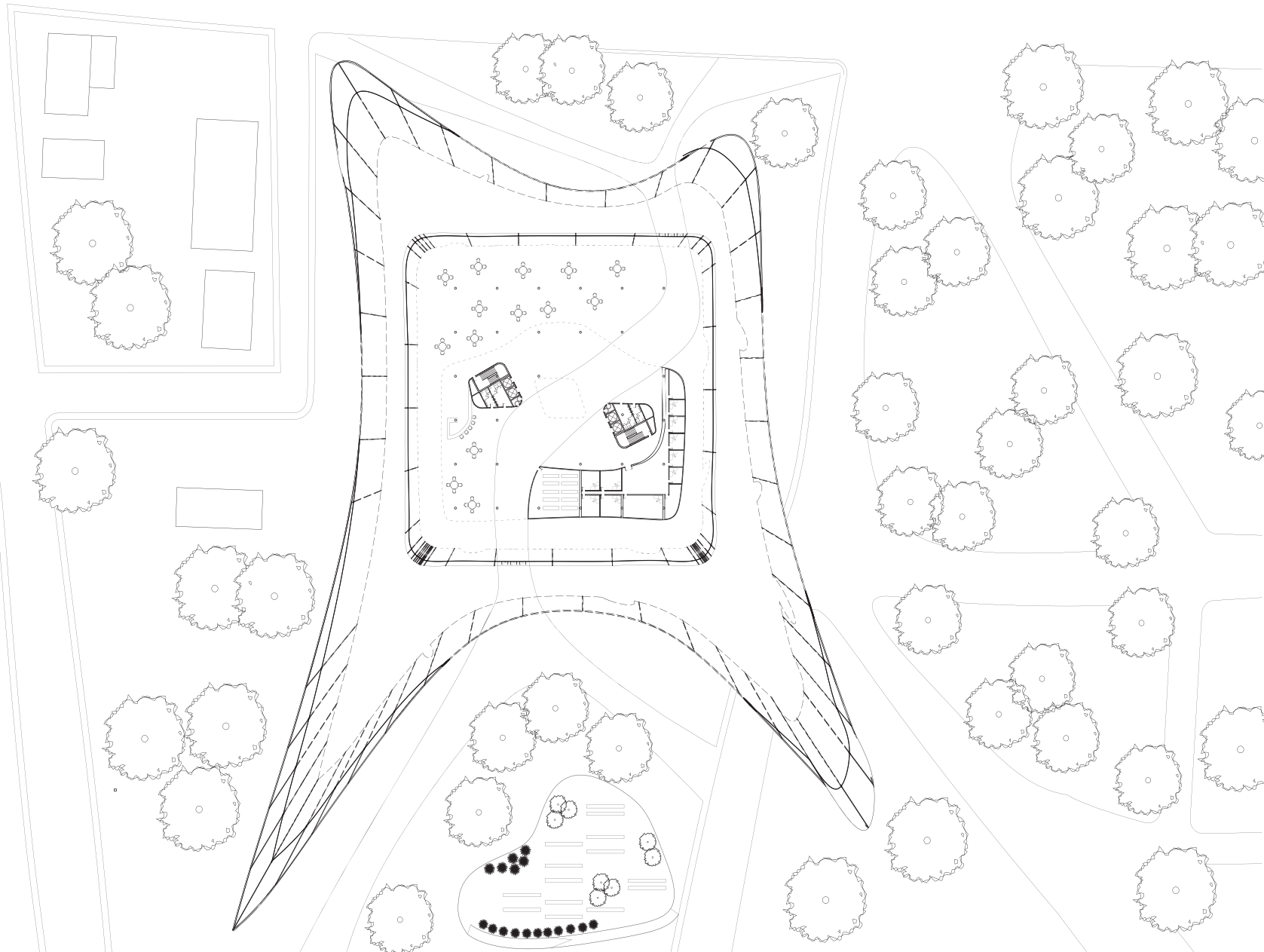
Partner: Christine Lois
 Schematic Design: Future Systems

The proposal for The New National Library of the Czech Republic encompasses not only the need for bridging the gap between the Baroque architecture of the surrounding city of Prague and the contemporary concept for what a library should be, but to create a form and function that is both alien and continuous with the context.

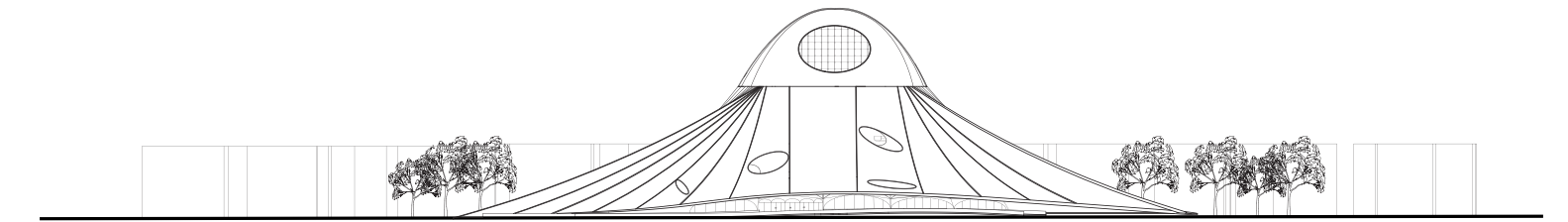
The contemporary notion of a library represents a space where intimate and social functions transcend one another in a cohesive interaction that allocates for both spectra of program to intermingle without disruption. These conditions should coexist without harm or compromise to the other. The seemingly extrinsic outer skin that engulfs the interior of the building is conceived by examining the site and introducing a form which is physically growing from both the ground and urban fabric as well as up above the existing local skyline. The form is maintained mathematically by expressing and understanding catenary shapes and their relation to compression and tension. The catenary structure is determined by a compromise between structural stability and the interstitial space it creates.

Voids penetrate the skin in order to create balconies which provide extended views into the surrounding cityscape. Staggered floor plates break up otherwise large spaces. Open atria explode into the "eye" and allow for visual association without mandating social interaction; intimate space must form through social function. The most interactive connection between the building and the site is the attempt to make the pedestrian access of the site contiguous throughout the building. This manifests itself in a tentacle-like structure that grows out of the form and into the streets of the city.

Within the context in which it exists, the library must possess a clear function. It should not take away from the fabric in which

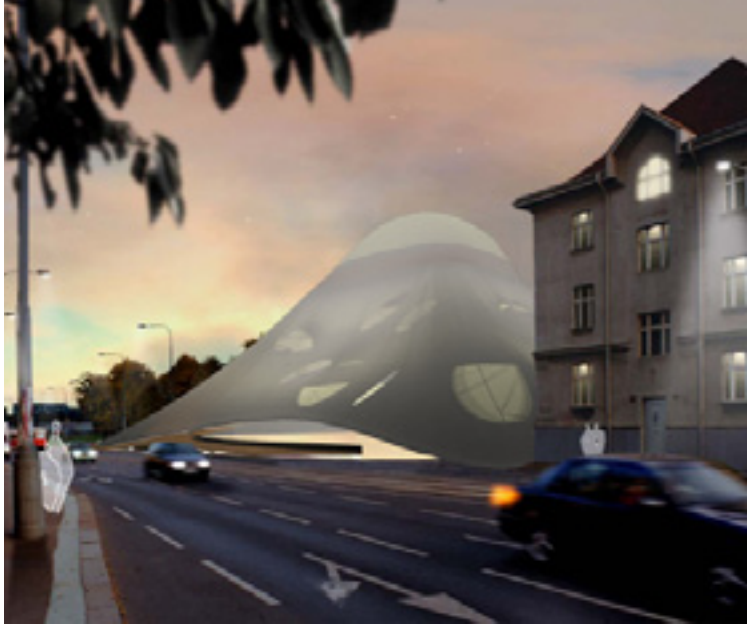


East elevation.



South elevation.

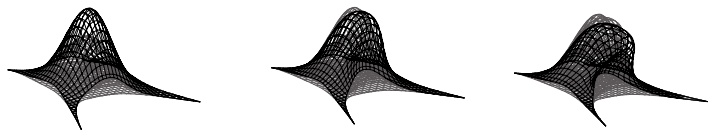
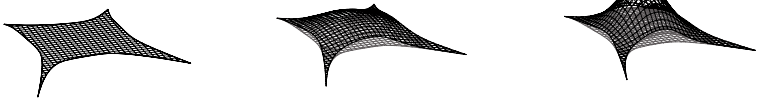
Opposite: Level 1



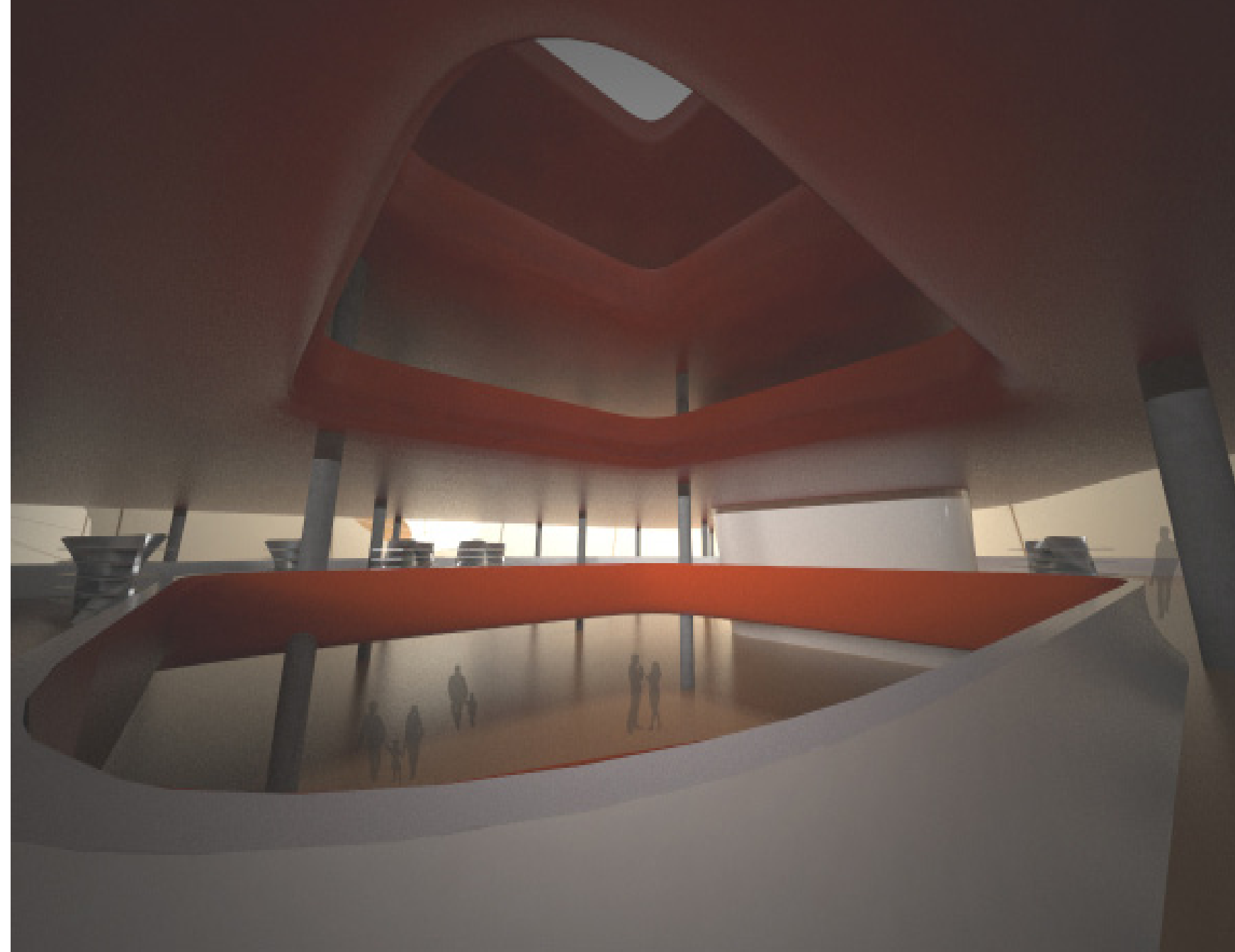
Night view from street.

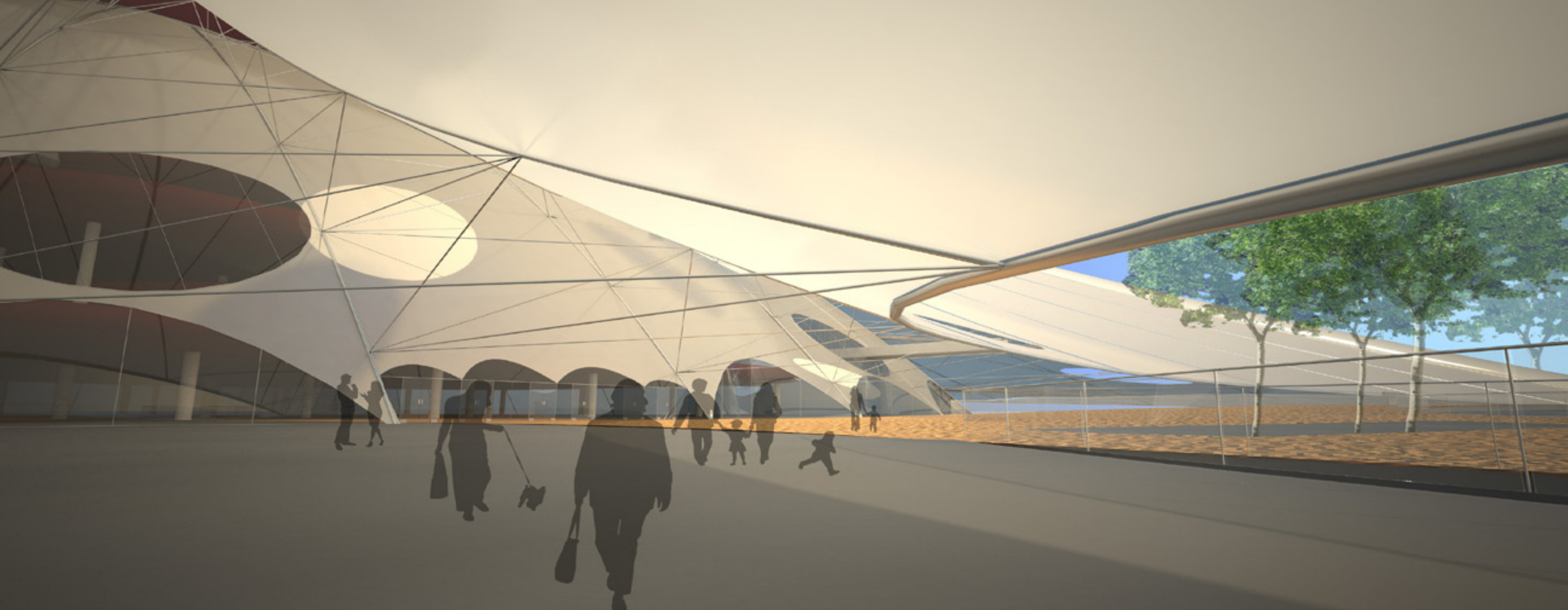


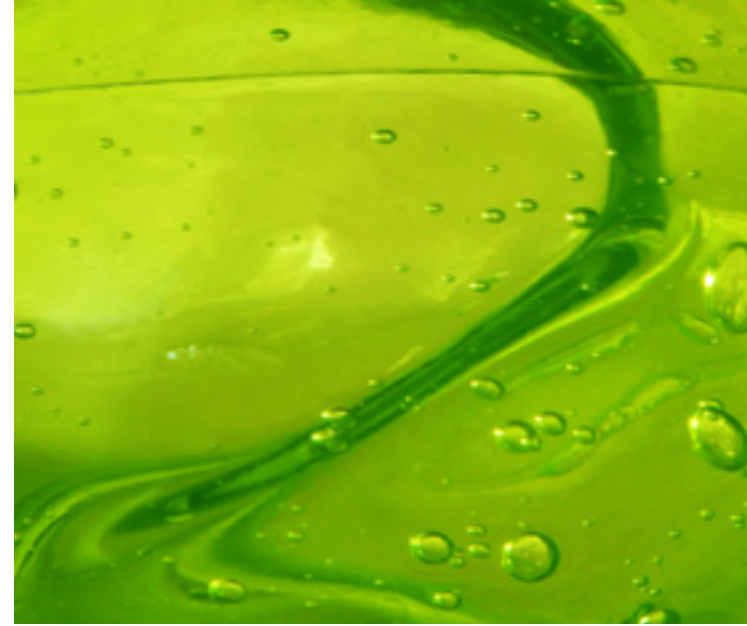
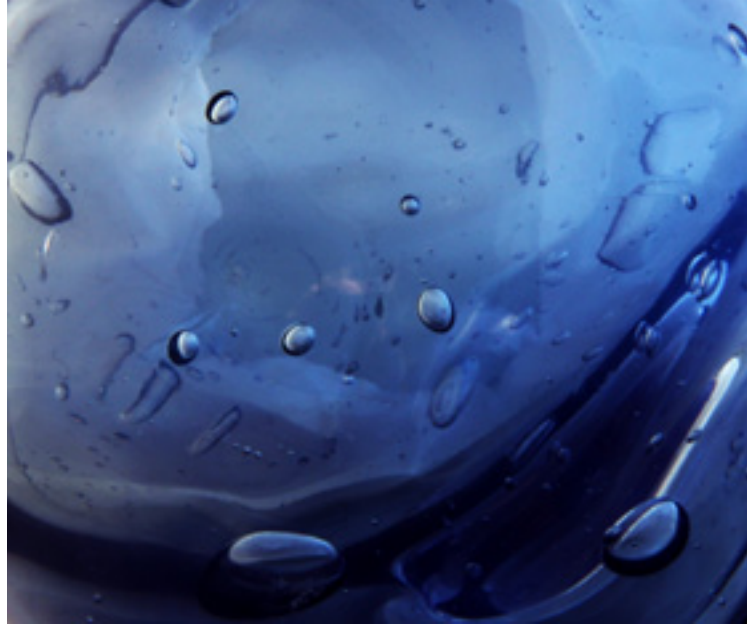
View in library courtyard.



Opposite: Looking up through the inner atrium.







Series of gelatin studies.

Life in Liquid ::
Aquatic Membrane as Habitat
 Thesis
 Fall 2010

Within the discourse of architecture there have been few attempts to expand past the confinement of earth's continental land mass and into other environments. While historically there exists proposals spanning from the marine cities of modernity to the underwater biospheres of present, designers have yet to plunge into the most challenging environment of all, liquid. One of the most notable materials to exist in liquid is the cell membrane, a substance that is inherently biological.

In order to create a liquid architecture, biological processes must be utilized. The ability for a biological process to develop in three dimensions only becomes possible with a weightless environment; liquid possesses the unique ability to simulate weightlessness on earth, facilitating a weightless architecture. In this case, liquid becomes a crucial factor in both the form and functionality of the system.

From humans' time in the womb, liquid aided buoyancy has allowed for the embryo to growth and self-structure in all dimensions. A return to this system enables an entirely new way of building; site becomes liquid, material becomes membrane, and humans breathe fluid as opposed to air. Through the use of these systems, an inhabitable liquid

membrane structure is feasible.

This thesis will examine the consequences and design possibilities that are propagated by the use of a liquid environment. The use of biological membrane processes in conjunction with an underwater site allow for an architecture distinguishable from traditional land design. With gravity and the consequences it brings absent from the environment, form takes on the potential of a new method of design.



