DESIGN PORTFOLIO

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METROPOLIS 2055

ARCHITECTURAL THESIS, 2015 - PRESENT

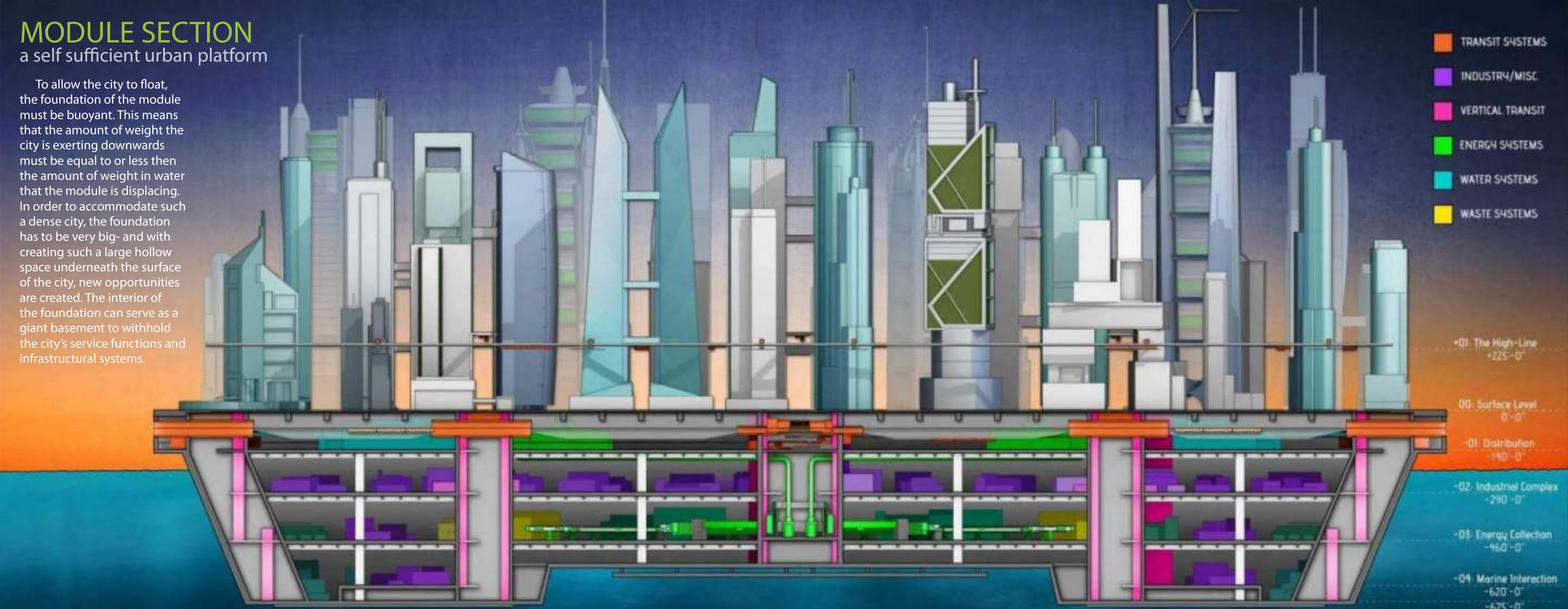
ENVISIONING TOMORROW'S CITY

A thesis narrating an ongoing vision for a city of the future that responds to the current and forthcoming complications of the urban environment to create a new metropolis that strives to be more efficient, sustainable, and environmentally responsible then the contemporary city. Over time as individual modules come together to form one unified highly functioning metropolis, the city becomes an organic being with a life of its own: A mobile realm full of green, sustainable urban life in constant physical and technological communication with nearby cities through aquatic transportation.

MODULE SECTION

a self sufficient urban platform

To allow the city to float, the foundation of the module must be buoyant. This means that the amount of weight the city is exerting downwards must be equal to or less then the amount of weight in water that the module is displacing. In order to accommodate such a dense city, the foundation has to be very big- and with creating such a large hollow space underneath the surface of the city, new opportunities are created. The interior of the foundation can serve as a giant basement to withhold the city's service functions and infrastructural systems.



MODULE SYSTEMS

waste management
-waste to energy incineration facility

primary transit station
-pedestrian transit stations for inter-modular travel.

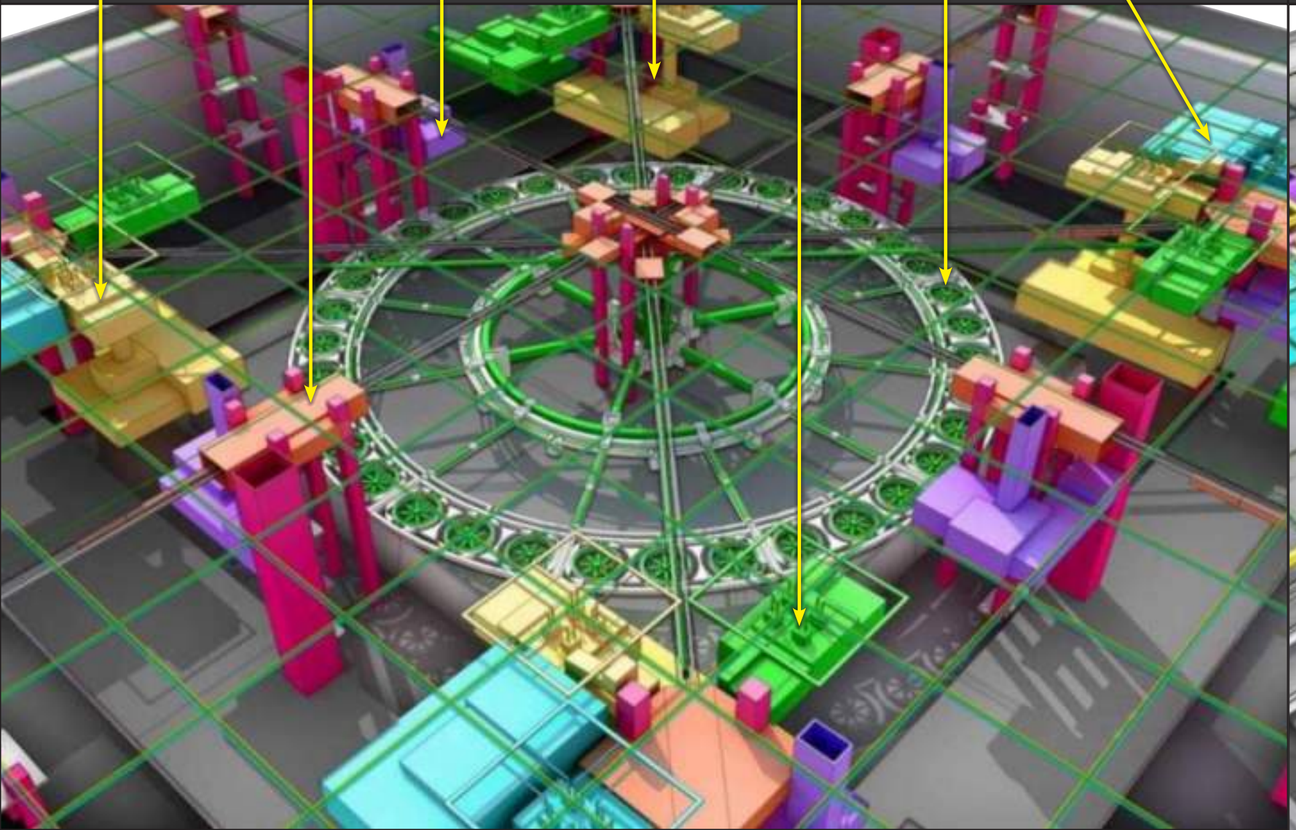
industrial transport hub
-vertical transit for large industrial material

distribution/collection grid
-energy, water, and sewage maintenance lines

energy management
-quadrant energy storage and distribution

energy production hub
-plug-in renewable collection and storage complex

water treatment/storage
-desalination plant and storage facility



SECTIONAL BREAKDOWN

sub-surface structure
-secondary structural support for module

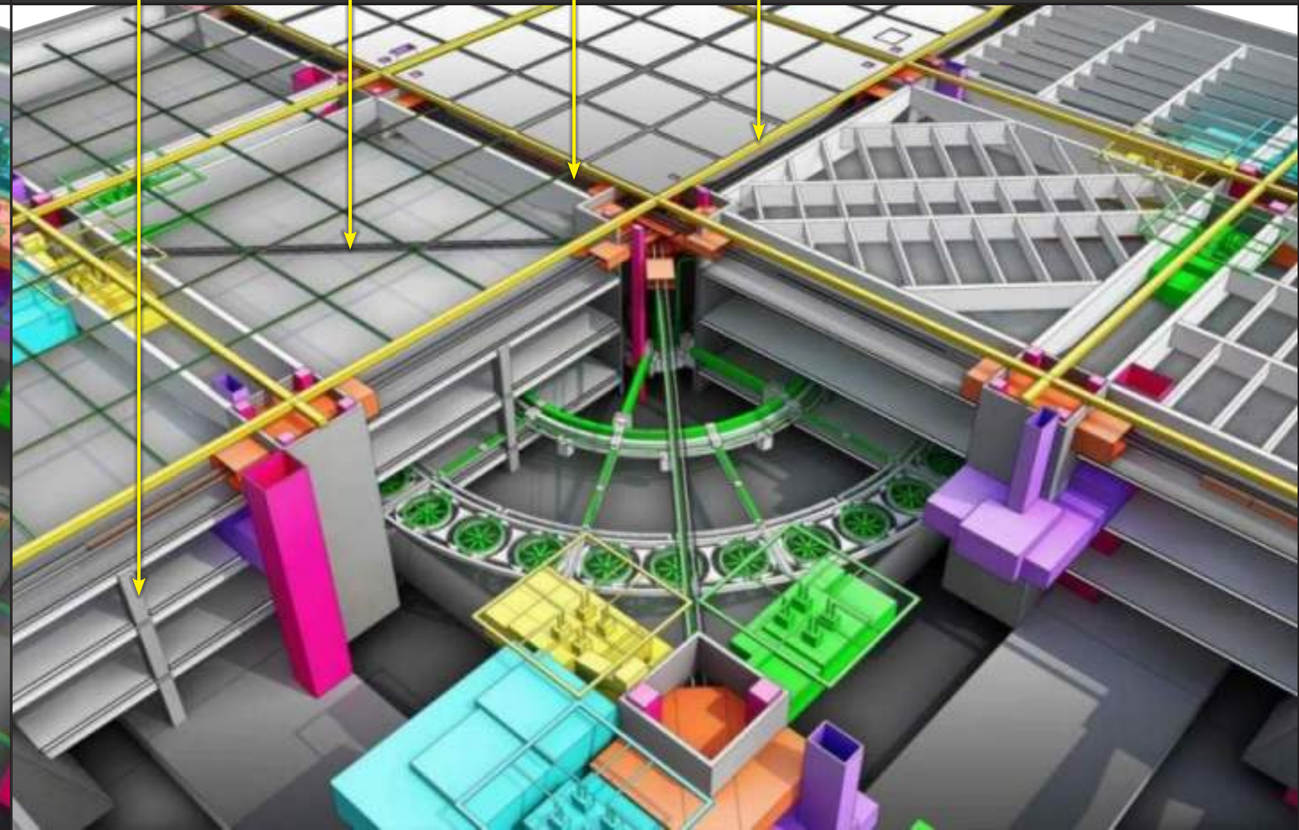
diagonal transit
-pedestrian and industrial transit for inter-modular travel

orthogonal transit

secondary transit
-above surface pedestrian transit - vertical location and system type to be determined by module planners

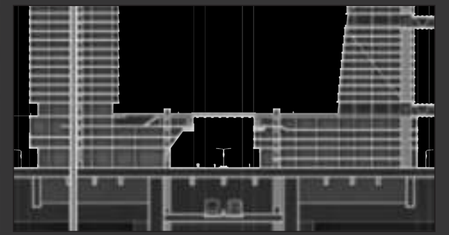
surface subdivision
x4 -parcel
x4 -sub-sector
x4 -sector
x4 -quadrant
x4 -module

Sub-Surface Levels
00. surface
-01. transit/distribution
-02. industrial complex
-03. energy collection
-04. marine interaction



Central Pedestrian Streets

The planning of the parcels enclosing central pedestrian streets are a direct response to the infrastructure that runs through them. They utilize the underground structure for systematic connections, provide vertical mobility with sub-surface levels, and accommodate both primary and secondary transit systems in an efficient and flexible manner. Because these streets are the spines of infrastructure, a series of parameters is established to create a sense of hierarchy among neighboring circulation paths in which a greater demand for a "public street" is required.



The Platform

The creation of the platform level is a vital part of the public essence of the 'central street'. First, it pushes the towers off of the street which frees up a significantly greater amount of room for natural light to reach the ground level - creating streets that are full of life and nature rather then covered in shadow. It also establishes new ground for urban interaction: a second level of continuous intimate spaces set aside from the street and interlinked by bridges and vertical connections. The platform level allows people to exist in the densest parts of the urban environment while avoiding the hectic rush of the pedestrian boulevard but still being fully aware of its presence. It's Manhattan on the surface and Paris on the platform. This second level would consist of a series of gardens, cafe spaces, restaurants, and additional retail spaces, creating a second public lobby elevated off the surface for every structure. It also creates a programmatic division of spaces within the building - Encouraging mixed-use buildings to accommodate retail, office, and residential spaces, with a built-in transition between each programmatic function.

The Permanent Edge

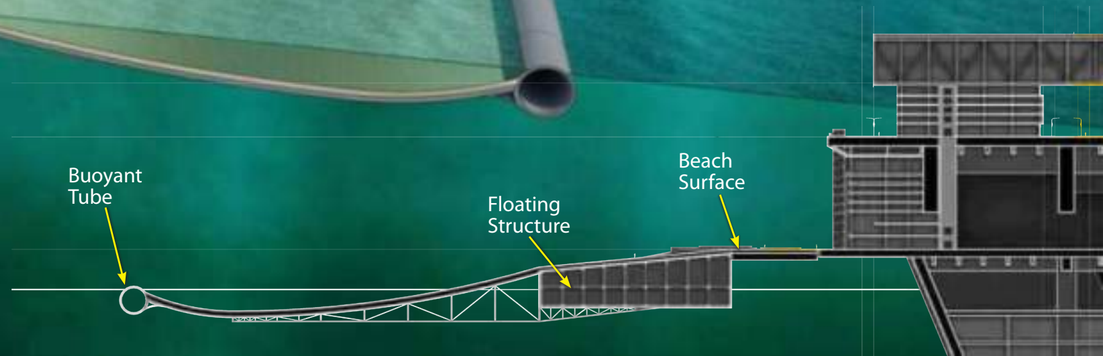
The idea of a city that expands in every direction has to have some limitations. As modules are completed there will always be a time-frame in which edges of the unit have no connecting module, and in most cases the waterfront property will soon regularize as an incoming module attaches. Despite that, eventually the need for a permanent city edge must be established- waterfront property that will always stay waterfront property no matter how many modules join the city. This scenario explores the permanent edge condition. Because the surface is so high off the water, the module establishes 3 different primary levels: the surface, the upper platform, and the beach. It utilizes a separate component that attaches onto the edge of the module to create a second surface just above water-level for nature and urban life with an artificial beach that allows residents to experience a typical beach-like condition even if they are swimming in water thousands of feet deep.

The Beach

The surface level parcels would be addressed as beach front property and accommodate program from all sectors, although residential life and retail spaces would primarily fill the area due to its prime location on the water. After the parcels end there is a buffer between the curb line and the physical edge of the module that would be filled with green spaces. A series of elevators would exist along the edge line transporting people from the surface to the beach level. In between those levels, several floors of commercial and retail space would exist that share a more intimate connection with the beach.

The Street

By creating a series of modular parts that come together to form a detachable surface, a new opportunity is created for human interaction - one with a more physical relationship to the water. This new ground could serve a variety of different programmatic functions, but in this scenario, an artificial beach is created.



ISTANBUL INTERVENTION

SPECIAL TOPICS STUDIO, WELDON D. PRIES

SITE: FATIH, ISTANBUL, TURKEY

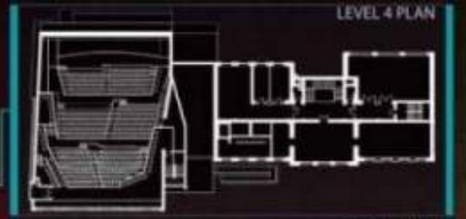
This intervention exists right in the heart of Fatih, Istanbul where it attempts to engage Valen's Aqueduct to bring a new form of contemporary functionality to an ancient monument that has since lost its purpose. By establishing new ground for functional program on all 3 levels of the aqueduct, it can be utilized like never before. Meanwhile the building itself encompasses the structure and showcases it.

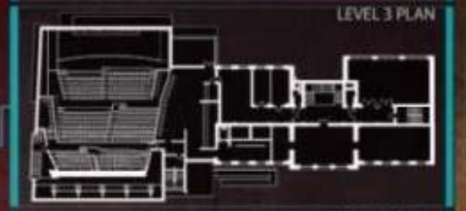
HAUS AM KLIESTPARK MUSIC SCHOOL

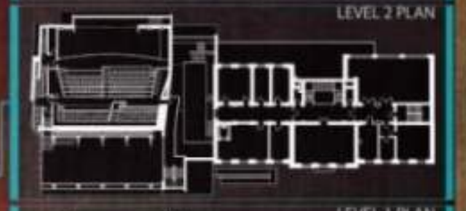
COMPREHENSIVE DESIGN STUDIO, ROLF BACKMANN

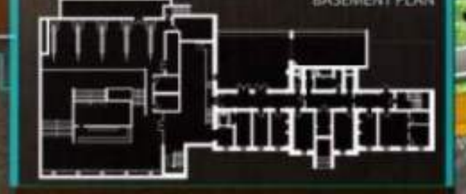
SITE: GRNEWALDSTRASSE, BERLIN, GERMANY

The Haus Am Kliestpark Music School extension utilizes a sectional parti in which the mid-level sloped surface dictates the program, provides the structure, and assists the mechanical systems. The upper space withholds a music hall dedicated to the performing arts of the students while the lower consists of a public gathering space for the community.









INTERDISCIPLINARY OUTPOST

SITE & LANDSCAPE STUDIO, CAROL BURNS

SITE: GENERIC WOODLAND, WESTERN MA

The Interdisciplinary Outpost project aims to create a work/display space for the International Cartography Association of America. The site started as an idealized plot of woodland with a 1:12 slope that would become extracted into individual segments of rise and run which separated the different spaces in both section and plan. The program contains a studio space, gallery room, outdoor display space, and a kitchen/break room for the employees.

THE URBAN PLAYGROUND

International Cartographic Association Headquarters

SITE & LANDSCAPE STUDIO, CAROL BURNS

SITE: MAGAZINE BEACH, CAMBRIDGE, MA

Attached to the BU bridge on the far side of Magazine Beach, the headquarters for the International Cartography Association attempts to bring an urban atmosphere to the park while maintaining a purposeful dialogue with the bridge.

The building uses a combination of different parts that vary in scale to simulate the feeling of a skyline and to appear more urban. On the exterior it is visualized as multiple buildings that are separate, but from the interior they are in sync to create a linear progression of spaces from one side to the other.

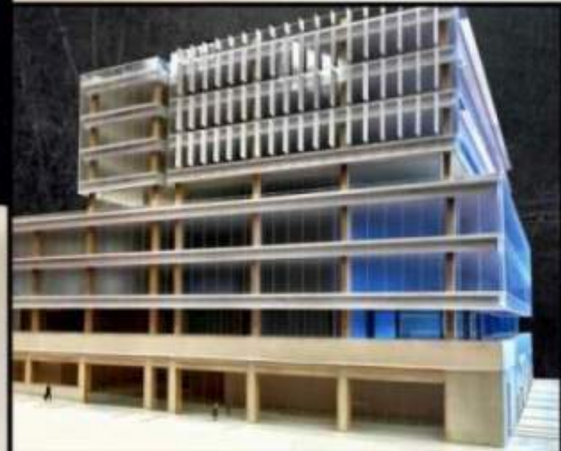
ONE SEAPORT SQUARE

Professional Work: KLINGSTUBBINS

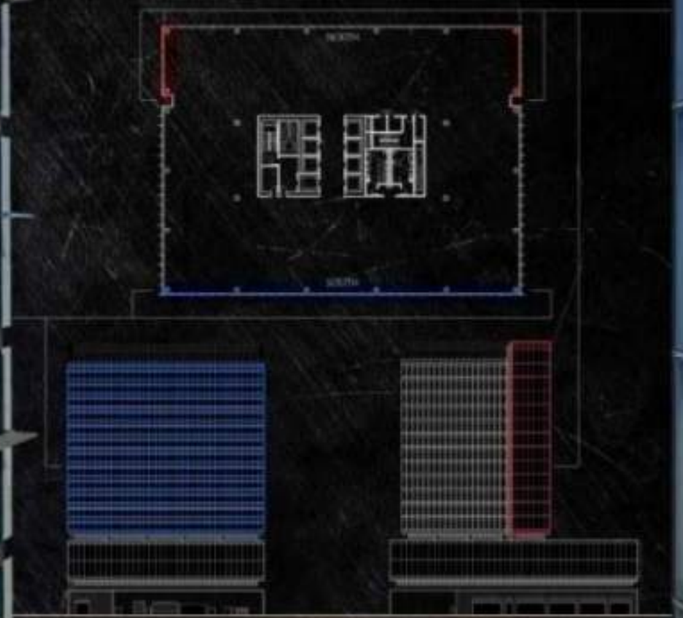
SITE: BOSTON, MA

One Seaport Square is an 18-story mixed use building located in the heart of the Seaport district in Boston. The images on this page display the 1/8"-1' scale model I built of the first 8 floors of the structure. The bottom floors are reserved for retail and parking, leaving the rest available for office space.

Although the model was constructed by me, the design work is reflective of the employees of KlingStubbins/Jacobs.



One Seaport Square uses a variety of curtain walls specific to each facade to accommodate solar gain. The Southern facade uses a horizontal sunshade system and a shadow box to defer the mid-day summer sun while allowing it to penetrate during the winter. The east and West facades use both Curtain wall types 1 & 2. In the second Type (not shown), Vertical Sunshades are used to Block direct sunlight from entering the southern east and west sides of the building. The other sections of the East and West Facades along with the Northern facade Use curtain wall type 01, where head to toe glass allows maximum views to the exterior.



CURTAIN WALL TYPE 03
SOUTHERN FACADE

CURTAIN WALL TYPE 01
EAST & WEST FACADES

NAIOP SENIOR LIVING

The Future of Senior Living Competition

Professional Work: MEYER DESIGN

SITE: PHILADELPHIA, PA

A competition entry done for Meyer Design representing our vision for the future of senior living. For this project I was handed a program and a loose guideline of existing conditions- the design and render of the space is a result of my involvement in the process. We received first place in the competition, although the project is hypothetical and will not be built.

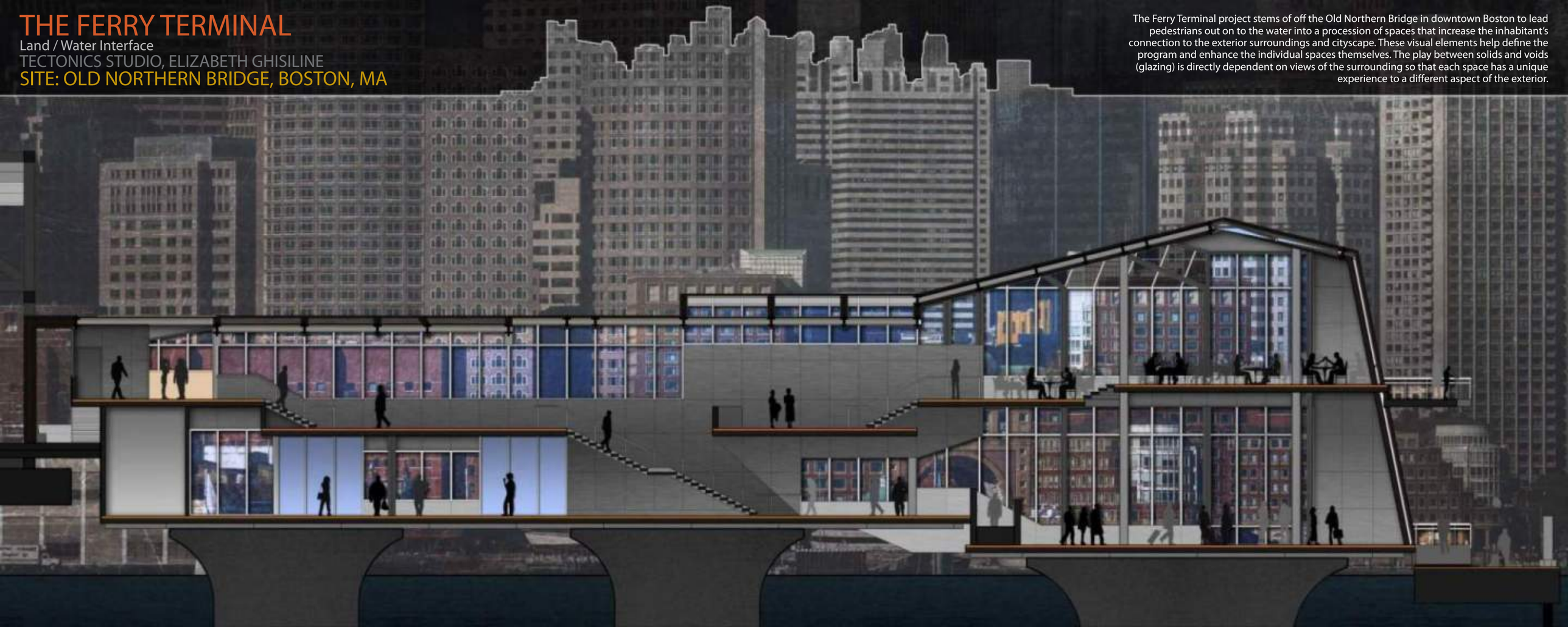
THE FERRY TERMINAL

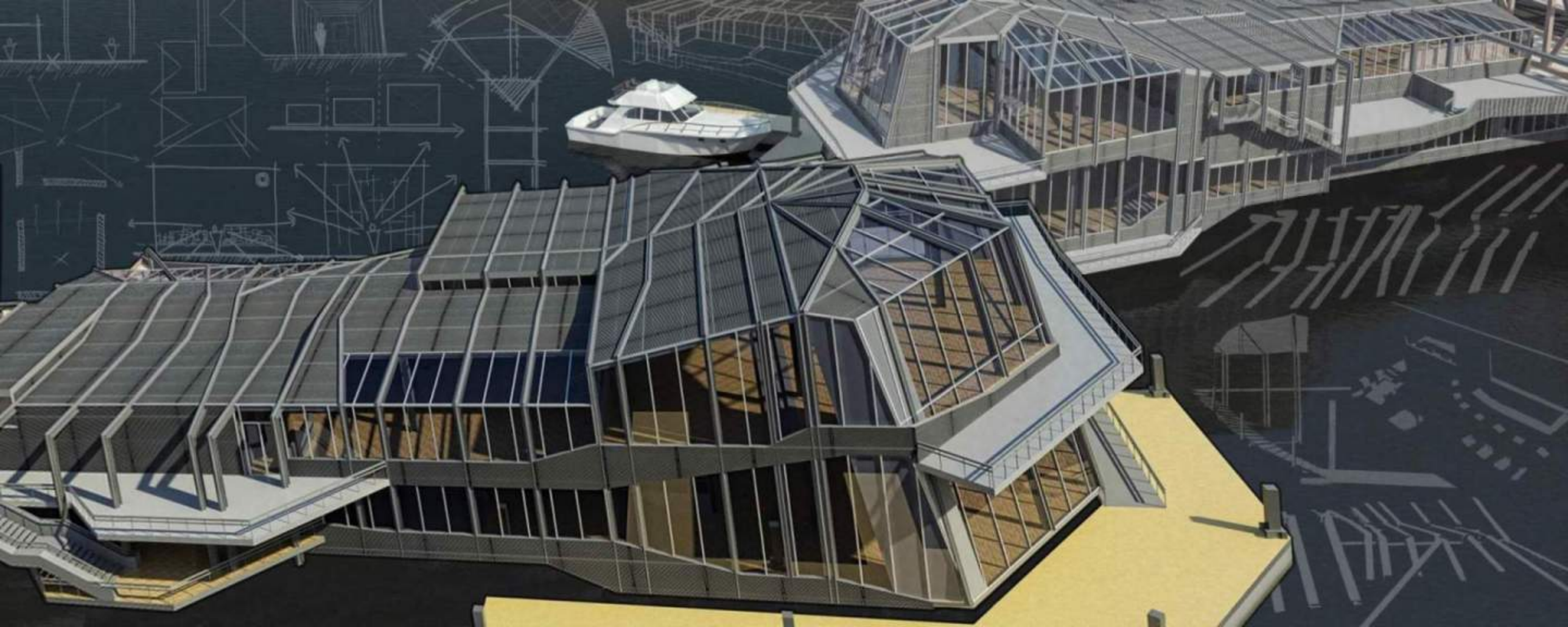
Land / Water Interface

TECTONICS STUDIO, ELIZABETH GHISILINE

SITE: OLD NORTHERN BRIDGE, BOSTON, MA

The Ferry Terminal project stems of off the Old Northern Bridge in downtown Boston to lead pedestrians out on to the water into a procession of spaces that increase the inhabitant's connection to the exterior surroundings and cityscape. These visual elements help define the program and enhance the individual spaces themselves. The play between solids and voids (glazing) is directly dependent on views of the surrounding so that each space has a unique experience to a different aspect of the exterior.





Level 1

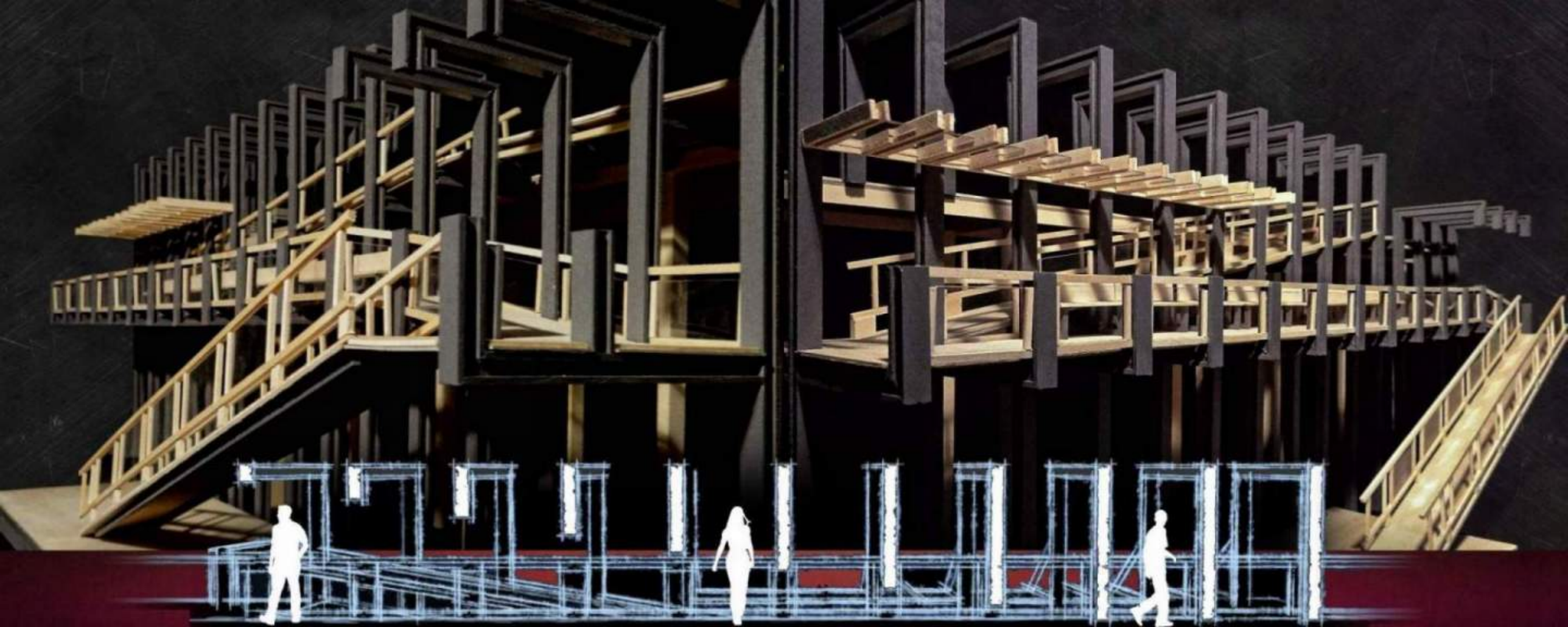
Level 2

THE WATER TAXI STATION

TECTONICS STUDIO, ELIZABETH GHISILINE

SITE: CHILDREN'S MUSEUM, BOSTON, MA

Located off the boardwalk outside of the Children's Museum in East Boston, The water Taxi station is an intervention from land to water that creates a downward procession from the boardwalk Level to adjacent spaces below that introduce an intimate connection to the water and city. The steel ribs adjust subtly from one to the next to accommodate and produce flooring, railing, seating, and overhead protection. The structure not only serves as an aesthetic, but is functional too.



ISABELLA STEWART GARDNER MODEL

MATERIALS AND METHODS, PATRICIA KENDALL

PRECEDENT STUDY: SKIN & STRUCTURE

In April, a trio of rising junior architecture students were given the opportunity to display their course work in the world-famous Isabella Stewart Gardner museum. The project? The Isabella Stewart Gardner museum, on a much smaller scale.

As part of an arduous project spent researching and recreating unique building facades for two architecture classes, Materials and Methods II and Design and Technology II Sophomore Studio, the students created a scale-model of the museum, right down to the insulation in the walls. The project is meant to help the students understand the relationship between the facade— the "skin" of a building—and the support structure of a building.

Tyler Kreshover, BSA '14, and his classmates, Evan Cox, BSA '14, and Patrick Boyle, BSA '14, began their journey toward a temporary spot in the museum while exploring that vital relationship between facade and structure. They were taking measurements on-site when an interested employee mentioned how exciting it would be for their model to be featured in the museum. This was all the motivation Kreshover and his classmates needed.

"Having your work featured in a world-famous museum is an indescribable honor," says Kreshover. But getting to that point was often tough and tedious—long hours spent experimenting with colors, days spent building model parts, and repeated measurements of every inch of the building.

But now, after all the hard work, Kreshover and his classmates have achieved something few people do in their lifetimes, much less before their junior year of college. "What's so rewarding about architecture is that …we spend so much more time working on stuff, and in the end you have so much to show for it," he said.

Jamie Kelly, The Wentworth News Blog