

MATTHEW J LUSK

ARCHITECTURAL DESIGN PORTFOLIO
ACADEMIC WORK

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A 237-Acre Landscape Master Plan for a post-industrial urban island.



Academy of Music
Morristown, NJ

Bachelor of Architecture Thesis [June 2020]
Project Duration: 30 Weeks
Thesis Advisor: Joanne Aitken, FAIA
2020 Michael Pearson Prize Finalist



restore the role of music as a primary form of education



establish a place that expands creative opportunities & gets people excited about music



connect the community by means of music & architecture

The Academy of Music is a place to **Learn, Create, & Perform** - a regional acoustic destination where music education, creativity, and the performing arts bring unity to a community. A year-long thesis endeavor, this project is a filter for sound - creating an increased awareness of the sonic environment. In result, its architecture elevates Music Education from supplement importance to primary.

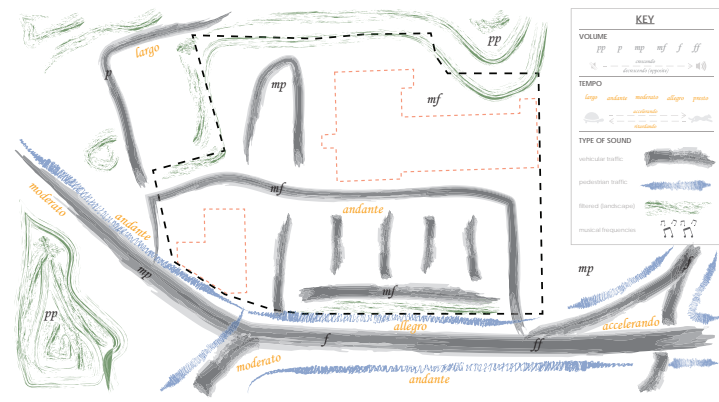
An acoustically-charged public park meets the streetscape on this 4-acre urban site in Morristown, NJ, where interstitial space creates moments for the unique and distinct sonic perception of its urban fabric. Hardscape materials & vegetation, along with acoustic interventions placed throughout the landscape, reflect and filter the sound of a busy vehicular thoroughfare. The site geometry and building organization enliven & expand a busy pedestrian realm, while unwanted noise such as building services and vehicular parking are moved below grade. Among the landscape architecture program is found an amphitheater, 'whispering waterfalls', 'melodic marimbas', 'echo underpasses', a 'cricket retreat', a 'clamorous campfire', and horn-shaped sound-enhancing slides, to name a few.

A civic institution, the facility's architecture is composed of three buildings, all of which are open to local creative professionals (and those aspiring) - to Learn, Create, & Perform in a unique setting. Each standalone building contains its respective pieces of this tripartite program. Classrooms and lab spaces anchor the Academy's more traditional **Learn** components, while recording studios, ensemble rehearsal rooms, instrument lesson rooms, sonic research spaces, and audio-visual integration suites are among the more inventive and improvisational pieces of the **Create** program. Three acoustically-distinct performing arts theaters are held within the **Perform** building, where an instrument retail shop and street-facing public cafe accommodate the pedestrian realm and retain civic engagement.

On the building exterior, three distinct materials highlight the programmatic use of space on the interior: corten steel panels that articulate acoustically-distinct interior volumes; LED-backlit frosted channel glass that wraps semi-private spaces like a theater curtain, and transparent vision glass that directs specific views to the exterior from interior public space.



Aerial from SW



Existing Site Sonic Diagram



SW Entry Plaza



Proposed Site Sonic Diagram



SITE PLAN | SCALE: 1" = 60'

- 1. ENTRY PLAZA
- 2. STACCATO BRIDGE
- 3. WHISPERING WATERFALLS
- 4. SPLASH FOUNTAINS
- 5. MORRIS PARK
- 6. MELODIC MARIMBAS
- 7. RASPY RETREAT
- 8. SILENT SWALE
- 9. ECHO UNDERPASS
- 10. CLAMOROUS CAMPFIRE
- 11. CRICKET RETREAT
- 12. AMPHITHEATER
- 13. PRE-FUNCTION PLAZA
- 14. REFLECTION POND



Amphitheater



Pre-Function Plaza



Aerial from NE



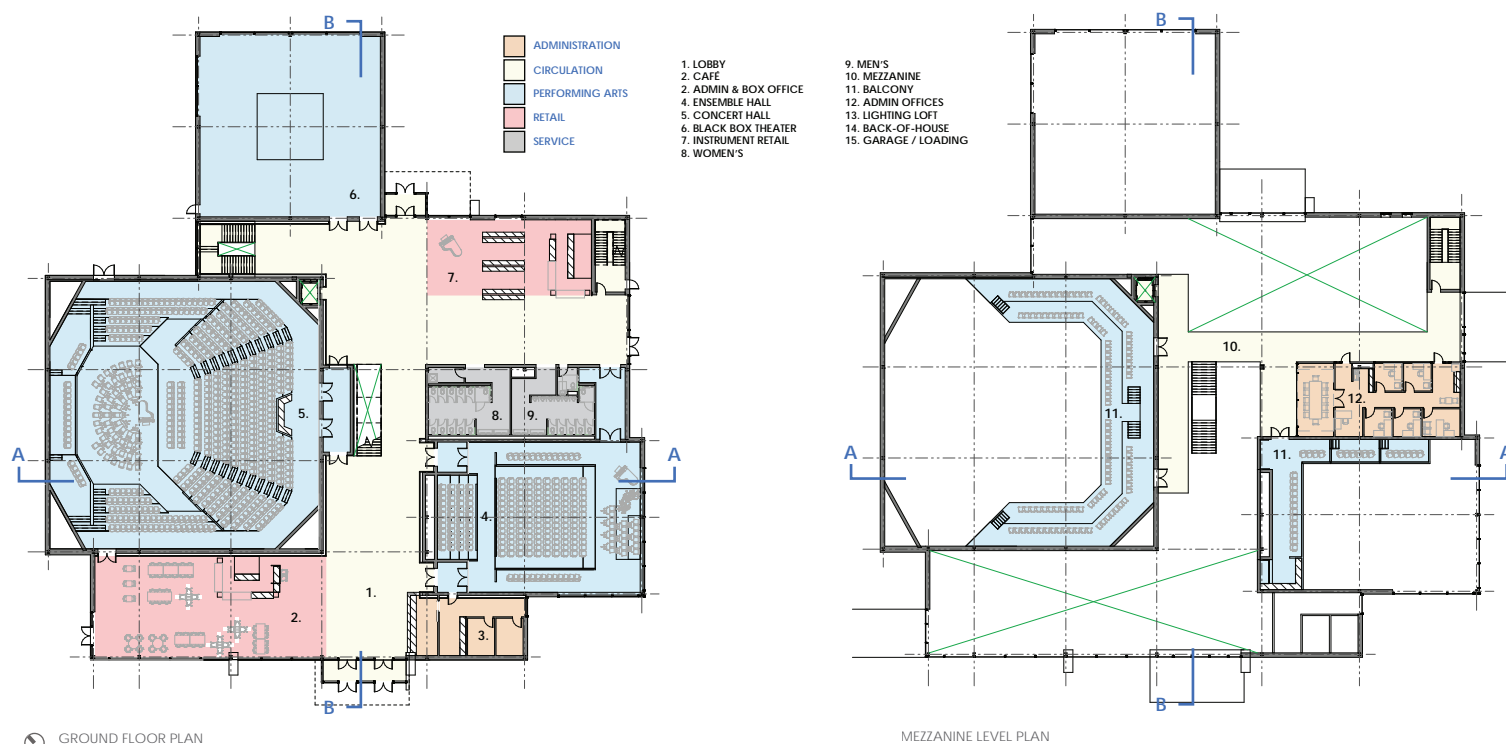
Rear Entrance, Black Box Theater, & Instrument Retail



View of Atrium from Front Entrance



Front Entrance & Cafe



GROUND FLOOR PLAN

MEZZANINE LEVEL PLAN

BUILDING GSF: 62,279



Zugale Ensemble Hall



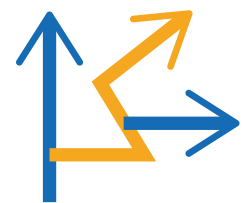
Parente-Rosin Concert Hall





Innovate. Elevate. Explore. Inspire
Philadelphia, PA

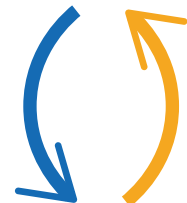
Project Team: Sam Curran & Joe DiGrazio
Studio 6-2 & 6-3 [Comprehensive Design Studio]
Project Duration: 20 Weeks
Instructor: Tom Kirchner, RA



EXPLORE



TEST



DEVELOP



LAUNCH

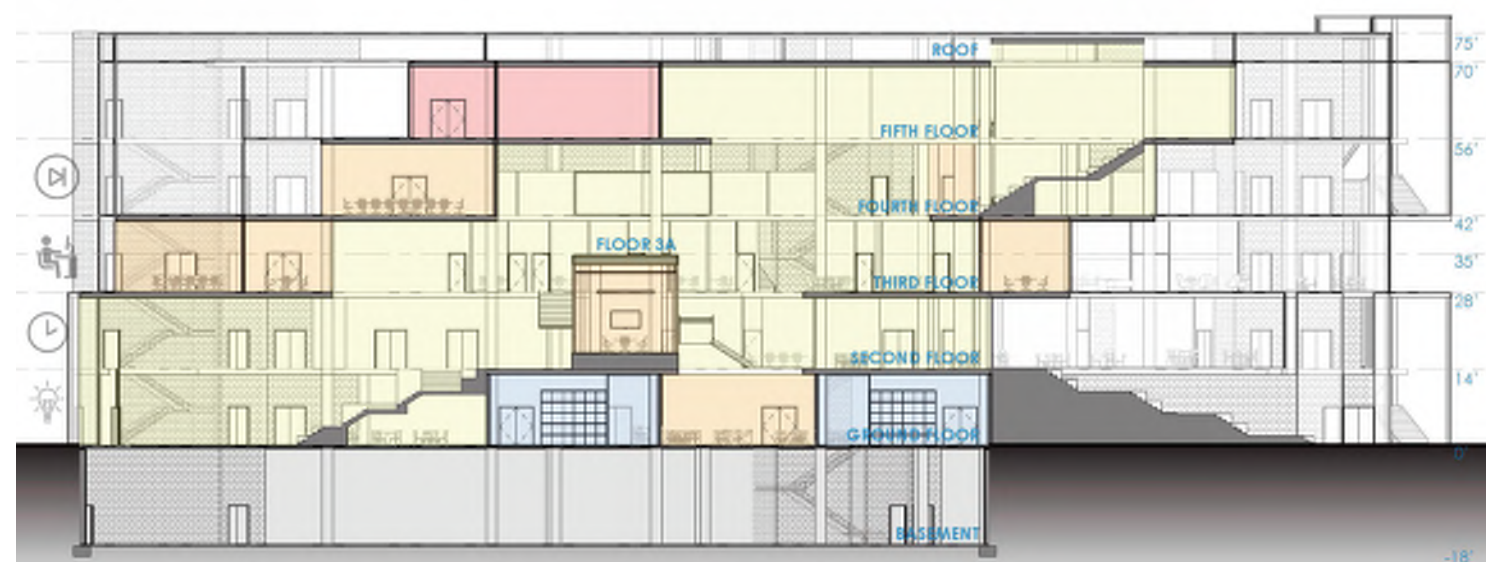
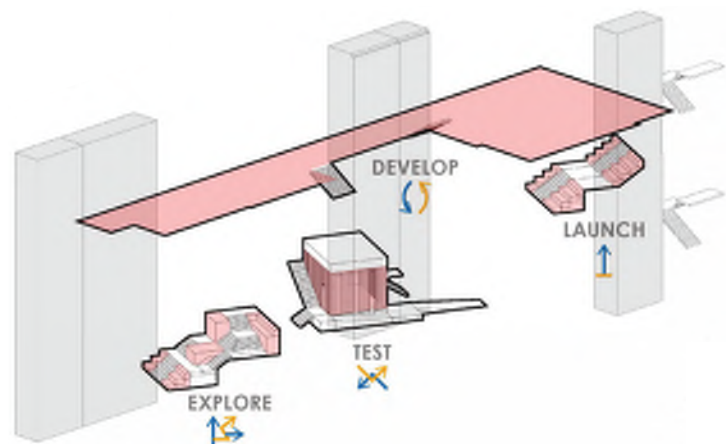
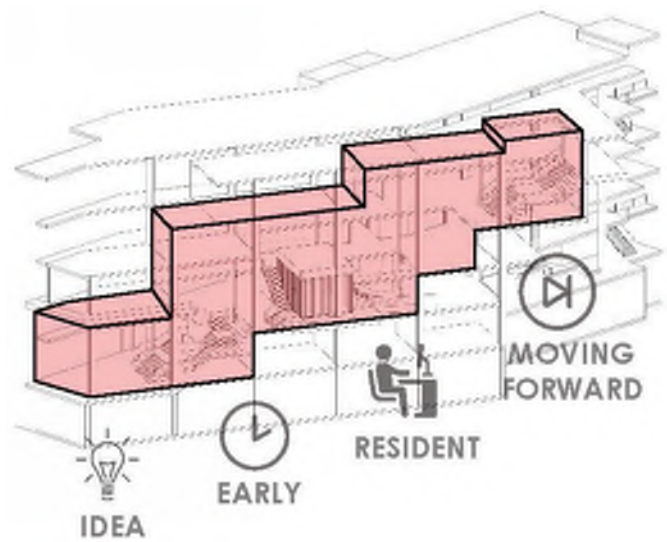
In our efforts to meet the spatial and experiential needs of Drexel's entrepreneurship program, our proposal for Drexel's new 85,400 SF School of Innovation is one that enhances the creative journey of innovation and supports the primary objectives and stages of the program. Our design aims to **elevate** the entrepreneur and idea to success, instilling a sense of **exploration** and **inspiration** into the entrepreneur that will launch them into the stages of invention beyond academia. We believe there is a cycle created when an exposure to ideas leads to production of innovative results, thereby leading to further exposure to ideas and so on.

The spatial and academic journey of the student-entrepreneur is designed to align with the program objectives, utilizing a series of interior stair 'moments' that represent the various transitional phases an entrepreneur must face in their navigation of the challenging journey of innovation development. We have defined these transitions in that journey as: **Explore, Test, Develop, & Launch**.

Since each internal stair signifies a change in the innovation journey,

these stair landings (or floors, in our case) each represent a specific 'stage' of innovation: **Idea, Early, Resident, & Moving Forward**. The spaces designed around these concepts augment and support each stage, while the stairs stitch the stages together vertically.

The decision to implement a somewhat industrial aesthetic pays homage to the innovative history of the 'production space,' which in many cases typically feature exposed structural and building systems. The decision to expose our concrete structural system on both the interior and exterior is deliberate, and it can be finished in a way that meets the experiential needs of our intended design concept and affect. By minimizing the amount of various structural components down to one single, monolithic material, there becomes less visual 'noise' for the user to interact with, creating more space for users to experience a journey of exploration & inspiration. Glazing is used extensively in both the interior and exterior scopes, and pairs with a unique design of precast concrete panels on the exterior to anchor the building to its context in a unique way.



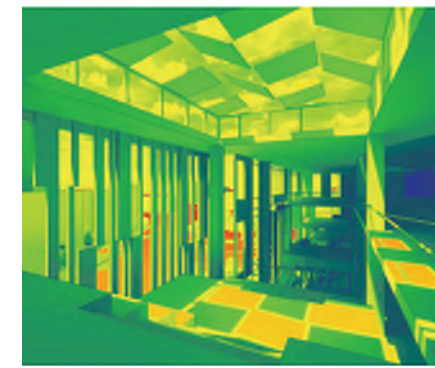
Concept Diagrams

Longitudinal Section

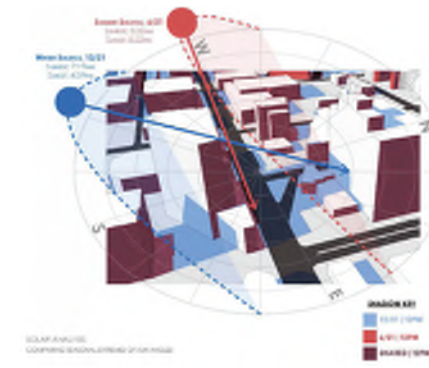




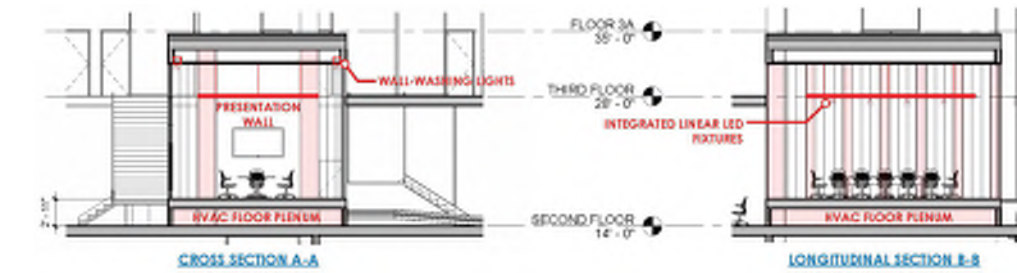
Second Floor Plan



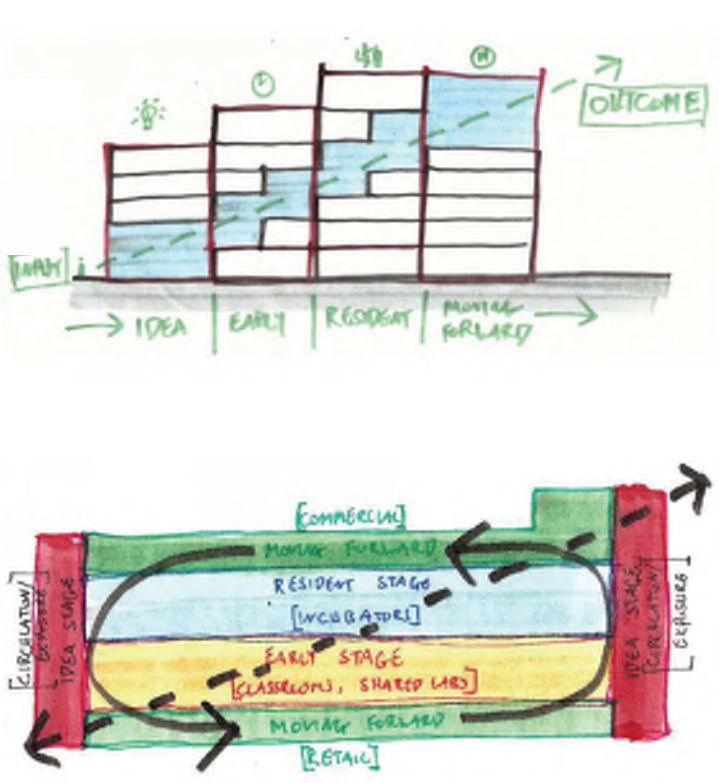
Daylighting Studies



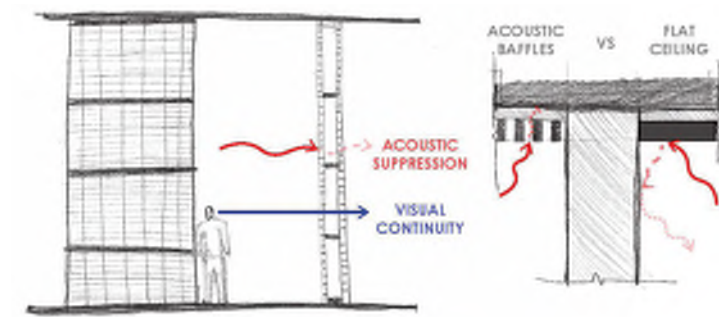
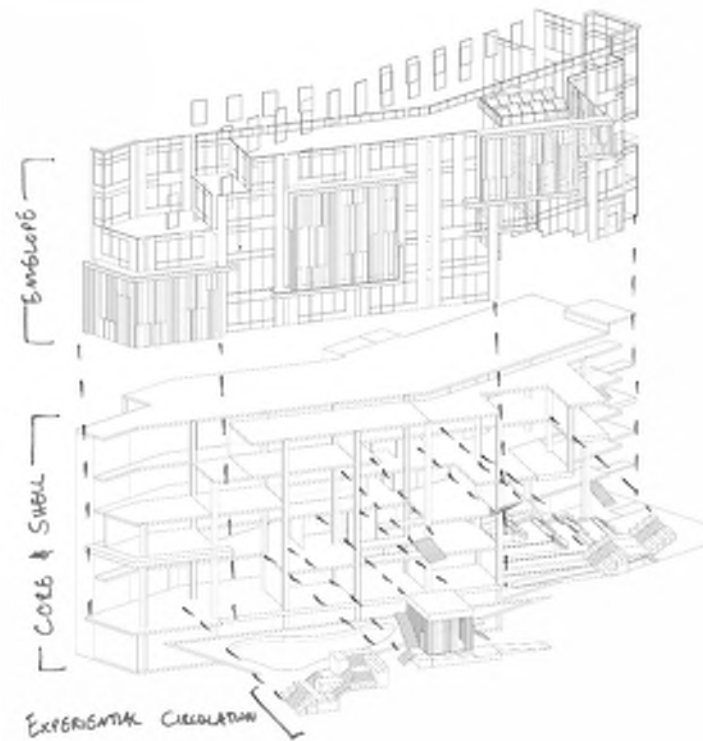
Envelope Thermal Analysis [Curran]



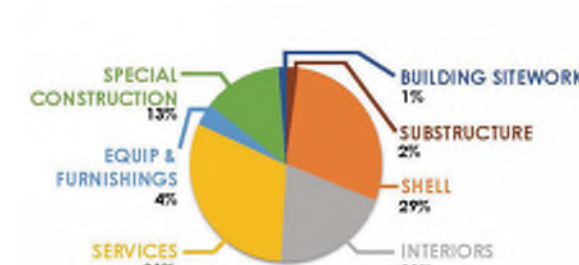
Interior Design



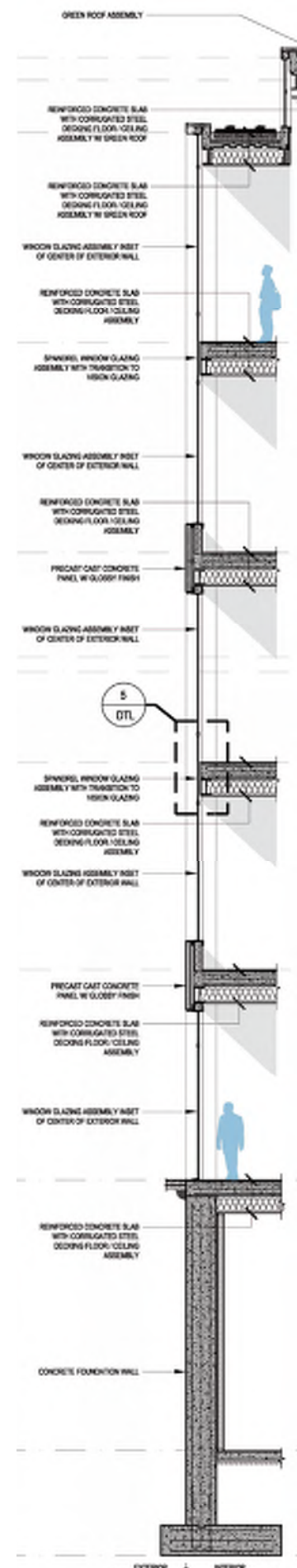
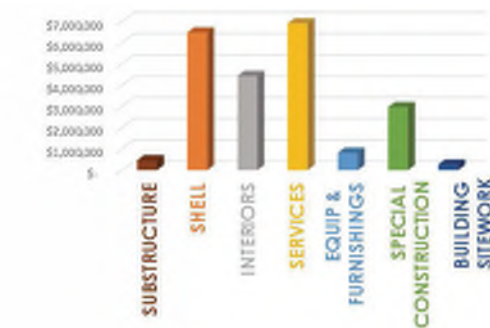
Concept Diagrams



Acoustical Solutions



Cost Analysis

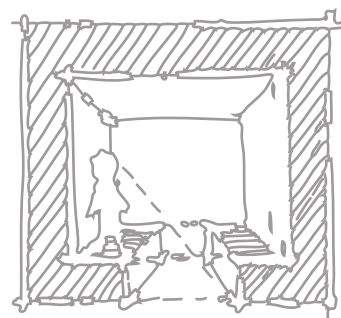


Envelope Detail [DiGrazio]

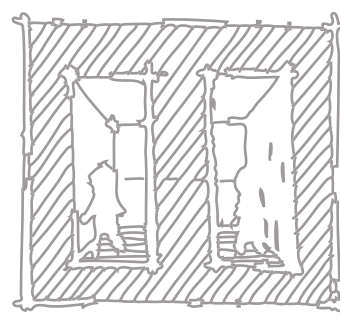


re-Imagining the Athenaeum of Philadelphia Philadelphia, PA

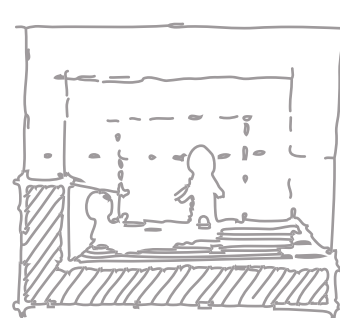
Project Team: Krishnah Aquitania & Sean Suter
Studio 6-1 [Comprehensive Design Studio]
Project Duration: 10 Weeks
Instructor: Daniel H. Chung, PE, RA



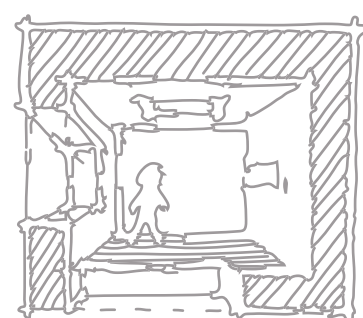
ABSENCE



OBSTRUCTION



EXPOSURE



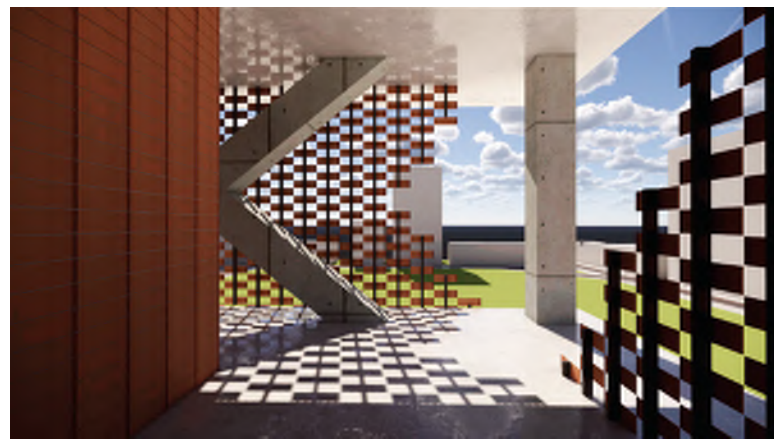
INCONSISTENCY

The Athenaeum of Philadelphia is home to an extensive collection of local historic and cultural artifacts, manuscripts, architectural drawings, and photographs. In honor of its 200th anniversary celebration in 2014, the Athenaeum sponsored a conceptual architectural competition for which designers were asked to imagine the Athenaeum of the future. Our task was to assemble a design development proposal based on one of the competition submissions - one that would enhance its original design concept as perceived by our team. Our proposal, which modified the original as to meet local zoning, building code, and thermal envelope regulations, builds upon the perceived **instability** of the proposal, in which architectural moments of **absence, obstruction, exposure, and inconsistency** were employed to further underscore this design concept.

The new 92,500 SF Athenaeum's exposed two-way flat plate concrete structural system features moments of visual absence and inconsistency on the exterior, enhancing the feeling of its structural instability both inside and out. The building envelope is comprised of a significant percentage of storefront glazing at 32.8%, and is complemented

with a floating terra cotta rainscreen facade system, through which sunlight and shadow enhance the visual exposure and obstruction of the exterior site, while maintaining a sufficient thermal rating with regards to the building's overall balance point temperature. Our team's design development proposal included studies illustrating our remedy of the original proposal's applicable zoning & building code regulations [including egress], programming revisions, a preliminary cost analysis paired with proposals for significant initial cost reduction, and building envelope design details & thermal calculations.

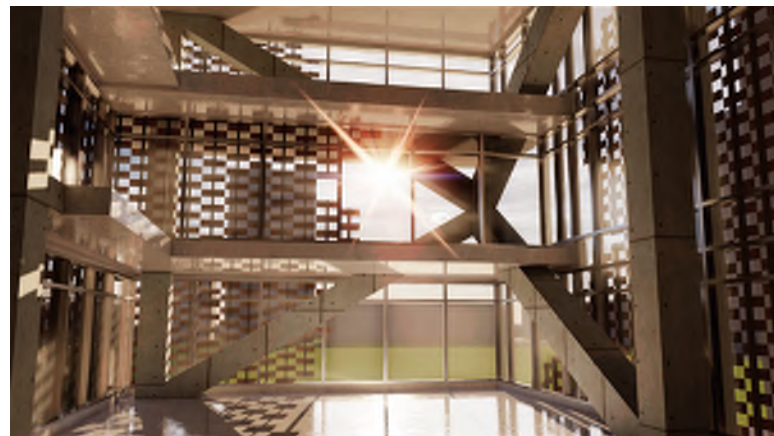
One enters the Athenaeum over a turning bridge, where the absent grade beneath seems to give way to the shifting mass of the building above. A wide stair leads users to the three-story great room, a reading space exposed to the exterior [and to itself], below several floors holding the architectural collections. The exposed concrete structural system appears inconsistent, where vertical and tapered columns seem to be in competition to carry the loads of the cantilevering building massing. The building envelope, in conjunction with massing & structure, seems obstructed in some areas, despite its great internal exposure.



Absence of Interior Space



Obstruction / Revelation of Views



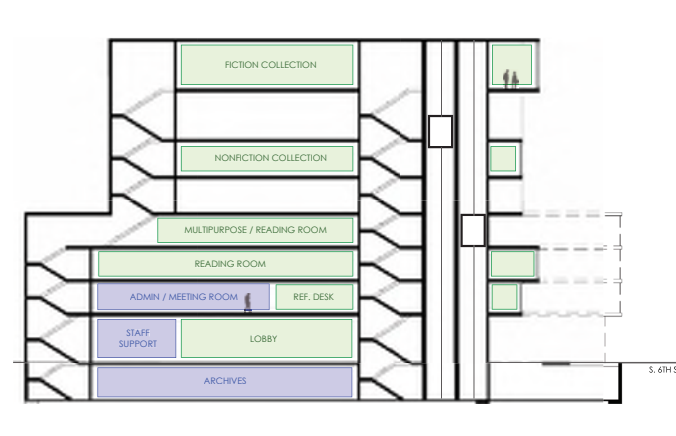
Exposure to Exterior, of Structure



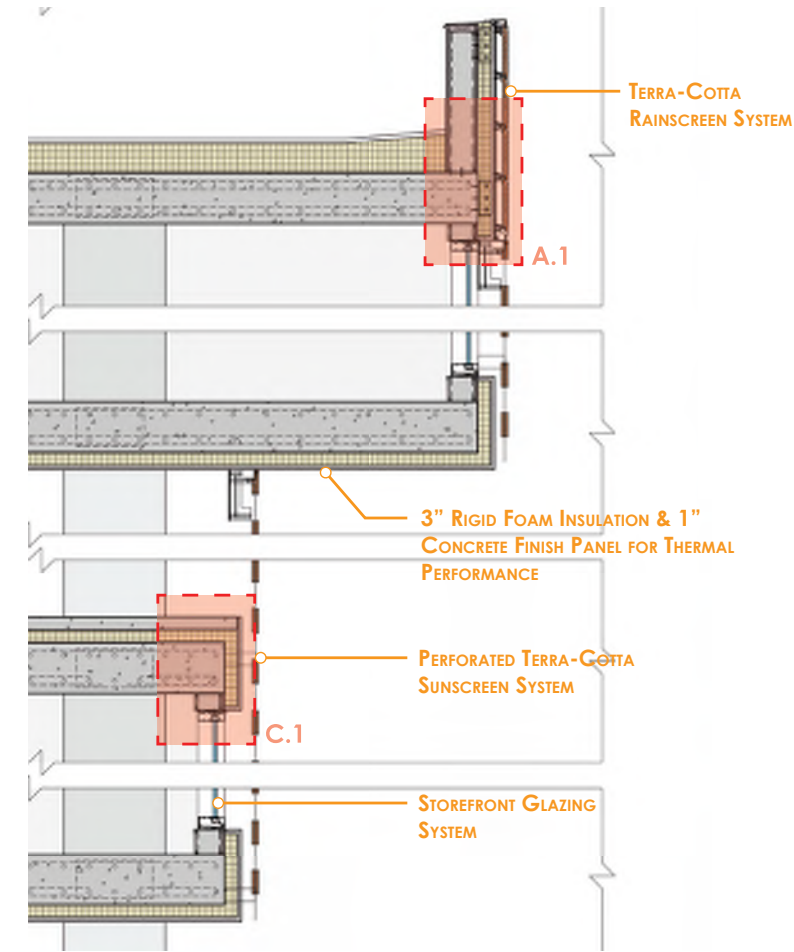
Inconsistency in Depth of Screen, Glazing, & Massing



First & Seventh Floor Plans [Suter]



Longitudinal Section [Suter]



Envelope Details

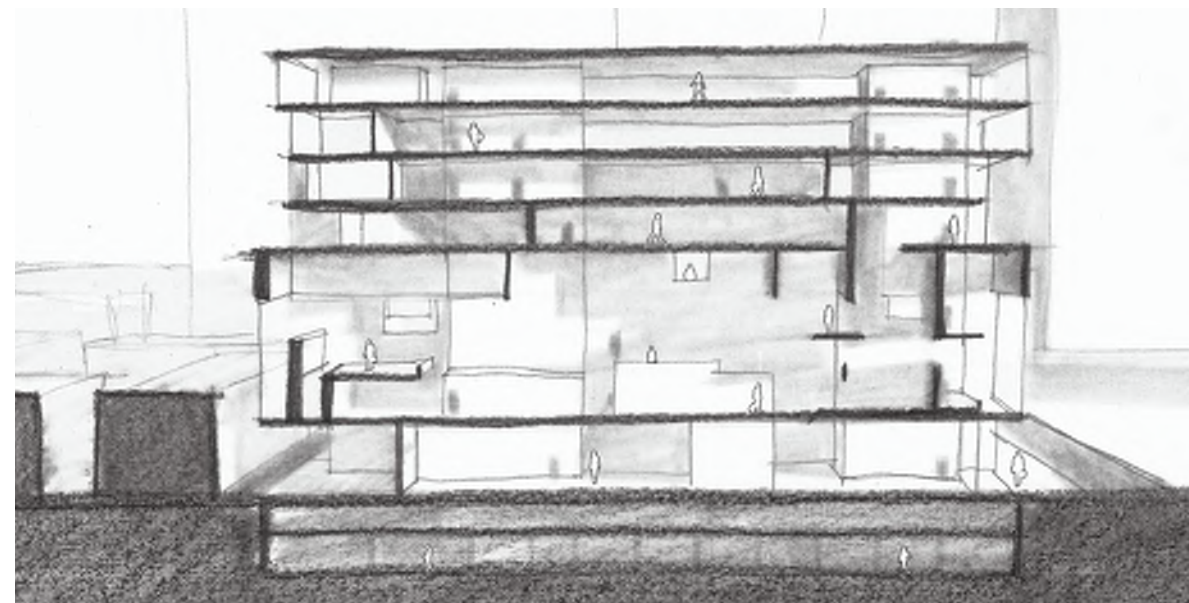




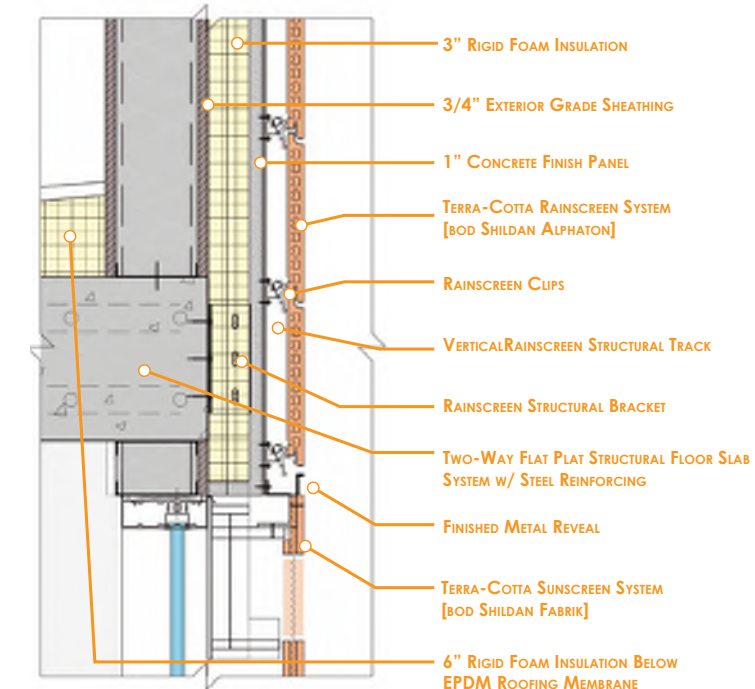
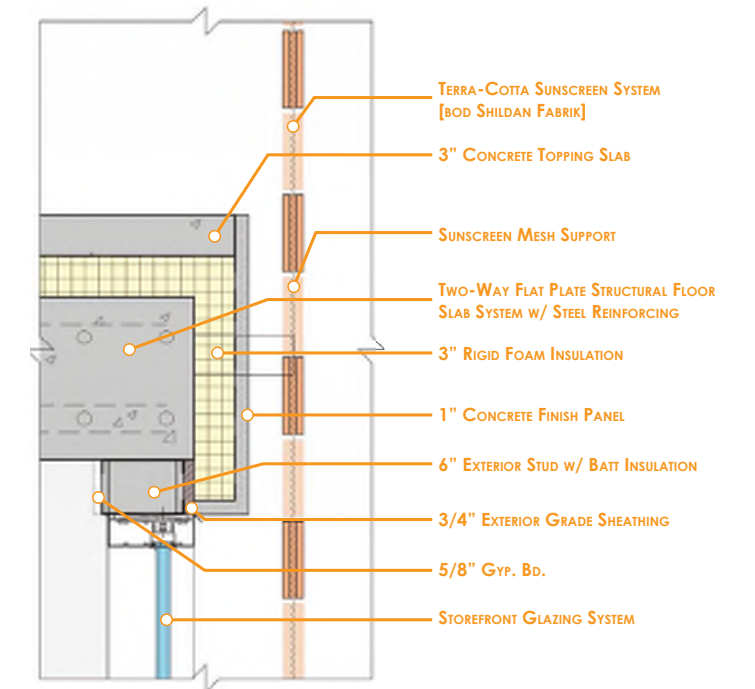
Interior Vignette [Aquitania]



Exterior Vignette [Aquitania]



Experiential Site Section



Envelope Details

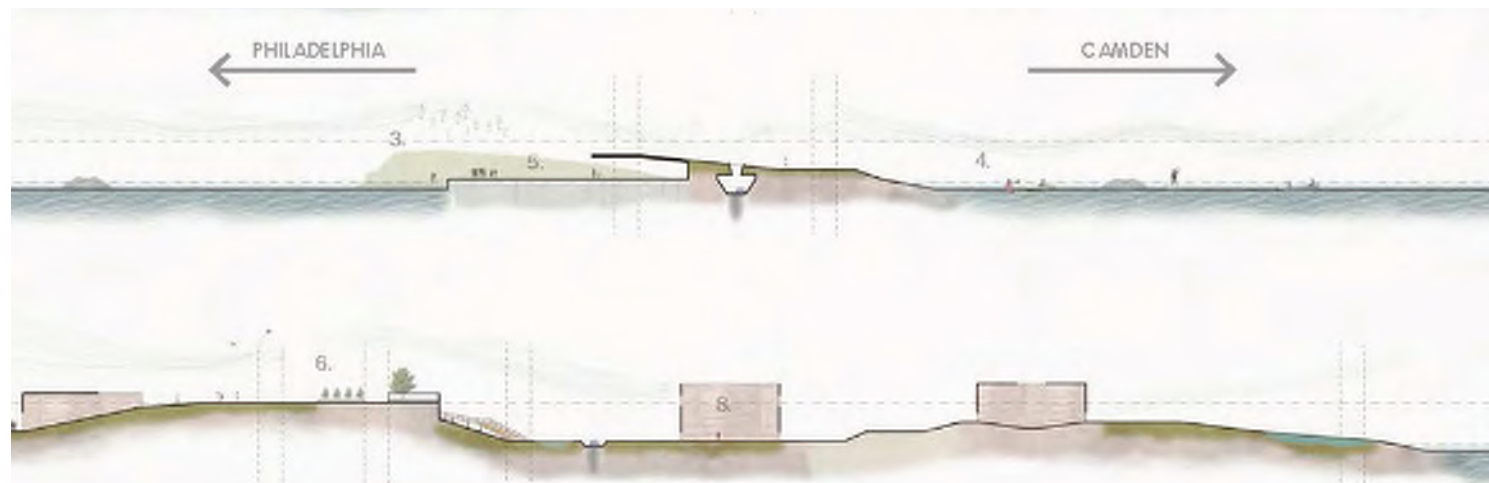


Experiential Collage: 'Tank Jumping at Zephyr Beach'

Petty Island: A Terminal for Wind

Delaware River | Philadelphia, PA

Project Team: Nick Ziolkowski
 Studio 4-2 & 4-3 [Landscape Design Studio]
 Project Duration: 15 Weeks
 Instructor: Jason T. Austin, RA



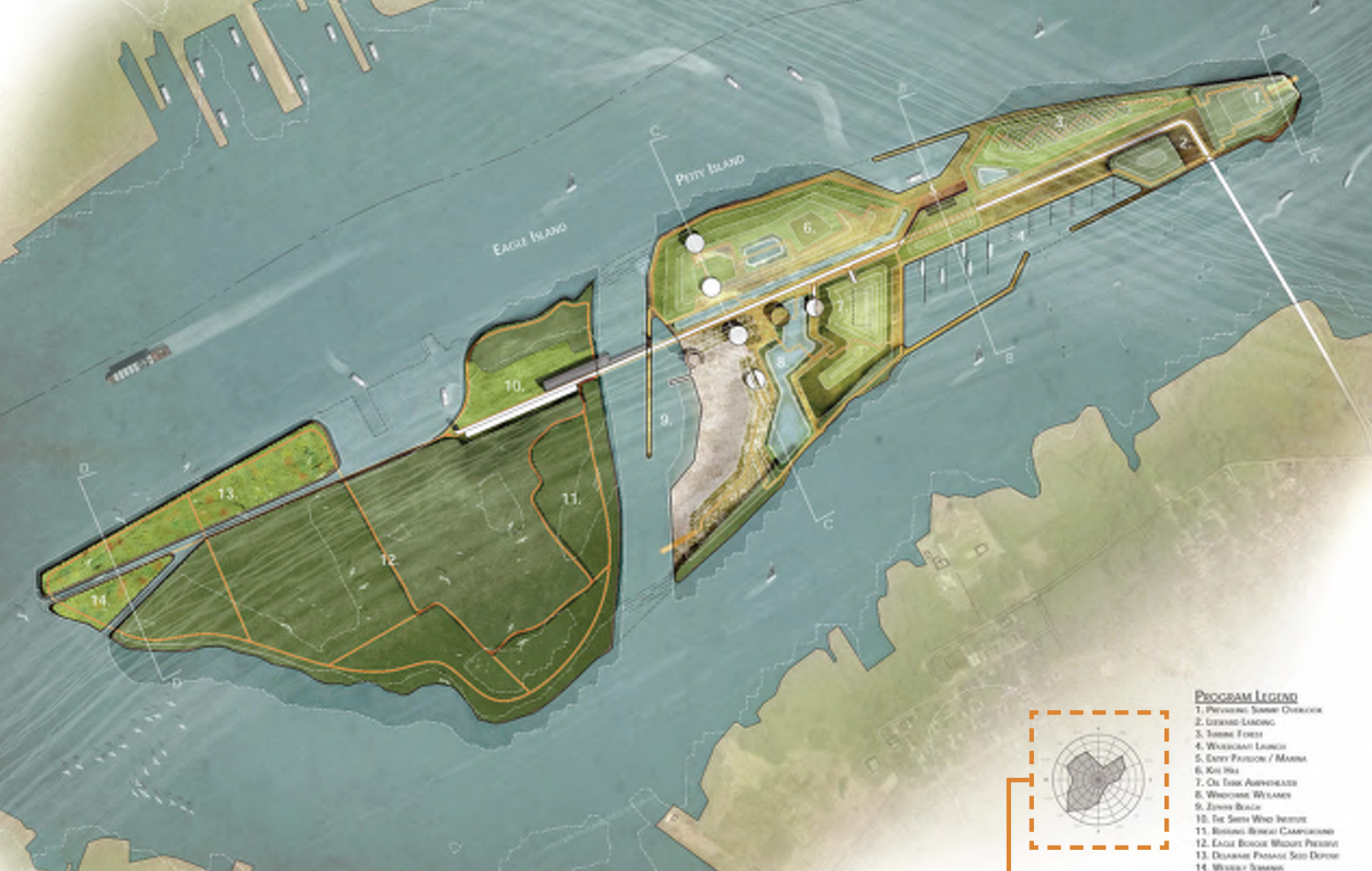
Site Sections [Ziolkowski]

Situated in the Delaware River adjacent to Philadelphia, this post-industrial parcel thrives with thousands of wildlife species, presenting an enchanting atmosphere that has pulled ashore pioneers and pirates alike. The new **237-acre master plan for Petty Island**, juxtaposed against an urban context, is an exciting public retreat that enhances the auditory, visual, and experiential qualities of wind, harvesting it as a renewable energy.

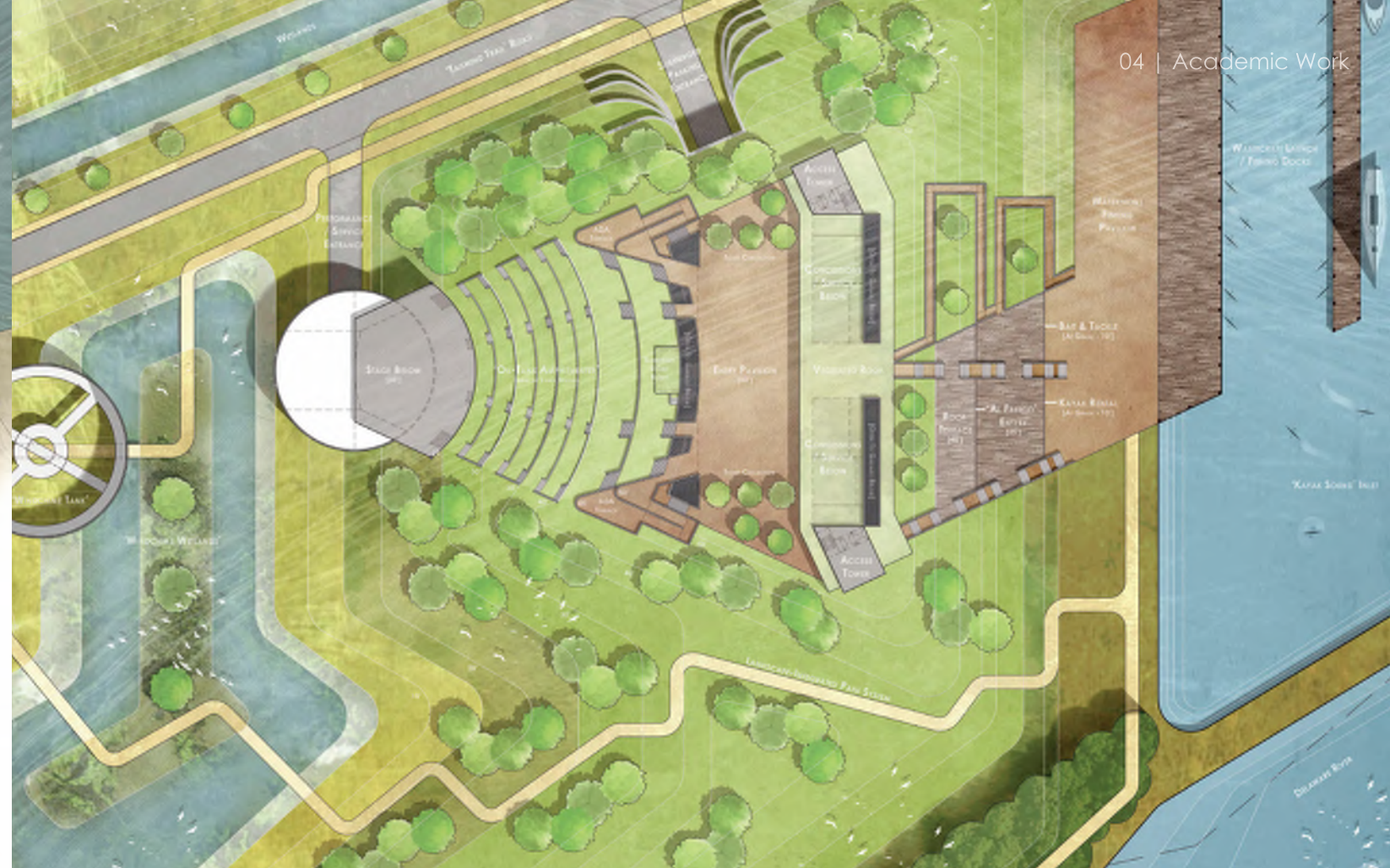
A 'Split to Preserve' mentality was employed to create **two unique island identities**, paying homage to a 19th-century island precedent just downstream, of which there are no remains today. Here, the southern 'Eagle' Island reclaims a large shipping port with its expanding wildlife preserve, while the northern oil tank-laden 'Petty' Island remains exposed to the elements for wind-centric landscape program. A total of 63 acres of land mass were cut and redistributed on the northern parcel, forming a series of engineered hills, valleys, and wetlands that emphasize and minimize the **relationship between topography and wind**. Traversing these elevational changes are two main path systems: one capturing the Philadelphia horizon, the other

annotating the island's geology.

A vehicular access path stitches the two islands together, terminating with a renewable-energies research institute, which overlooks the adjacent 'Eagle Bosque.' Visitors, who may also arrive via water taxi, will experience high seasonal winds on 'Kite Hill,' calm summer breezes on 'Zephyr Beach,' and engage auditory installments throughout the 'Windchime Wetlands.' Further north, the landscape unfolds to reveal a visitor center and marina, orchestrating access paths to nearby 'Turbine Forest,' 'Oil Tank Amphitheater,' and watercraft docks parallel to 'Tailwind Trail.' Visitors, like their predecessors, have the opportunity to engage with renewable energy production as it powers tomorrow's Petty Island.



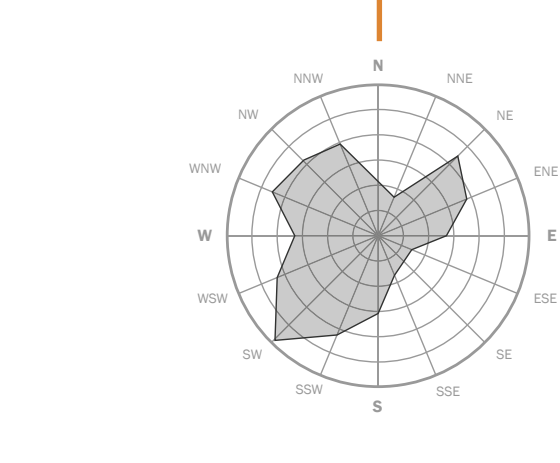
Landscape Master Plan



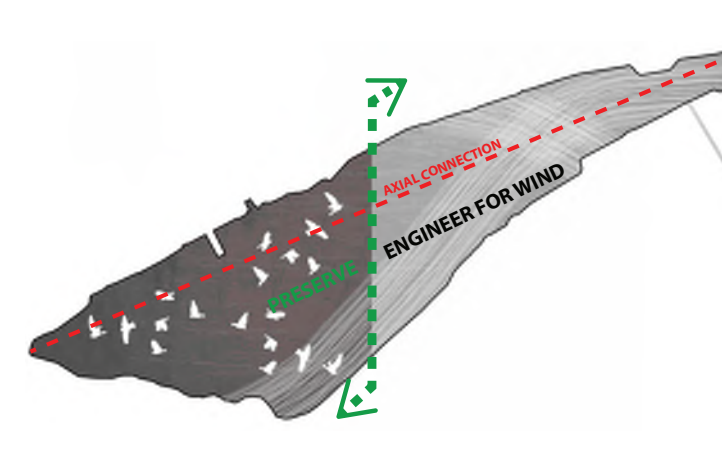
Enlarged Amphitheater Plan



Location Map



Wind Rose



Design Parti

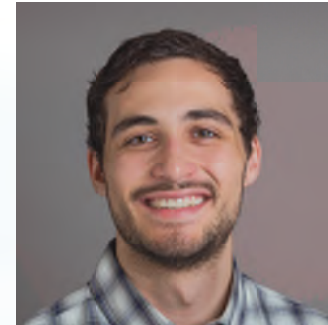


Experiential Collage: 'Approaching Turbine Summit'



Experiential Site Section

ABOUT



Matthew J. Lusk

Matt is a graduate of Drexel University's 2+4 architecture program, where he earned a Bachelor of Architecture Magna Cum Laude with a Minor in Construction Management. With over 5 years of experience as an architectural designer, he has completed his NCARB accreditation hours and is currently pursuing Architectural Registration in NJ.

Having developed projects in Health Sciences, Commercial, Retail, Higher Education, and Single & Multi-family residential market sectors, Matt's creative and integrated approach to architectural design is practical, reinforced by a broad range of technical abilities and experience.

Seeking to create an architecture that is both inspiring and memorable, his work philosophy is captured by these three words: Integrity, Diligence, and Precision.

Matt frequently volunteers his experience in the Built Environment with a mission organization that serves underprivileged communities in the Dominican Republic, helping in the fundraising, master planning, and execution of educational facility projects. While at Drexel, Matt followed his passion for Christian ministry and served on the leadership team for Drexel Cru.