

Portfolio

Vol. 02 | 2018

Katherine Weaver
Architecture ⊥ Visual Design

Environmental Graphics

Special Needs Schools

Charter Schools

Site Design

Urban Farming

Parametric Permutations

Portfolio
Katherine Weaver

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Savannah, Georgia
Savannah College of Art and Design

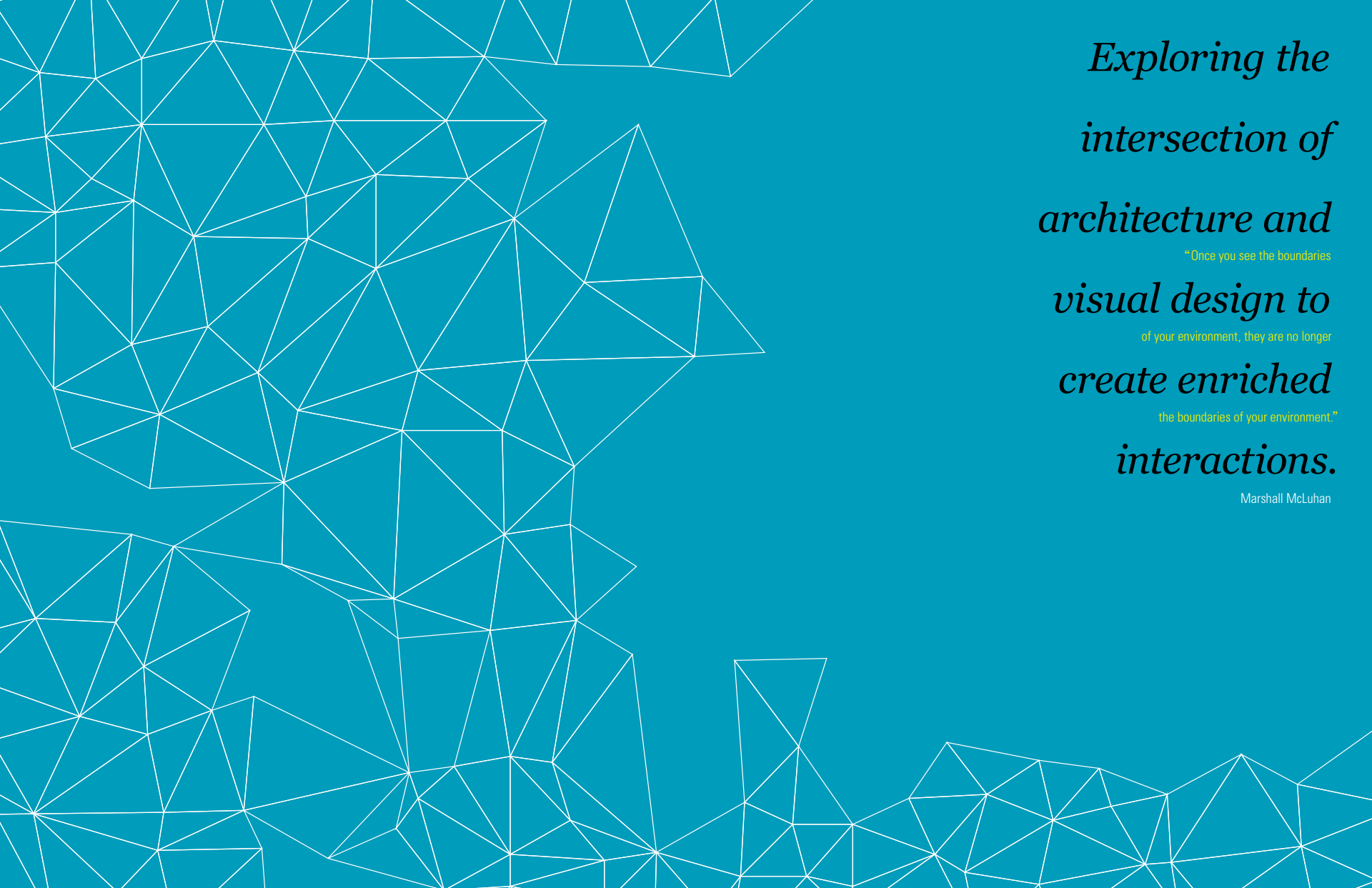
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ISBN 121-5-57-091270-0

Portfolio



*Exploring the
intersection of
architecture and
visual design to
create enriched
interactions.*

*“Once you see the boundaries
of your environment, they are no longer
the boundaries of your environment.”*

Marshall McLuhan

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Graduate Studio

Archive for the Multitude

Project Data

Location Princeton, New Jersey

Size 38,300 sf (12,900 sf Renovation; 25,400 sf Addition)

Type Special Needs Education Center

Construction Cost \$8 million

Role Intern Architect from Schematic Design to Construction Documentation

Kid, You'll Move Mountains

An existing gabled roof building houses administrative offices for the fundraising arm of the school and for Wawa House, an early intervention infant-toddler testing program. A new addition accommodates a series of building blocks containing a gymnasium and seven highly specialized classrooms, as well as life skills setups—a 'house,' an 'office,' and a 'store' providing students with safe opportunities to integrate into the fabric of the village. This collection of building blocks is linked by a 'porch'—a corridor that creates the opportunity for social

interaction while in transit from one area of the building to another. The single-loaded porch offers views of nature throughout and forms a protective courtyard for the outdoor areas.

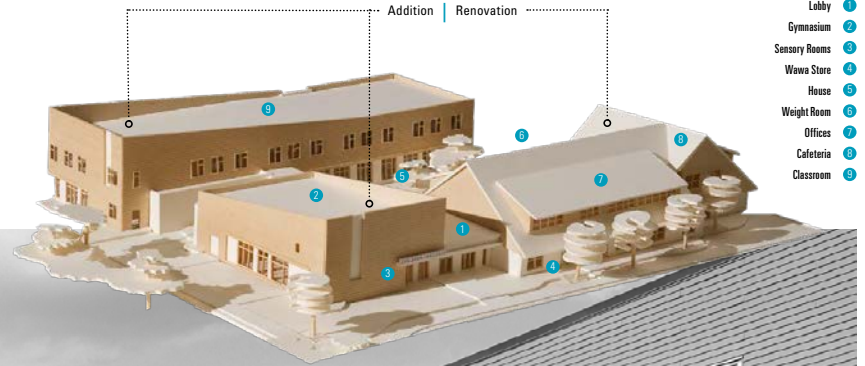
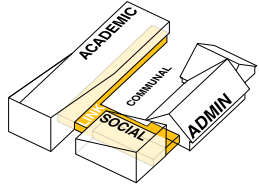
Throughout the design, materials were chosen to appeal to the autism spectrum thought process and to create an atmosphere of peace and calm—color palettes are neutral and muted, strong considerations for natural light, basic rhythmic patterning of materials, and a program layout that is simple to navigate.

01

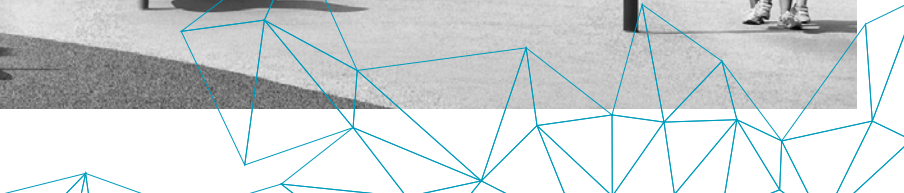
The Eden Institute

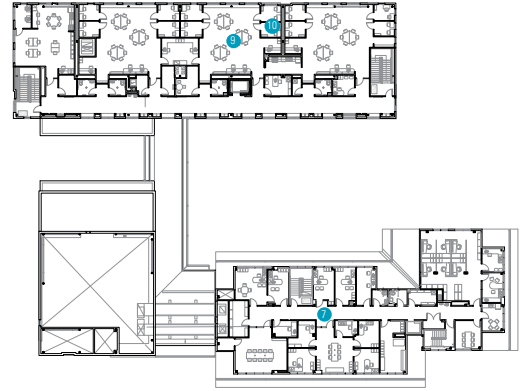
Special Needs School





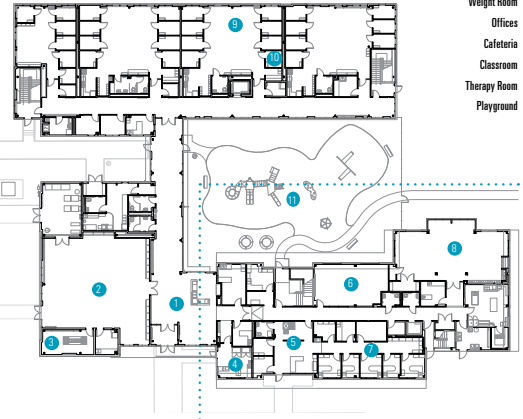
- 1 Lobby
- 2 Gymnasium
- 3 Sensory Rooms
- 4 Wave Store
- 5 House
- 6 Weight Room
- 7 Offices
- 8 Cafeteria
- 9 Classroom





Second Floor Plan

- 1 Lobby
- 2 Gymnasium
- 3 Sensory Rooms
- 4 Wave Store
- 5 House
- 6 Weight Room
- 7 Offices
- 8 Cafeteria
- 9 Classroom
- 10 Therapy Room
- 11 Playground



First Floor Plan

Addition : Renovation





Project Data**Location** Newark, New Jersey**Size** (22,500 sf) 7,500 sf Renovation;
15,000 sf Addition**Type** School for Grades K-8**Construction Cost** \$13.4 million**Role** Project Architect and Designer from Schematic Design through Construction Administration and project closeout. Managed all consultant coordination and in-house staff.**A Catalyst for Change**

Located in the University Heights district of Newark, NJ, University Heights Charter School is seeking to expand its facilities to grow through grade 8. Now educating students in grades K-5, University Heights Charter School teamed up with the Canyon-Agassi Charter School Facilities Fund to find the right space to create a home for their second school facility.

After evaluating a variety of spaces in Newark, University Heights chose a unique location. A three-story brick industrial building, previously used for fashion manufacturing, is being repurposed with the combination of two new additions—a two-story 10,000 sf classroom

addition and a 5,000 sf gymnasium addition. The design balances the preservation of historic elements of the building to retain its unique character, with modernizing and upgrading the facility to enable University Heights Charter School to develop in each student the character, scholarship and leadership to succeed in life, college and the community.

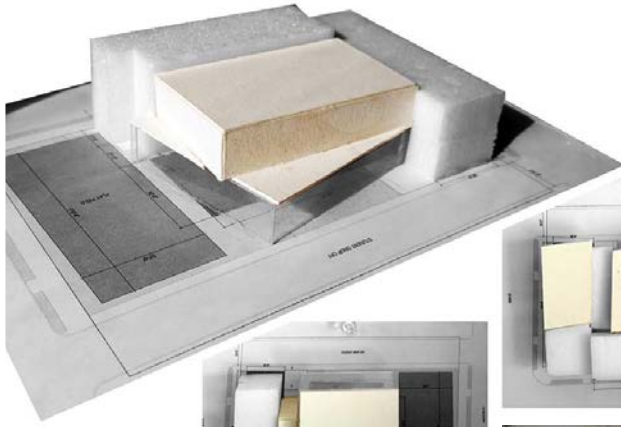
The classroom addition mimics the existing building's brick in a modern way. The gymnasium addition uses a Kalwall system to create a floating light box perched above metal panels painted with super-graphics to welcome students and project the school's identity.

02

University Heights

Charter School









Project Data

Location: Mt. Laurel, New Jersey

Size: 178,300 sf Campus (30 acres of Site Design; 120,000 sf Academic Building; 50,000 sf Housing Units; 6,500 sf Housing Administration Building; 6,500 sf Facilities, Pavilion, and Greenhouse)

Type: Special Needs Outreach Campus

Construction Cost: \$75 million

Role: Project Designer from Schematic Design to Design Development

One World For Everyone

For nearly 130 years, Bancroft has been a leader in breaking down boundaries for individuals with neurological challenges, autism, and intellectual and developmental disabilities. To progress with its innovative continuum of care and to unlock each person's full potential for lifelong learning and fulfillment, Bancroft is relocating programs on their 16 acre Haddonfield campus to a new 30 acre campus.

This new campus will provide state-of-the-art facilities for the Bancroft School, the Lindens, and Transitional Housing in 178,000 square feet of space. Its buildings will be organized around a series of outdoor rooms which

will serve a variety of scales and purposes, linked by views and pathways. These buildings and a sensory trail will form natural protective edges to the pedestrian campus, with vehicular traffic and parking located along the perimeter.

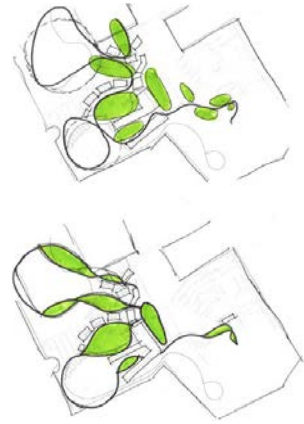
Key to the success of the campus is the introduction of a commons building which creates synergies between the education and housing programs and provides nodes of interaction with the surrounding community. Like a successful village, the new campus will maximize opportunities for exchange with families, volunteers, seniors, other schools, universities, and businesses.

03

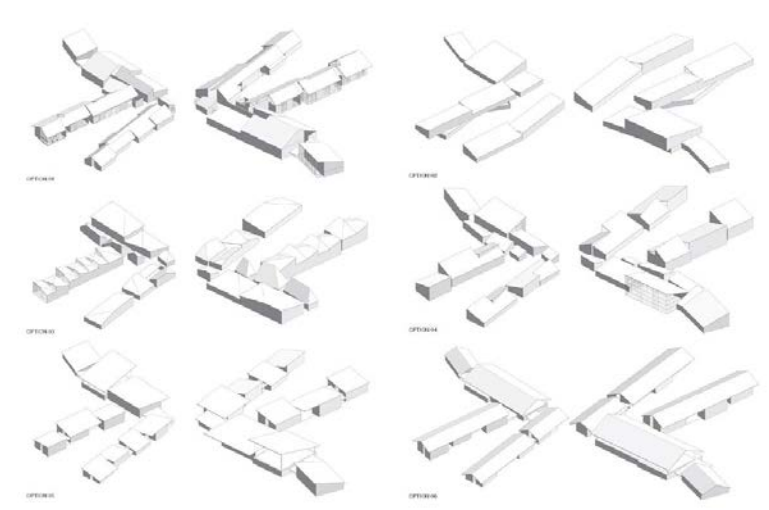
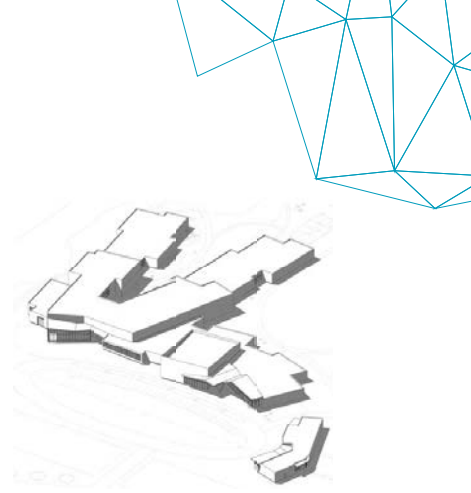
Bancroft

Special Needs Outreach Campus









The building roof lines undulate to break down the expansive first floor area.



Project Data**Location** Newark, New Jersey**Size** 104,00 sf New Construction**Type** Academic Building for Grades 9-12**Construction Cost** \$26.4 million**Role** Project Architect and Designer from preliminary site selection through Construction Documents. Managed all consultant coordination, in house staff, and day to day client communications.**Critical Mass**

Littleton Academy is set in a residential neighborhood of Newark. The plan diagram is a direct response to both the program and surrounding context. The basic program components are organized based upon functionality and the need for a variety of public and teaching spaces. On the upper floors are a series of classrooms clad in 'brick city's' staple building material (an unsaid requirement that forced even Richard Meier to use brick).

The length of the building and the surrounding three story townhouses called for a strong vertical move with the window patterning. The

series of random windows, follow basic rules but shifts alignment to break down the mass of the upper floors. Organization of the windows in regularized fenestration patterns would further exhaust the elongated mass.

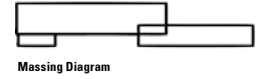
These classrooms are supported by a translucent panel gymnasium and storefront public spaces, both of which are shared with the surrounding neighborhood. A playful metal canopy integrates the program components by organizing the various roofs and parapets into a cohesive form.

04

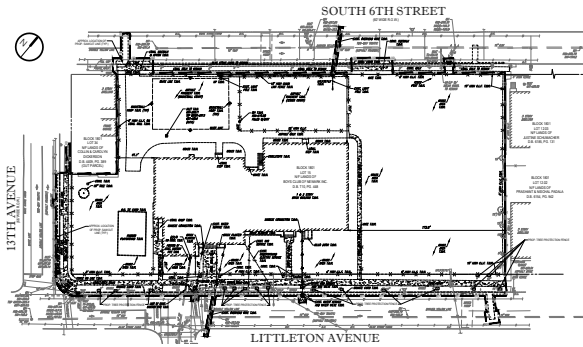
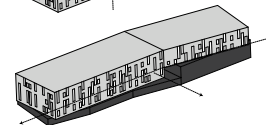
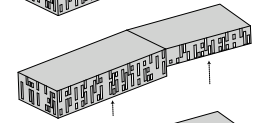
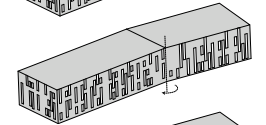
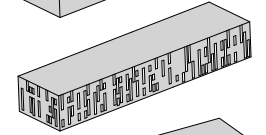
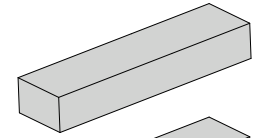
Littleton Academy

Charter High School



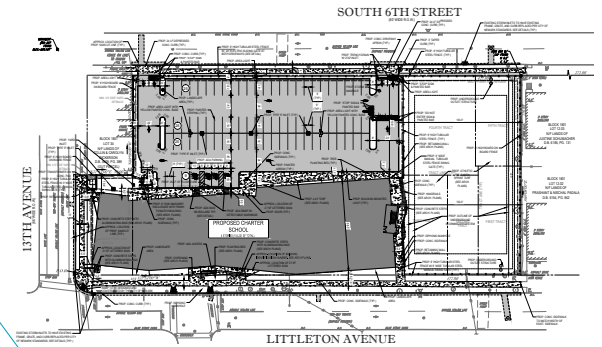
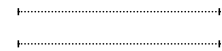


Massing Diagram



+

Academic building (100,000 SF)
 On-site parking meeting city ordinances
 Outdoor play

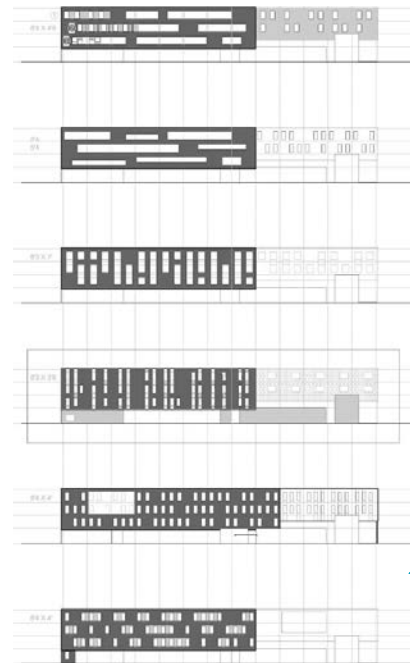




Plan Parti

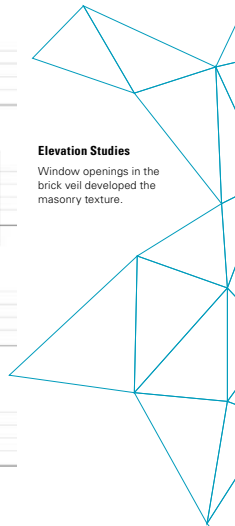


Elevation Parti



Elevation Studies

Window openings in the brick veil developed the masonry texture.





West Elevation



North Elevation

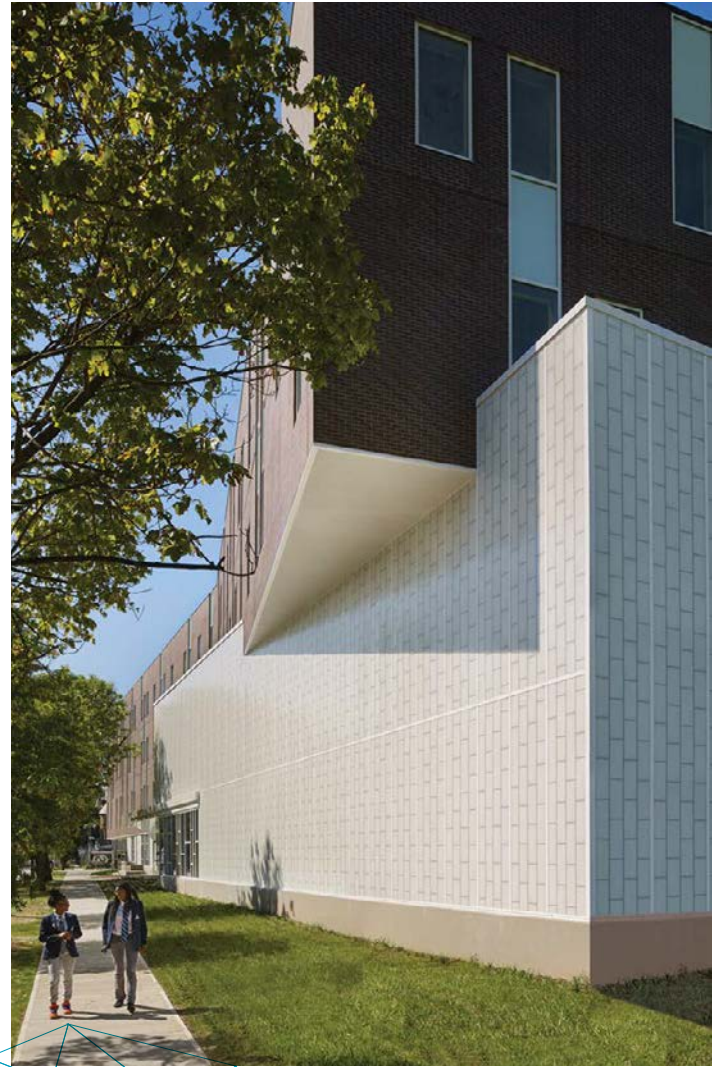


East Elevation



South Elevation

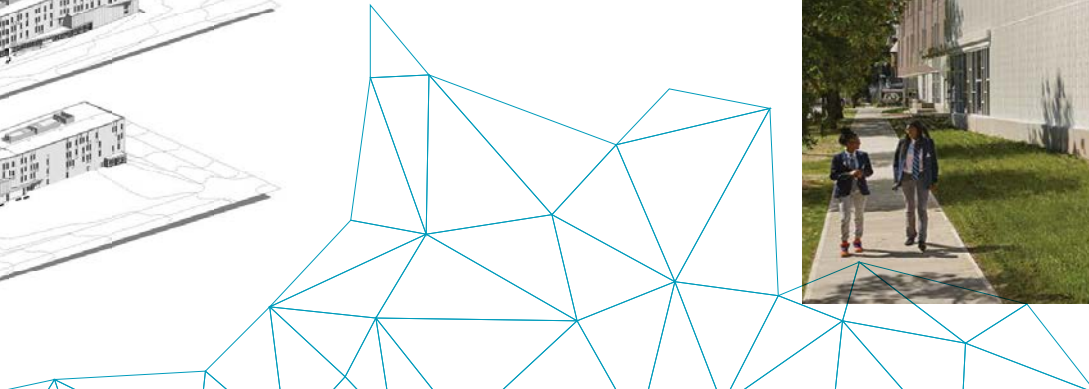




View of southeast corner



View of northwest corner





1



3



5



6



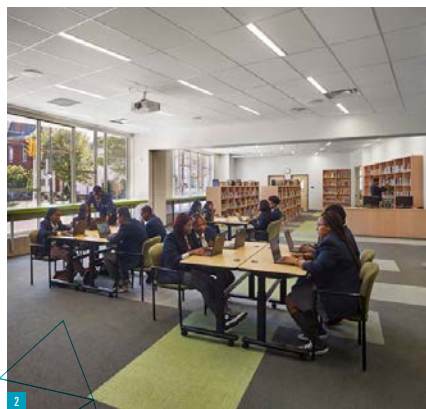
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4



Second Floor Plan



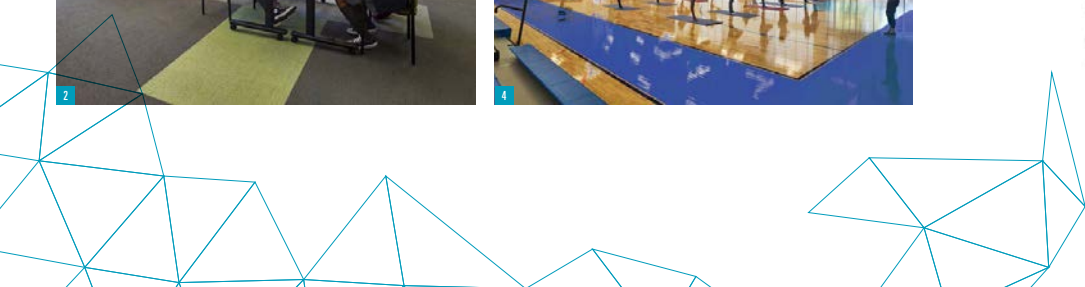
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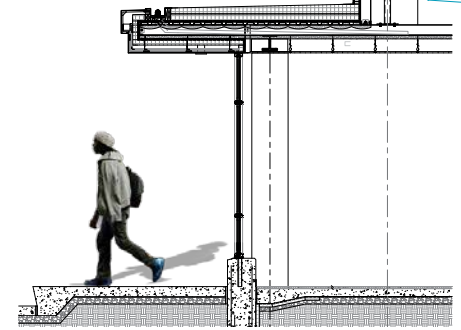
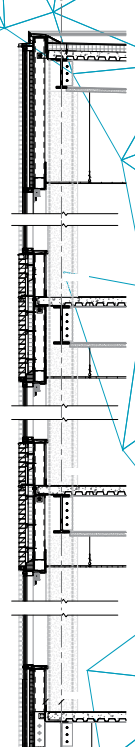
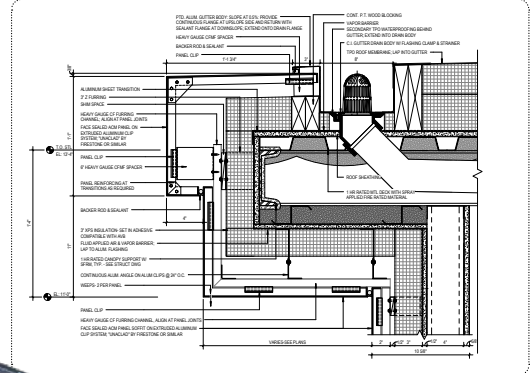
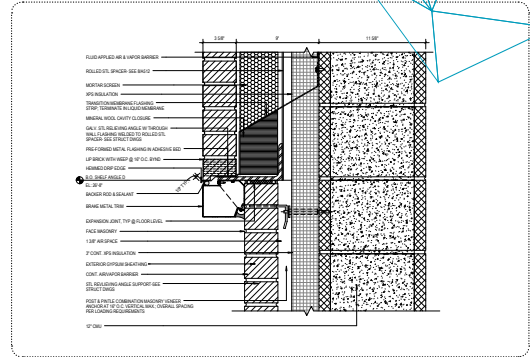
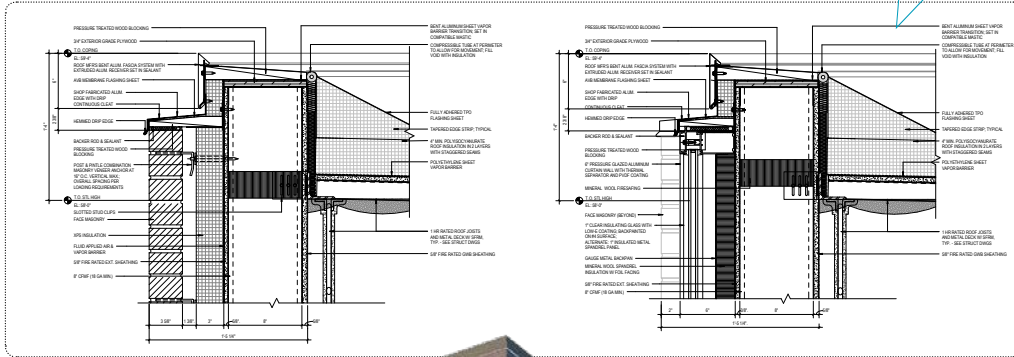


4



Ground Floor Plan







Project Data

Location Newark, New Jersey

Size 77,000 sf renovation and addition

Type Farm related support and growing areas including processing, shipping and receiving, laboratories, event space, and corporate office space

Construction Cost \$39 million

Firm Project Designer

Growing a Community

At 212 Rome Street in the Ironbound neighborhood of Newark, New Jersey, growth is taking place. AeroFarms is the reason for that growth. As a leader in urban agriculture, the company utilizes state-of-the-art technology to grow leafy greens, herbs and micro greens in a process called "aeroponics." In this process the seeds are placed on a cloth material and then onto growing trays where they are misted with nutrient

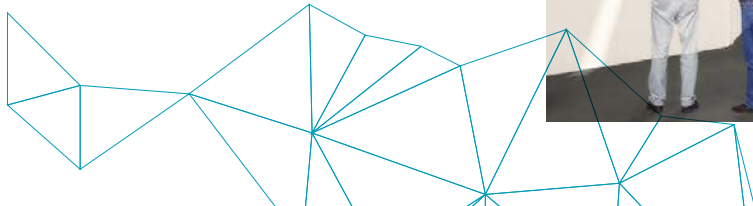
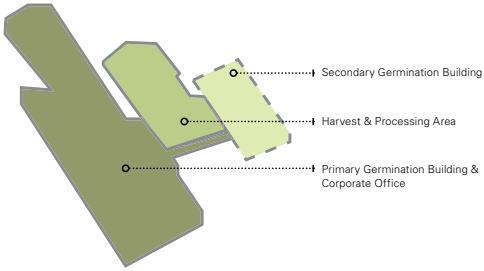
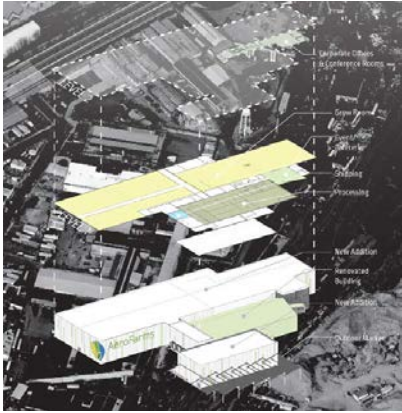
rich water. The trays are placed on growing racks under integrated LED lighting. Once the seeds have germinated and reached maturity, the trays are removed from the racks and taken by carts to the harvester. The harvesting machine removes the greens from the cloth and packages the product into plastic containers. From here, the greens are packaged for shipment to local businesses.

05

Aerofarms

Vertical Urban Farming





Polarity Theory

What is the definition of architecture? If my definition is different than someone else's, and neither of our opinions equals that of another person, what is architecture? How can it be defined? Another question is, if it is inconclusively defined, how does it exist?

With words whose foundations initiate broad interpretations, it seems necessary to begin to define them through an investigation of their similarities with other things. To use a common element in architectural jargon, the existence of the "shed" helps to identify these questions with a tangible object. A physical structure of a shed exists without the definition of architecture; objects can exist independently of personal bias. A shed is only called a shed because it has human definitions. Architecture's existence originated from the same reasons.

Continuous Spectrum

The antecedent of this project is the idea that I find most academic projects have no external forces to validate design and that design processes are therefore arbitrary. The process that this project intends to follow is a formal investigation into the methods of validating design through the creation of an analytical spectrum. The implications of a spectrum of architectural elements is manifested through a visual

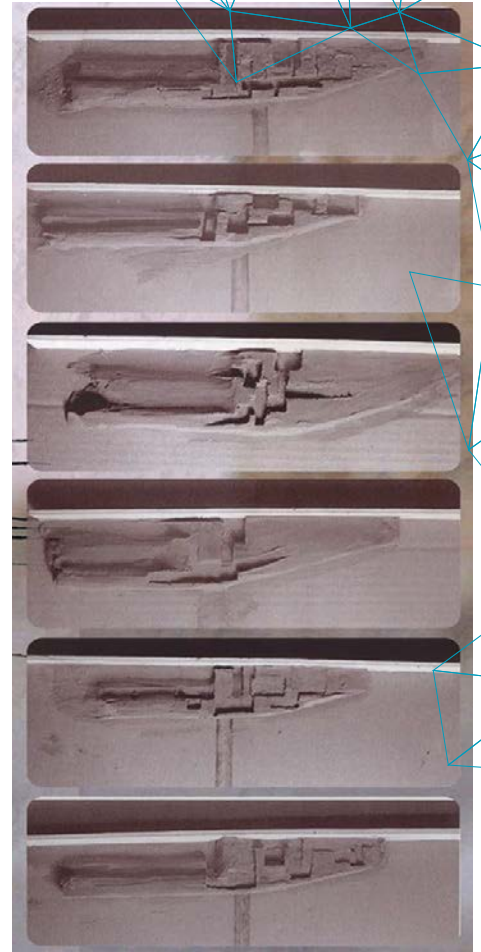
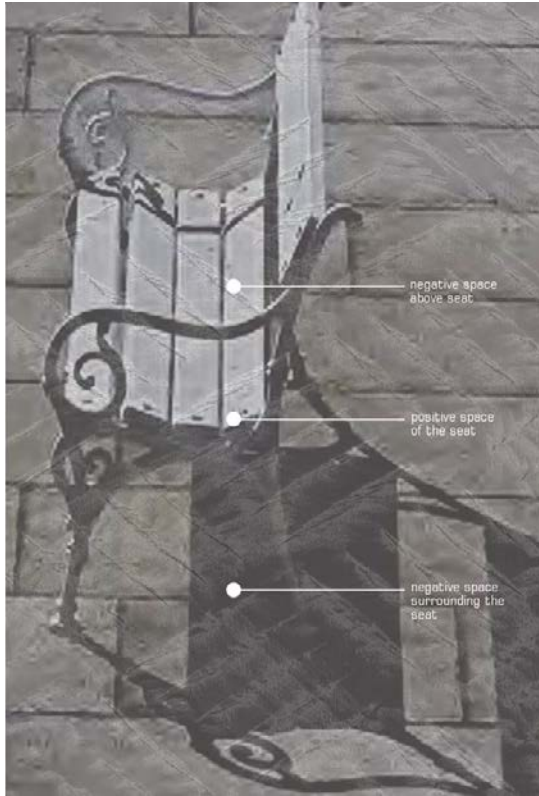
The derivation of architecture bases itself upon the incidence of human thought; architecture is the interaction of physical objects with conception. The physicality of an object's existence is not dependent on human interaction, but architecture is. To pursue a purer sense of architecture, it is necessary to understand natural truths independent of human interference. If definitions only exist in thought, then how can anything be independent of human biased? Things cannot be free of human relationships. Since human interaction is inevitable, this should be celebrated. Architectural design should expect human interaction. Why is it that when I push on a wall, I don't fall through it? Why is it that the floor doesn't cave in when I step on it? Molecules are based upon attraction, repulsion, and neutrality.

'dictionary' of materiality, space, and time in order to discern meaning from the commonalities.

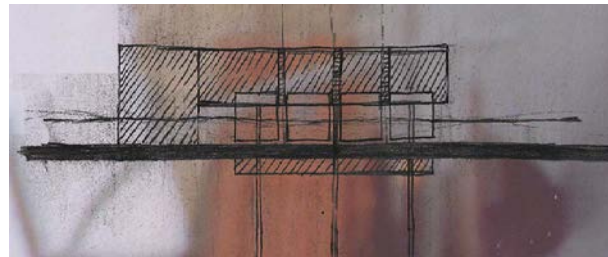
I find that words tend to become a vague inclination of architecture. Instead of undergoing a verbose proof of a theory, I offer a visual proof in an attempt to abate the arbitrariness of academic architecture.

06

Undergraduate Studios A Search for Meaning in Architecture



Polarity Theory From the theories of atomic structure, a theory of architecture can be inferred. The conscious designation of solids and voids in hierarchical levels of interaction subsequently produces multiple thresholds of motion and stasis during inhabitation.



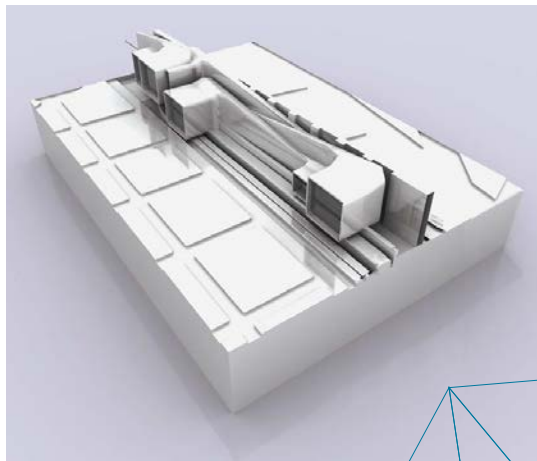
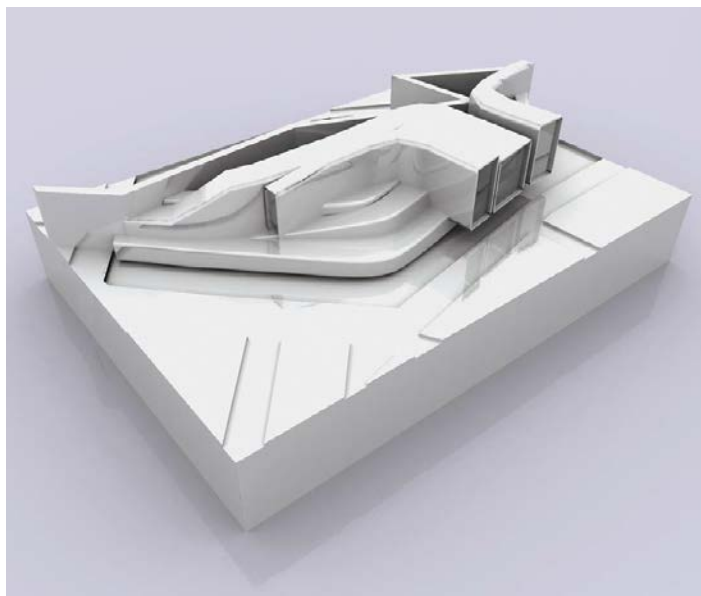
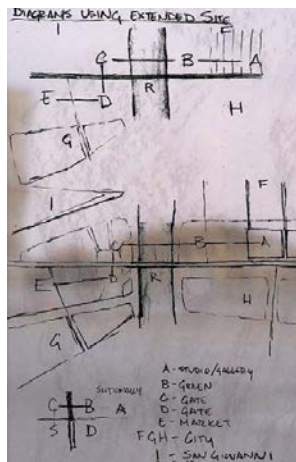
Artist studios and residential. The studio and residential spaces are for the perpetual inhabitant for whom the space considers the static interaction with his/her self. This is their place of sanctuary and for inspirations, a place to dream and take refuge. The application of architectural space focuses on the microcosms are broken into small, intimate spaces.

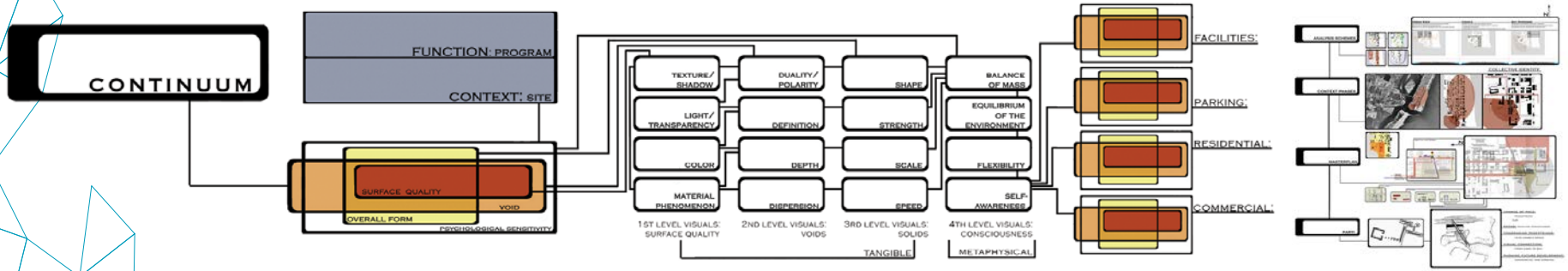
Commerce. Program elements intended for commerce are situated in areas of transience. The marketplace and private commercial stores vary in their openness of spaces; shops intend to attract and enclose the customer while an outdoor market intends to create a sense of place through the collective vendors.

Entertainment. The main location of recreation are in the green spaces of the site. In order to increase the intensity of location, the venue is situated in front of San Giovanni in Laterano so that the historic church may become a backdrop. The other recreational spaces create a network of interconnected spaces.

Vehicular traffic. Vehicles on site are both kinetic and static. Moving and parked vehicles require a distinct separation with pedestrians for safety and efficiency. Traffic is currently separated into lanes, which will still remain in the site plan. Areas of circulation will be rotated so that both the vehicular and pedestrian traffic can continue movement. Vehicles in a state of stasis, parked cars, will be located on the north east side of the site so that the instances of cars slowing to park will not interfere with ones in motion. This is also close to the location of the residential and studio units, which are the perpetual inhabitants in most need of the shortest walk from car to destination.

Pedestrian traffic. Continual movement will keep the relationship with traffic flowing, but there is the consideration with the pedestrian and the architecture of the site. There are three different instances of pedestrian traffic: Traversing space, moving toward a destination on site, and "Window shopping" movement. The facades and size of spaces will facilitate the inhabitant's reading of his/her environment.





The needs of the site create a necessity for year round use which is implemented through the layering of elements of the continuum resulting in interstitial spaces, the areas in which interactions occur.

Parking/Traffic. The parking garage should be a representation of the fluctuation of inhabitation over a period of time. The parking garage is full during the day then undergoes a change as the day fades into evening. This is a similarity that this specific site shares with the entire city.

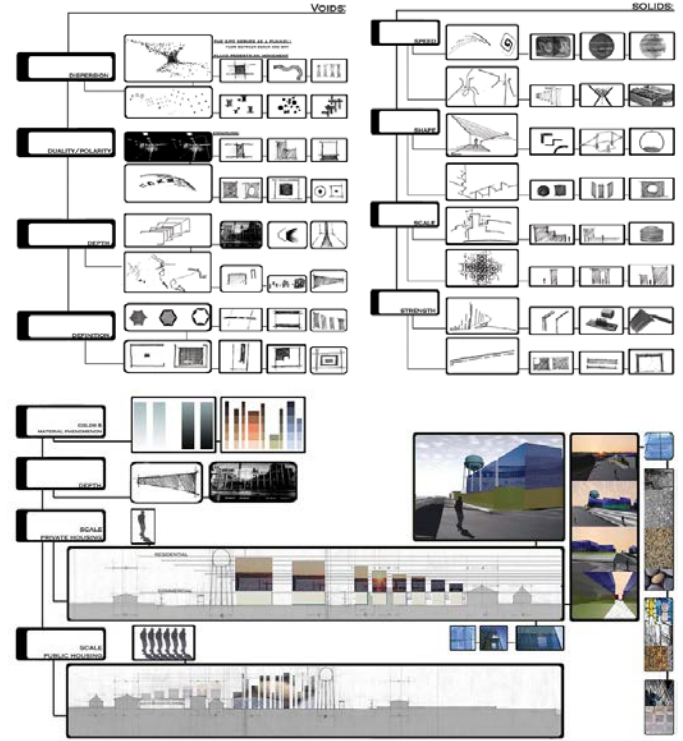
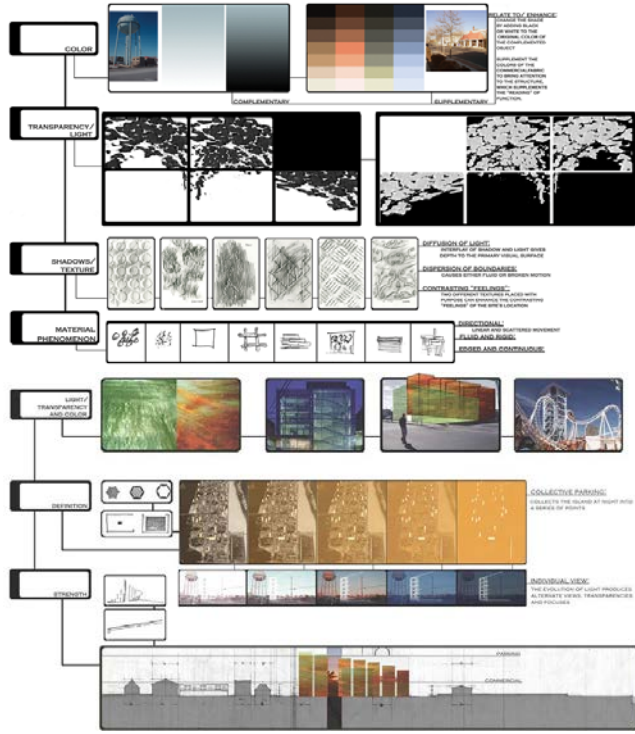
Commercial Space. The façade of the commercial space needs to be geared toward the visual attraction of the pedestrian and the vehicle.

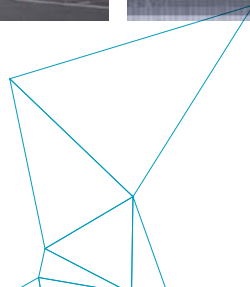
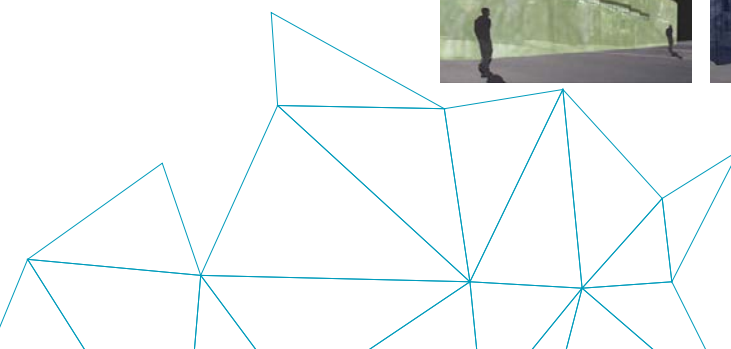
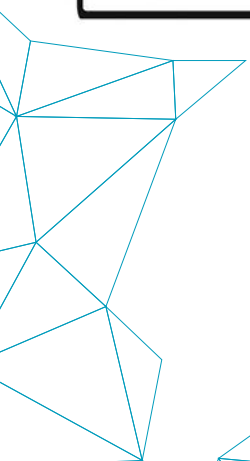
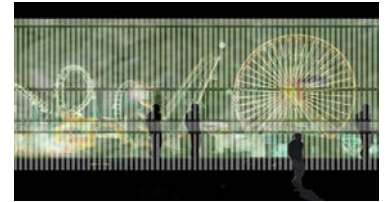
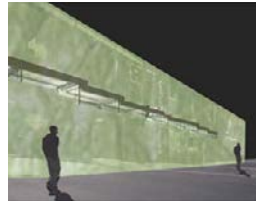
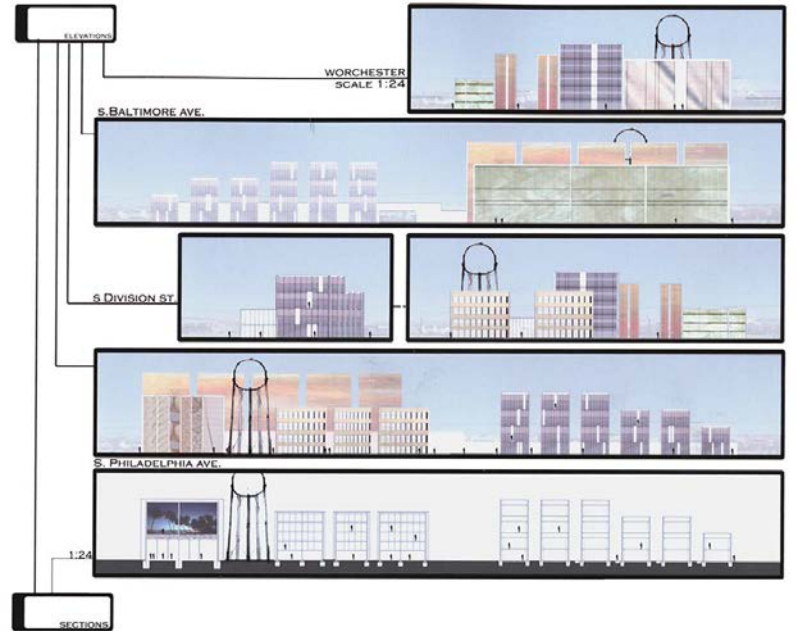
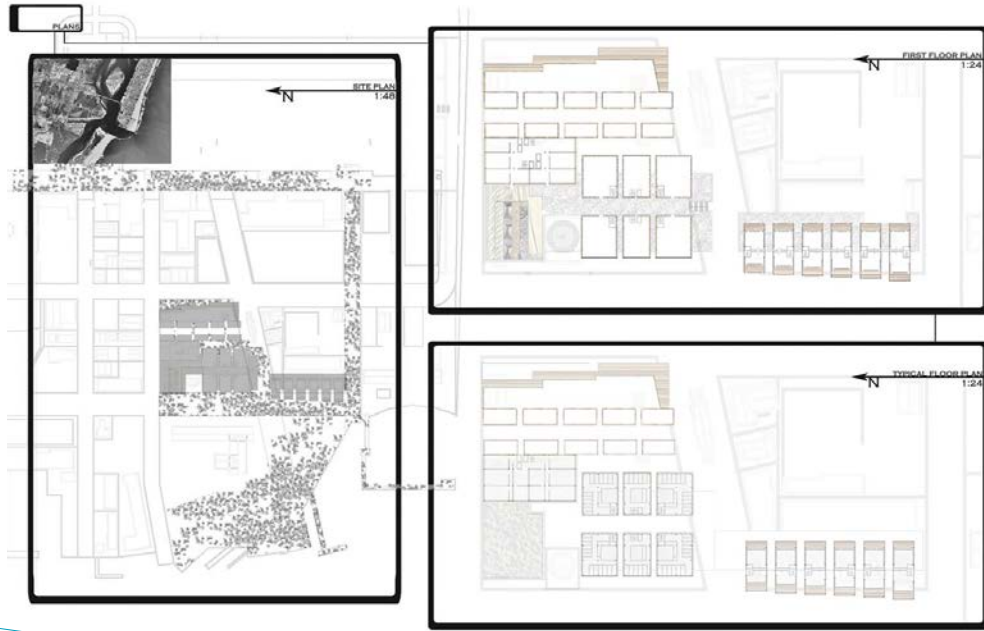
Residential Space. Space for the residential units will be directly linked to the level of permanence of the inhabitant.

Time. Uses vary with the time of day. The ocean is the main attraction during the day and the bay will be the main attraction at night.

Spaces Interstitial Space/thresholds. An emphasis on the thresholds between positive and negative spaces. The interstitial spaces on site shall reflect the various transitions from the exterior to the interior depending on use.

Materiality. The readings of the motions on site are best depicted through materiality, allowing a thorough reading of the uses through the creation of multi-dimensional surfaces.





Formal Explorations

After conceptual ideations into basic theories and the meaning of architecture in undergraduate studies, and a liberating embrace of nihilism—the first semesters of graduate study were focused primarily on explorations of form. Evolutions of buildings forms have shifted from a Modernist clear delineation and simplification of rectilinear forms as expressed in Mies Van der Rohe's and Johnson's glass and steel shells to neoclassical revivals with contemporary materials. After a brief hiccup of Postmodern teals and mauves, architecture has entered into the age of computer generated forms. Deconstruction of hard edges and solitary geometric masses has resulted in a unifying form

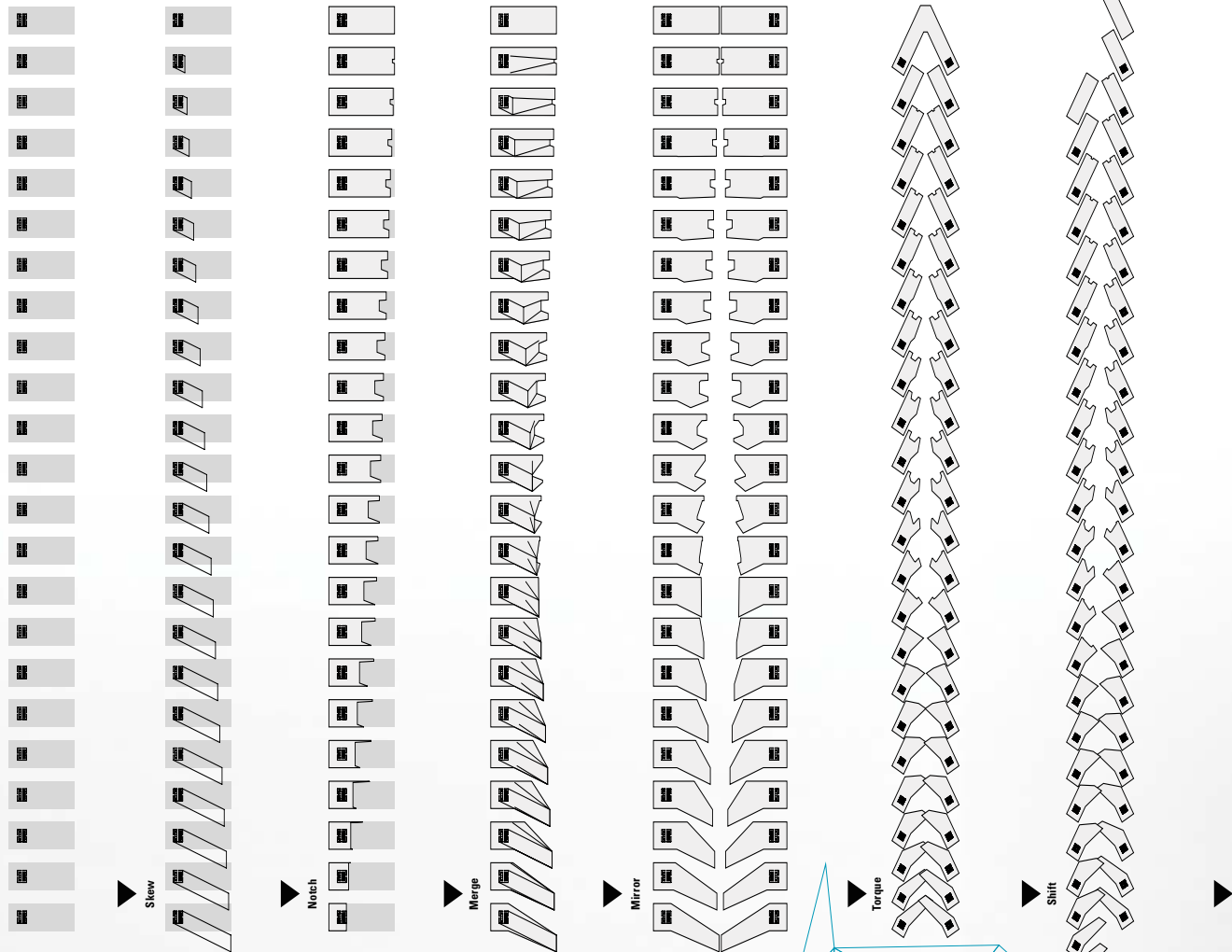
with ambiguous edges. Permutations of forms exploit the availability of rapid computational prototyping.

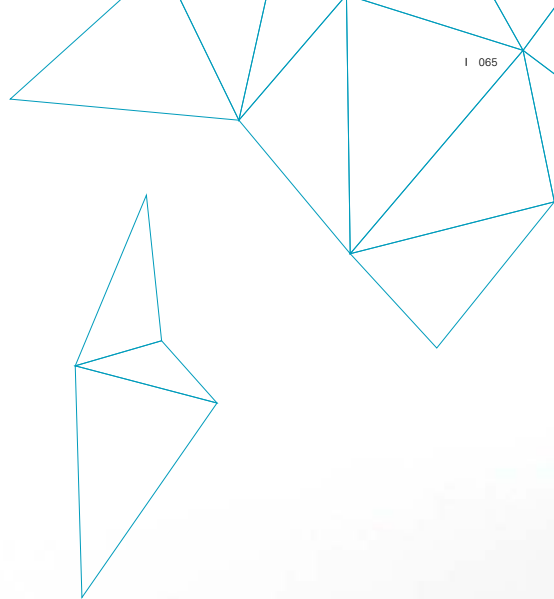
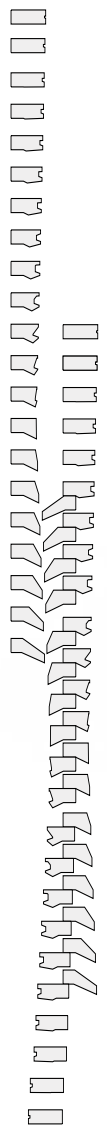
The following formal explorations focus on dynamic building forms. This doesn't imply that the architecture intends to use technology to literally make the building rotate or shift its physical global position. Instead, motion is inferred through inflecting repetitive elements. Through the establishment of formal structures, such as the floor plates in a high-rise, boundaries are parametrically altered to create subtle inflections between adjacent members. The following two studios explore these methods of movement in plan and section.

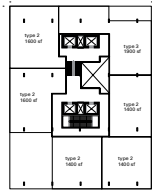
07

Graduate Studio

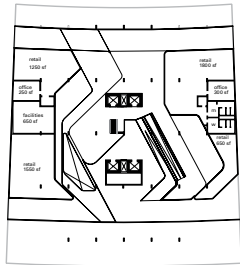
Parametric Permutations



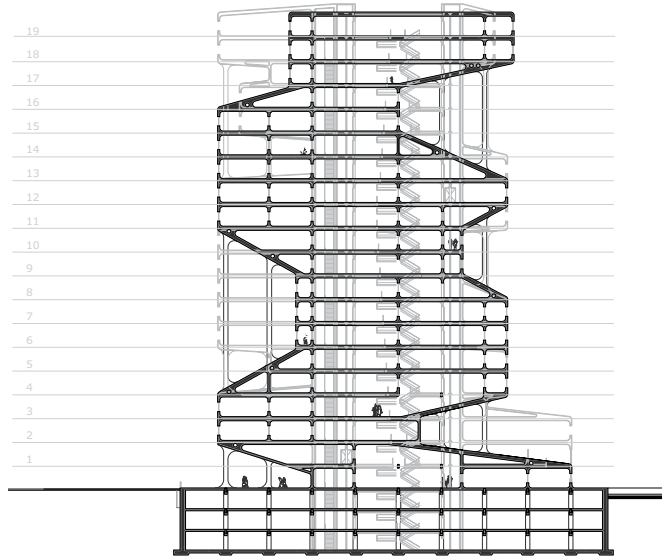




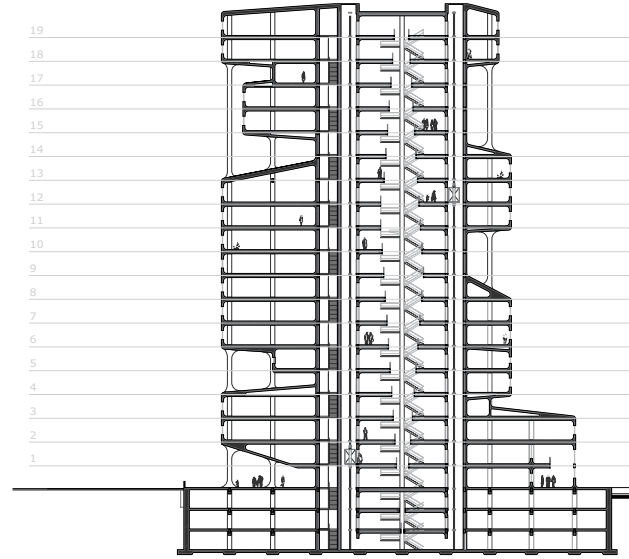
Residential floor plan



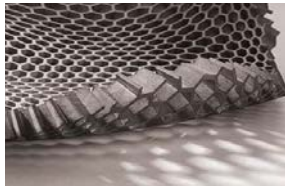
Ground retail floor plan



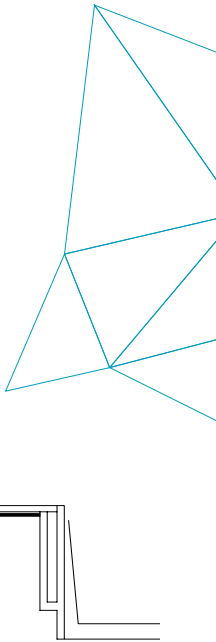
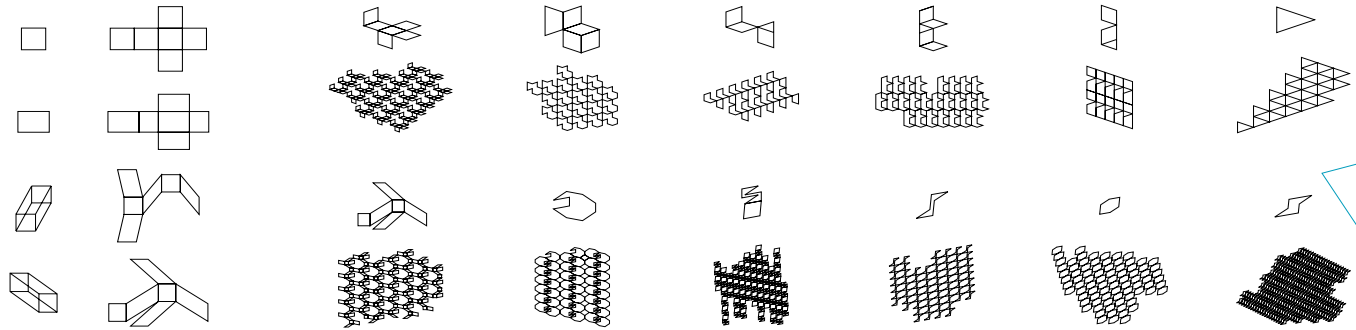
Building section through residential units

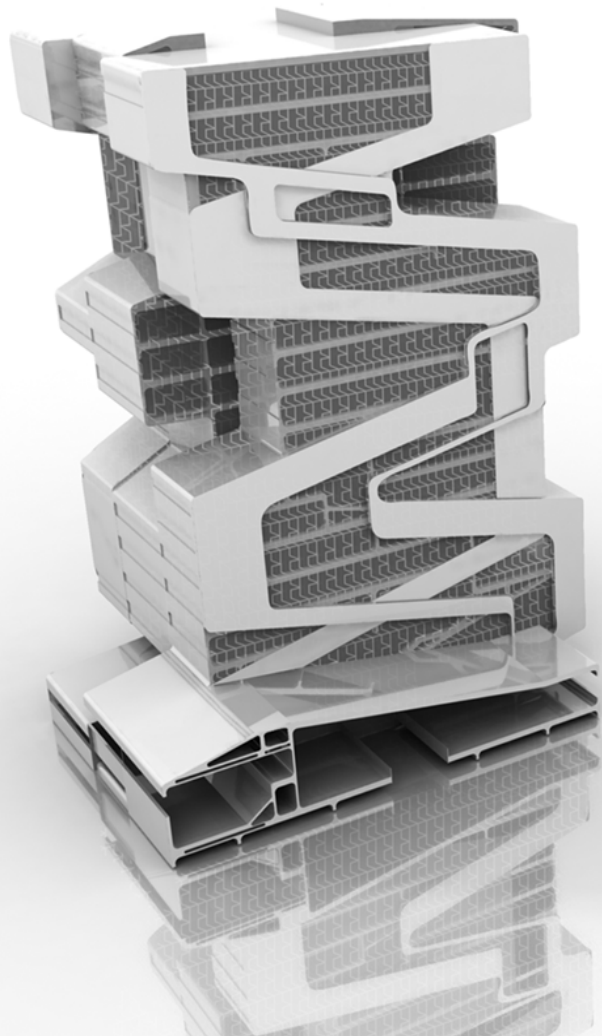


Building section through core



Dubai Studio





Computational Time

What and how should information be preserved? How has the control of information shifted alongside the rapid increase in 'networked' channels now coming into the hands of the many and no longer controlled by formal institutions? With the growth of digital networks (YouTube, Facebook, Wiki) and reservoirs of information, what happens to the content of information with the rapid increase of unmoderated devices? How will knowledge be formulated differently in the next generations when the social institution of the library will become extinct as a center of research, now being more and more outdated by 'Google searches.' Does computational time serve as a threat?

I have to reply to this question as a very general, no—at least for the time being. With the control of information being shifted from the few to the many, there is of course the possibility for 'file corruption' but this engages the user to question the content and to begin to learn to create value structures for self-thinking. Instead of 'britannica is always right' now I question the validity of Wiki content in the sense that masses of information reservoirs are available at the click of a mouse

(which in a tangential thought I think the interface needs revisiting in which a linear 'clicking' system is replaced by an integrated systems approach). With the plethora of resources, I can easily compare information resources and begin to create a synthesized construction of knowledge.

Architecturally, the advent of computational time leads me to use the creation of data production as a method to create a physical manifestation of 'sensed' objects moving in space. Through the 'in-migration' of sensor data and then an 'inter-urban diffusion,' I see that architecture can begin to act as a new kind of spatial filter (from the library to the server building) between these two information channels. Architecture can become a spatial transference between the collection of data and the production of meaning—from the sensors to the people being exposed to the filtered data. Buildings can mediate the lack of interpersonal affinity due to the erasure of collective space (the library), and the rise of isolated space (the computer screen).



Graduate Studio

Archive for the Multitude

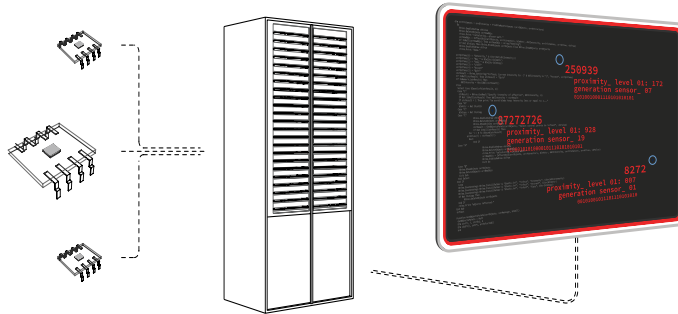




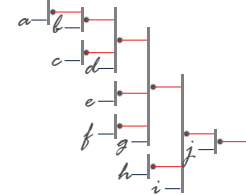
(above) **Rouge.** A visual metaphor of the interweaving character circuits and the interaction of agency in each others paths. It plays with the notions of rerouting predestined avenues through the disruption of character structures through different frequency channels and feedback.

Modulators. Are networks egalitarian or are there new modes of control entirely native to networks, modes that are at once highly centralized and dispersed, corporate and subversive? The new panoptic eye is now working in computational time; Sovereignty has not diminished, but has adapted. Tracking and surveillance devices have been deployed and are constantly improved. The reckless use of networked mediums by individuals expedites this process.

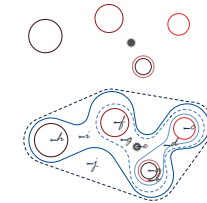
Network Models. Deleuze, in *Postscript on Control Societies*, defines two historical periods of society as the 'disciplinary societies' of modernity followed by the 'societies of control' that inhabit the late twentieth century.

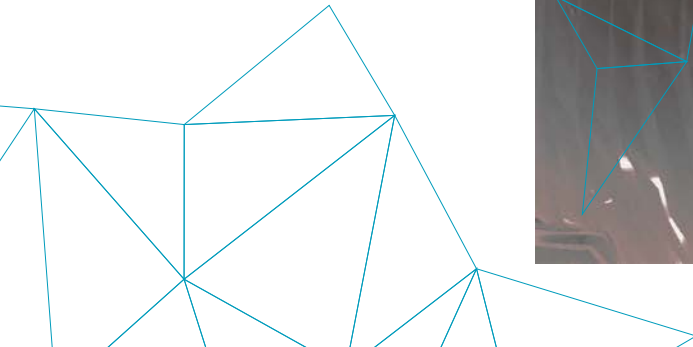
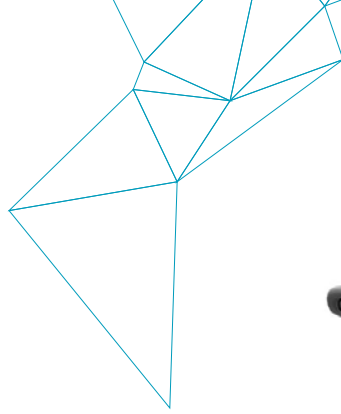


Disciplinary societies. Formed by nodal boundaries in a linear hierarchical structure. They grow out of the rule of the sovereign with members always moving from one institutional enclosure to another—home, school, work, etc.



Societies of control. Formed by nodal boundaries in an overlapping hierarchical structure as a metaphor of the protocols of information transfer. Virtual and physical exists concurrently forming hybridized spaces of enclosure.







Thank you for your time.

To provide feedback or to view
more work, please use the
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