PORTFOLIO
Zeyin (Steven) Fei
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Steven Fei

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The role of city halls triggers the question about how these government buildings can evolve in the 21st century. Despite the fact that city halls usually provide public services, for most of the times they are cut off from the social and political life of the public. Through transforming and assuming alternatives for the space of governance, the project reconsiders the emblematic and constituent elements of the halls to the society.

Queens has become one of the most diverse counties that hosts a wide range of residents from various cultural backgrounds. Within such kaleidoscopic environment of diversity, Queens Borough Hall was constructed in 1940s with a low cost of $1.6 M. Though featured with highly diverse residents at the center of Queens, the area is still losing its popularity. To revitalize the heart of Queens, the project expands the architectural capacities of Queens Borough Hall with a series of arenas to re-energize the site.

The proposal carves out a wedge void at street level to maximize its openness towards the public. Thereby, an elevated volume is created and more programs are proposed within the massive form.

**ELEVATED PRISM**

The upper levels consist of stepped floors connected by a series of experiential stairs that guide circulations and views towards different spatial volumes. The original borough hall only provides limited public services like post office and marriage registration. The proposal brings a wider range of programs for community service, cultural activities, and public care to the residents. Exhibition space, meeting rooms, performance rooms, library, team building space, and healthcare rooms are included in the design to encourage interactions with different residents.

A central void is also carved from the upper volume to introduce more sunlight deeper into the areas at street level. The slight upward slope of the ground floor contrasts with the adjoining overhanging structure, gently inviting the public to gradually enter and explore the elevated volume above ground. The council chamber is set in juxtaposition with the central arena to create the condition in which decision-makers have to listen to the public’s voice while making policies.
WEAVING IN THE OVERHANG

Some of the circulation area provides ample space for public engagement. Their orientations towards the center of the borough hall also transfer the focus down to the arenas. Arenas of different types are explored to also express the kaleidoscopic qualities of Queens. The arrangements and plannings create different spatial experiences too. In addition to the 3 arenas accessible from ground level, another elevated arena greets the advent of the audience when they first arrive at the upper volume. Walking further up, programs for civic, cultural, governmental, and recreational uses are combined together to foster communications and collaborations.

ARENAS IN THE SHELTER

3 arenas are directly accessible from street level surrounded by a ring of outdoor gardens. The main staircases leading to the upper levels are placed behind central arena so that when people are getting up to the elevated floors, they will again have the opportunity to witness the ongoing activities around the arenas. Echoing the kaleidoscopic quality of Queens, different material and texture combinations are also explored to convey the vitality and diversity of Queens.

1. Outdoor Garden
2. Sunken Arena
3. Main Entrance to the Upper Levels
4. Central Arena
5. Sheltered Arena
6. Sunken Garden
7. Parking Lot Ramp
Grecale 2180
SOCORRO, SAO PAULO, BRAZIL

Environmental challenges are projected to be more frequent and severe in year 2180. However, with the advancement of technology, architecture is equipped with more resilient strategies to confront such ecological issues and to help with urban regeneration. A dystopic utopia is proposed as an alternative for what and how architecture can evolve into.

Situated in a network of wetland park, the architecture actively responds to the prevailing northeasterly wind and proposes a dynamic experience for the audience to act as part of the airflow particles to navigate through the institute. The sleek aerodynamic profile converts accelerated airflow into energy and purifies the surrounding air quality by expanding the exposure with operable photobioreactor panels.

Equipped together with the climate devices, the project creates an intimate experience for the audience to engage with the architecture to form a symbiotic relationship between future architecture and the reconstructed urbanscape.

Relationships between carbon footprints and environmental issues are explored to inform the urgency for ecological restoration. Moving beyond constructing single plant devices to mitigate such challenges, actors across the whole urbanscape at all scales will be integrated as a living entity to gradually regenerate an amicable and resilient future.

The research institute is located in a wetland park and is working closely with wind and sun. In 2180, it is projected that the water level will rise on an average of 13 ft and most areas of the site will be changed into wetland and wildlife parks as buffers against the issue of flooding or storms. The parks and green areas create a network of sponges to absorb and store water. Small singular warehouses and residential buildings will be merged into large structures with sustainable features for energy or food production facilities for a self-sustaining lifestyle.

A climate device is proposed at a medium scale to integrate environmental factors such as wind, sun, and soil. Such elements are combined with photobioreactors to provide cleaner air and extract toxins from the soil. To reinforce the symbiotic notion, the climate device also includes TPU membrane allowing people’s walking, jumping, and sitting as the driving force to pump more air into system which increases efficiency.
AERAINMA (AROMA)

The facade of the research institute harnesses wind, sunlight, and rainwater. The triple-layered algae facade panels are operable structures that can open during the day to expand areas to receive sunlight and provide an adequate shading down below. When the panels are expanded, the PTFE membranes are extended to fill the gaps between the panels and the fixed structure. They will also act as rainwater conductions that later leads rainwater to the algae photobioreactors or the water storages. In addition to the operable algae panels, the rest of the facade consists of titanium dioxide integrated solar panels to generate electricity and hot water arrays and at the same time cling wastes in the air to the building facade. Triangular patterns of slits are also designed on some areas of the facade to let airflow into the algae pipes.

Spatial Vitality Aroused by Tangible Structure

DISPERSION - CONVERGENCE

The architecture consists of 2 wings that are connected together to create an inner courtyard. The truss structure is working both with the exterior facade and the interior programming to create a spacious and immersive experience. Atriums are created across floor levels and special public programs such as conference auditorium, vr experience hemispheres, libraries are also integrated into the design. The north and west wing welcomes public participation and is also the place where most classrooms are located at. The central transitional zone is arrayed with offices and administrative rooms and the south wing is more private for research purposes.

Changing gradients of the zones determined by the transparency of programs are weaved by the continuous walkways and staircases, relating to a similar experience of the airflow along the outer facade of the architecture. Audience act as such airflow members explore the freedom of the interior space by following the continuous curvature of the roof, leading to different conversations and interactions among different groups of users.
Facing the risk of flooding and mental health issues of Flushing residents, the project proposes an alternative for the site to become a healing garden that incorporates a theater, a “village” of healthcare units and a boathouse with wetlands, habitats, farming lands. The proposal hopes to invite more residents from the Flushing community by hosting growing events to both heal the local residents and improve the waterfront ecology. The original U-Haul building is turned into a laboratory for indoor growing and experimentations.

The north end of the site is bounded by the existing U-Haul building, and we decide to renovate the facade and reuse it as our agricultural management and research center. The south end is our healthcare village. The second level of those buildings provides an open and panoramic view of the site. The huge sloped area in the middle is our collective farming land. The soil at the site now is highly contaminated. The bioswale garden close to the street helps mitigate stormwater runoff. The two plots next to the farming facility help experiment with suitable vegetations and crops for soil remediation. The main farming lands in the middle are further divided into smaller plots so that the community members can claim and take care of them.

The study of Long Island City along the 7th line shows an uneven distribution of population and wealth caused by gentrification. Similar to our site, the 7th line also comes from underground to above ground, and the rails transition from parallel to overlapping at different levels. Most of the high rises are constructed along the 7th line, and the addition of the amenities, healthcare, and open space are forming a network to reinforce the gentrification by excluding people who cannot afford the rising housing values. Because of its proximity to Manhattan, the layout of Long Island City is getting more aligned with the Manhattan grid. The similarities of both the MOMA, the Citigroup building, the Chrysler Building, and the zoning of the mid-to-high rise residential buildings create a symmetrical pattern along the axis of the river. The analysis of LIC gives us a negative example of urbanization and thus we hope to suggest an alternative for the public and create a space with the Flushing characteristics.

Facing the risk of flooding, the topography of the site is moderated to be more resilient against natural disasters. Kayaking represents a proactive action to fight for environmental justice and waterfront rehabilitation. Though the theater and the botanical garden will become submerged, the top of the structure still permits a possible connection for to the main site and provides a relatively stable and proper space for public gathering.
HEALING PLACE FOR ENVIRONMENTAL JUSTICE

A theater exists discreetly among the plants. The theater is also connected to a botanic garden that provides a space for people to both witness different types of vegetation growing and to observe birds inhabiting from the sloped roof. The perforations on the roof create a niche-like area for birds to hatch and breed. Wetlands and forests are considered as buffers. The habitats are created to attract birds and animals (such as Canada goose, blue jay, and European starling) to come back and repopulate the site and restore local ecology. Pollinator pathways are also proposed to encourage people’s connection with the environment such as bees and flowers.

ENGAGEMENT WITH LANDSCAPE

The programs are arranged and woven based on the slope of the landscape with the theater structure to create a walkable condition that gently ascends and descends. The kayak docks are arranged along the branch of the waterway and part of the riverside. Our design hopes to invite the public deeper into the site and create possibilities for their circulation flow to meet with people coming for the theater or healing events at the waterfront. Besides, it’s also a satellite site for the existing Guardians of Flushing Bay who is a coalition of human-powered boaters, park users, and local residents advocating for a healthy and equitably accessible flushing creek.
Seminar of Section

Type: Commercial
Work: Individual
Time: 2023 Spring
Duration: 6 weeks
Instructor: Marc Tsurumaki
STALL & PATH OPTIMIZATION FOR BRYANT PARK

Bryant Park has become a popular place for public activities. In order to encourage more flexibility in circulation and maximize exposure to the market stalls distributed in the park, the project aims to test out possibilities to balance the locations of the stalls of various capacities and sizes and propose convenient circulation routes for the pedestrians.

Through the iterations of circle packing and experiments with shortest paths to navigate within and through each boundaries for the stalls, a primary map for locating each stall and scheme for the orientations of these stalls to maximize orientations towards the visitors are laid out.
Located in Gramercy Park neighborhood in Manhattan, the 21-story building provides 84 condominium apartment units to the public. The building's 24' cantilever starts from the 6th floor and is punctuated with alternating fenestration pattern combined with consistent limestone cladding. Following the setbacks under the C2-8A Zoning district rule, the building provides the residents at top level units to have access to the terraces.

**Zoning District:**
- **Land Use:** Mixed Residential & Commercial Buildings
- **Lot Area:** 4,950 sq ft
- **Lot Frontage:** 66 ft
- **Lot Depth:** 75 ft
- **Number of Floors:** 21
- **Gross Floor Area:** 89,730 sq ft
- **Total # of Units:** 82
- **Residential Units:** 81

**Commercial District Envelopes**

Sky exposure plane envelopes are distinguished by the height permitted by the street and the determinants of the plane, which also varies based on the adjoining street width. An alternate envelope would be available for areas where an open area is present along the street line. The bottom drawing shows these differences for a medium density envelope. Commercial towers in high density districts may override this plane.

**Basic Sky Exposure Plane**
- Narrow Street: 3.5' to 8.5' width
- Wide Street: 15' to 15' width

**Alternate Sky Exposure Plane**
- Narrow Street: 5' to 5.5' width
- Average: 10.5' to 13' width

**Rethinking BIM**

Type: Residential
Work: Collaborated with Ze Meng, Annie Yu
Time: 2022 Fall
Duration: 12 weeks
Instructor: Joseph Brennan
Paneling

Standardizing panels to get the lowest cost

Tiling

Calculating the lowest cost of using the most slate
Outdoor Garden Sunlight Analysis

Spring Equinox
- 90% Direct Sunlight
- 30% Shadow
- 25% Shadow

Summer Solstice
- 90% Direct Sunlight
- 5% Shadow
- 10% Shadow

Autumnal Equinox
- 85% Direct Sunlight
- 30% Shadow
- 25% Shadow

Winter Solstice
- 15% Direct Sunlight
- 30% Shadow
- 15% Shadow

Radiation Map
- Level 19
- Level 17
- Level 11
- Level 9
- Level 6

Annual Glare w/o shading

Radiance Rendering at Selected Time of Day
- June 23rd
- Sept 23rd
- Dec. 22nd
- March 12nd
- March 23rd
- Sept. 22nd
- June 22nd
- March 22nd
- Dec. 22nd
- March 23rd

Outdoor Garden Sunlight Analysis

L.6
L.9
L.11
L.17
L.19
L.6
L.9
L.11
L.17
L.19
L.6
L.9
L.11
L.17
L.19

Team Echo (Annie Yu, Steven Fei, Ze Meng)
Indoor Daylight Availability Analysis

ASE analysis w/o shading

ASE analysis w/ shading

Daylighting Compliance w/o shading

Daylighting Compliance w/ shading

Level 19

Level 17

Level 11

Level 9

Level 6
Optimization & Improvement Analysis

Initial Design Adjustment

- Level 6
  - Recreation

- Level 9
  - Sky Garden

- Level 11
  - Meeting Space

- Level 17
  - Children's Play Area

- Level 19
  - Outdoor Bar

Optimized Design Strategy

- Level 6
  - Recreation

- Level 9
  - Outdoor Bar

- Level 11
  - Meeting Space

- Level 17
  - Children's Play Area

- Level 19
  - Sky Garden

Average Rent per sq ft:

- Initial Design: $176
- Optimized Design: $246.4

Total Rent Revenue:

- Initial Design: $60,337,671.3
- Optimized Design: $65,367,862.1

Profit Increase:

$65,367,862.1 - 60,337,671.3 = $5,030,190.8

Average Increase of Value per sq ft:

- Initial Design: 0%
- Optimized Design: 40%
Decolonizing the Architectural Imagination

Abstract

This paper focuses on the exploration of architectural strategies that address the theme of localness. Specifically, it examines the design of the Suzhou Museum West by GMP Architects and compares it with the Suzhou Museum by IM Pei. The analysis delves into the architectural and landscape design choices that reflect the cultural and historical context of Suzhou, China. The paper argues that while the Suzhou Museum West attempts to reconnect with the local environment through the use of traditional materials and forms, it falls short in creating a truly authentic cultural expression. Instead, the design seems to be too rigid and fails to fully capture the essence of the local heritage.

Reflections from Similar Projects by Other Architects

The article references the work of other architects who have also attempted to incorporate local cultural elements into their designs. For instance, the Ningbo Historic Museum by Amateur Architecture Studio is discussed as an example of how design can be adapted tofit the local context. However, the paper argues that the Ningbo museum still falls short in fully integrating with the site, suggesting that there is still much to be learned about designing in a culturally sensitive manner.

Conclusion

In conclusion, the paper recommends that designers must go beyond superficial imitation to truly engage with the local culture. This requires a deep understanding of the local linguistic and architectural traditions as well as the ability to creatively interpret and transform these elements in a way that is both authentic and meaningful. The paper concludes by calling for more research and dialogue on this topic, in order to develop a more robust and effective approach to designing with localness in mind.

Type: Architectural Critic

Work Individual

Time: 2022 Fall

Duration: 12 weeks

Instructor: Ulf Muazzar
In addition to the environmental and aesthetic implications of the project, the Floating University Berlin Project also promotes sustainable urban living by encouraging a more localized approach to food production. By utilizing flat rooftops and unused urban spaces, the project aims to promote the growth of small-scale urban gardens and rooftop farms. This not only benefits the local community by providing fresh produce but also contributes to the reduction of carbon emissions associated with long-distance transportation of food.

The project also highlights the importance of collaboration and interdisciplinary approaches in addressing urban sustainability challenges. Through its partnerships with local authorities, businesses, and community organizations, the Floating University Berlin Project showcases how various stakeholders can work together to create more resilient and sustainable urban environments.

In conclusion, the Floating University Berlin Project is a testament to the potential of creative and innovative solutions in addressing contemporary urban challenges. By reimagining the role of public spaces and buildings in cities, the project offers a model for rethinking the future of urban living and sustainability in a way that is both practical and inspiring.
Arguements

Social and Political Responsibility of Architecture – A Collection of Thoughts from Lectures by Iwao Weizman and Frida Escobedo

The issue of architecture that I will be analyzing concerns with the social and political roles of architectural design selected from my questions from week 2 for Iwao Weizman’s lecture. Since my question is relatively broad to outline, I will be specifying three responsibilities and capacities of architecture by generalizing the discussions from the workshops and lectures. Through deconstructing the writings of Josephine Baker’s of her work, I want to explore the narrative of equality and unity.

Weizman’s methodology of tracing the materiality through 2 concepts—desk and data—reflected the intertwined problem of colonial and imposing design strategies across the globe. His interpretation of history through unfurling material reveals what political role architecture should take to avoid the same mistake in the contemporary global scale. Weizman’s presentation further led to investigate the power relation between states and other actors, which allowed him to question the continuous conflict in the Middle East. Some of the material examined also reflected the obligations of disputable collaborations with Nazi Germany to transfer Jews and material assets. The analysis, which evaluated not only architectural material but also bank accounts of the “company,” appalled us in the possibility of material, capital, and political transfer entailed into the development of modernist architecture. The Max Lindig House presented in the lecture recorded different layers of material history related to the political and economic entanglement of the house as a house of the Weimar city’s complex history. Weizman illustrated the story of the residents with those of the Jewish students from Bauhaus who were forced to move to Mandatory Palestine. It implied the growth of Tel Aviv in 1920s to 1930s with the import of building materials and structures from Nazi Germany and situated beyond the border of Palestine to the development of Bauhaus modernism across the Sykes-Picot border line. Weizman’s alignment as a historian with contemporary digital data techniques discreetly unravelled the diagrams of modern architecture and dynamic movement of modern architecture forced by politics. To rebuild and restore the Kositsa remains, the perspectives of the marginalized, displaced, and oppressed voices that used to be unheard were now revealed through architecture. To position architecture’s role in the contemporary reality, Weizman answered to consider how and where architectural material could be assembled and the political regimes behind it. Through emphasizing the consciousness of design with buildings to document conflicts, complexity, and different historical narratives, we further reminded me of architecture as an active agent to echo the physical realm and experimental sheltering for those are enduring political injustice and misconduct.

The migration of Bauhaus implied the practice of colonial modernism spreading across the world through the challenges of political enforcement and hierarchical authority. Such complex trajectories were also shown in the entanglements of Josephine Baker’s fight against fascists and issues of identity and subjectivity. The alignment with the biospheres led to Loo’s design for her house. Studying from Adolf Loos’s design of her house as a media, we were able to ponder Loos’s personal life and his design choices because of his hearing disability. Although lacking of detailing and program specificity, the different spaces of a spectrum of sound qualities were purposely incorporated into the abstract design. The design of such room intrigued me for the capabilities to host various types of domestic, social, and political events. Weizman’s analysis discussed in the workshop and lectures presented the domestic work of Adolf Loos and the backgrounds and resulted revealed both the material evidence and the stories behind the secret wars of Josephine Baker. Her illustration and attitude to the universal subject of modernist architecture led me to weigh more considerations of the qualities of the audiences to architecture beyond the architect’s design choice. Relation Loos’s design with the universalizing aspect of Bauhaus movement into colonial and imposing design strategies, Weizman demonstrated the sensibility to understand the cultural and social elements specific to site and the conflicts and stories behind building materials and components to avoid the mistakes of modernism. Thus, personal experiences of design could be more linked to the socially constructed and the narrative of future past and projected future.

Different approaches to care about the social hierarchy and political complexities across social classes were shown through Frida Escobedo’s lecture. From an architectural designer’s perspective, Escobedo examined the spaces for domestic labor workers specifically to illustrate the inequalities in Mexican modern architecture. While Weizman was using digital techniques of the building material to uncover the visible and invisible spaces of history and reality in past conditions, Escobedo explored such invisibility through a series of focused plans of houses and communities by other Mexican architects to amplify the disappearing of living conditions among different groups of users. Raising the question about the duality of visible and invisible, she highlighted how the spaces of domestic labor were consciously concealed by Mexican modernist architects. She also mentioned recent political changes in Mexico in 2008 that change the balance of forces involved in domestic labor composition and the complete disruption against them. She directly encountered the problems of the gendered, classed, and raced configurations in architectural design and encouraged us to deal with such division of social and economic relationships through architectural design. In regards to the question of how the social role of architecture should create chances of connection and communication among different social classes, Escobedo pointed out the importance of awareness to make architectural interventions to recognize and redistribute the problems through circulation flows, structural and textural consideration, and materiality of epiphanies and transparency to move the “hidden spaces” into the public realm.

Aside from examining the lab of concern for domestic “reproductive” labor workers among some Mexican modernist architects, Escobedo managed to incorporate both empathy and experience of subjectivity to create spaces adaptable to multiple uses and the spatial and social boundaries. The interview and analysis about Escobedo’s Serpentine Pavilion discussed in the workshop highlighted her intention to create “temporal without being ephemeral and permanent without remaining in place.” Through her Serpentine Pavilion which Weizman’s attention to the present and the future, Escobedo highlighted her intention to create more spaces adaptive to multiple uses and to blur the spatial and social boundaries. The alignment with the Prince Micahel reminded me of her intention to position architecture in a geopolitical stance and the capability of architecture to encounter issues of global transfer of assets, capital, and sociocultural factors. By addressing the physical distance between sites of labor and manufacture and sites of consumption, she guided us to think more about multi-scalar cultural, material, and territorial implications of architecture.

Weizman and Escobedo had strong consciousness to use different aspects of architecture (materiality, programming, and geopolitical connections to physical and cultural transformation) to capture place and time and uncover conflicts and narratives across borders and actors. The beauty of modernist spaces couldn’t exist without the separation of discrimination, economic labor, or coercion by political regimes that put those in drudgery, precarity, and bad conditions which were usually invisible to the rest of the audience. Recognizing the failure of modernism in its neglects of sociocultural environment and diverse range of audience types, both architects addressed the ethical responsibilities to reveal what political driving force was behind the formation of architecture and whether the architecture held the capability to serve for good causes collectively. Though neither of the architects responded directly to the question of what extent to punctuate on the flexibility in the programming of the space, Weizman and Escobedo called for transforming and blurring the boundaries to create more spaces qualities of “circulating exteriority,” which provided chances for collectivity and equality.

Architecture used to be a passive device forced by political regimes or designers. Weizman and Escobedo motivate us to consider architecture proactively to participate in global geopolitics and stay genuine to the specific social context and milieu. Architecture is not a permanent monument but cultural landscapes that echo the collective memories and histories and project towards a humanistic narrative of equality and unity.

Works Cited