Towards a Bird City

Manhattan, New York
GSAPP Spring 2023
Instructor: Karla Rothstein
Team member: Eunyoung Lee
The entangled environment of birds and cities possesses opportunities for a new collective urban imagination that redresses the negative impacts of anthropocentric urban environments. We challenge the notion that cities are inevitably destructive to the life of birds. Through analytical mapping of found dead birds, 4WTC was chosen as an initial site of intervention. The mapping of different birds’ nests reveals a correlation to their food resources under a height of 75’. The project proposes to reintroduce the 75’ vertical biome into 4WTC by strategic removal and a lattice system that support biodiversity crucial to the sheltering, foraging, and nesting of non-predatory birds. Through the prototypical intervention of 4WTC, design tactics could be translated to other towers. Most importantly, the design logic derived from a bird’s perspective is a forerunner to reconsider a series of human building inventions, ranging from a new skyscraper to regulation of building facades, yielding productive consequences to humans and birds alike, at the urban scale, body scale, and temporal / experiential scale.
Bird Species

1. Red Tailed Hawk
2. Cooper's Hawk
3. Chimney Swift
4. Eastern Phoebe
5. Great Crested Flycatcher
6. Eastern Kingbird
7. Northern Rough-winged Swallow
8. Barn Swallow
9. White-breasted Nuthatch
10. House Wren
11. Winter Wren
12. Golden-crowned Kinglet
13. Ruby-crowned Kinglet
14. Swainson's Thrush
15. Hermit Thrush
16. American Robin
17. Gray Catbird
18. Northern Parula
19. Yellow Warbler
20. Chestnut-sided Warbler
21. Magnolia Warbler
22. Black-throated Blue Warbler
23. Yellow-rumped (Myrtle) Warbler
24. Black-throated Green Warbler
25. Palm Warbler
26. Blackpoll Warbler
27. Black-and-white Warbler
28. American Redstart
29. Ovenbird
30. Northern Waterthrush
Window strike per building based on types

10~12 story  high-rise

Eastern Red Cedar  Servicaberry  Firethorn  Staghorn Sumac
Note: Most of the species concerned in this project are "secondary cavity nesters," who use existing cavity instead of making their own cavities.
Section of Biomes at Higher Levels
Post Office for the Gig Workers

Manhattan, New York
GSAPP Fall 2022
Instructor: Laurie Hawkinson
This project speculates the future of USPS in Manhattan, New York. The significance of a post office is more than a service, it protects and ensures the movement of substances that people rely on. From handwritten letters to commercial packages, the scope is expanding as the role of USPS strives to be emblematic of its time. Third party food delivery service has become a integral yet problematic part of big cities such as New York. Its hidden environmental costs and socially marginalized gig workers present a urgency for intervention.

This project proposes that USPS will replace current private companies to provide food delivery services with a reusable food container program. The current gig workers will become a new fleet of E-bike driver for USPS and deliver food as well as small packages. The existing Murray Hill USPS Annex is chosen to demonstrate the potential of USPS to become a social hub for delivery drivers, office staff, and the local community.
FC stands for food container. Based on the estimated amount of take-outs and cleaning capacity of a commercial dishwasher, each zipcode would need only one commercial dishwasher to clean all food containers used for takeouts from that zipcode in four hours.

Annual waste from disposable food container in NYC can cover the Central Park to 3'}
1/64" Model 03: Circulation & structures

1/32" Model 05: Form follows circulation

1/16" Model 06: Form reveals circulation

1/32" Model 07: A plug-in

1/64" Model 08: A roof that draps over
1. Delivery worker entrance
2. Public entrance/exit
3. Loading
4. Sorting
5. Drop-off desk
6. FC kiosk
7. E-bike station
8. Cafe
9. Basketball court
10. Delivery worker exit
1. Main E-bike station
2. Sorting
3. USPS counter
4. Storage
5. FC kiosk
6. Public lounge
7. Seating towards lower court
The Tale of Dougong

Siteless structural prototype
GSAPP Summer 2022
Instructor: Elias Anastas & Yousef Anastats
Dou-gong is one of the oldest and most recognizable architectural elements in wooden structures from east Asia. Instead of fetishizing Dou-going as a cultural relic, this project investigates its potential in generating a unique architectural typology based on its flexibilities as a component and structural principles as a system.

My translation of Dougong utilizes a reverse inclined-arm-leverage system to balance the interior weight with the heavy arms on the exterior, opening up new possibilities for formal expressions. The interior weight transfers to the primary brackets through secondary brackets, making the periphery the primary system for gravity as well as lateral forces. The reasons for choosing a skyscraper as an applicable typology are two folded: exploring Dou-gong’s primary function as a lateral system; problematizing capitalist efficiency embedded in the ideology conception of conventional skyscrapers.
Scale test

Tolerance test

Assembly method test

Glueless Dougong-beam detail

Glueless Dougong-column detail

Glueless model foundation detail
Happy Hour
San Francisco, CA
GSAPP Fall 2022
Techniques for the Ultrareal Elective
Instructor: Phillip Crupi
Team:
Wesley Kinsey
Tim Chen
Harlan Luo
This technical project describes an airtight and watertight enclosure of a 13-story building occupied by an art gallery in the city of San Francisco.

The design of the system takes inspiration from the painting *Lines from Points to Points* by Sol Lewitt and translates the ideas of “wrapping” and “lineweight” into a composite curtain wall system that deploys cables as a secondary system for lateral load on ICUs that are only dead loaded to floor slabs at two points, which helps the system to span a double height space without adding a beam. On the outside, the design accentuates certain “lines” via different exterior conditions on mullions: aluminum mullion caps accentuate certain vertical lines while drop-hook perforated aluminum panels are translated from the diagonal hatches in the original drawing.