

FEIBALAN 2019 - 2020 Graduation Portfolio MSAAD | Columbia GSAPP

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WOOD FACTORY

Columbia University GSAPP Advanced Studio VI

LOCATION: Brooklyn, New York DURATION: Jan. 2020 - April 2020 INSTRUCTOR: Mimi Hoang PROGRAM: Wood Factory PARTNER: Xueqi Hu ROLE: Conceptual Design, 3D Modeling, Floor Plan Drawing, Rendering, Diagrams

Wood as A Metaphor

In our factory, we're looking at wood in the waste stream. About 35% of the wood cut for making furniture and building materials is wasted every year. Most of the wood waste are burned or go to landfills. As the popularity of disposable flatpack furniture has risen, the amount of furniture taken to a landfill is accelerating.We're going to recycle different kinds of waste wood in the city and make furniture of them.

The factory as a whole can be seen as stacking of several wood bars just like traditional wood storage method. It thickens the coastline and builds relationships with site in both vertical and horizontal directions.







WOOD WASTE

About 35% of the wood cut for making furniture and building materials is wasted every year. Most of the wood waste are burned or go to landfills. In the meantime, as the popularity of disposable flatpack furniture has risen, the amount of furniture taken to a landfill is accelerating.





Precedent 02 / IKEA

Time: 20th Century Scale: World-wide Factory Wood Source: World-wide **Product:** Flatpack Furniture Labor: Human & Machine



Precedent 01 / THE SHAKERS

Time: 19th Century Scale: Community Wood Source: Nearby Forest **Product:** Shaker Furniture Labor: Human









This comic shows the flow of the material and the manufacturing process.



LOCATION

Our studio site is the Bush Terminal, which is located on the Brooklyn waterfront in Sunset Park. Built between 1905 and 1925, it was a massive and revolutionary intermodal shipping, storage, and distribution complex. It's part of a larger mayoral initiative aimed at retaining the city's manufacturing, known as Made in New York. Our project will reconsider the entire Bush Terminal complex and the waterfront area, and envision a new future for it as a center for new industries.



ARCHITECTURE CONCEPT





SITE PLAN



GROUND FLOOR PLAN



AXONOMETRIC DRAWING



MICROCLIMATE ANALYSIS







Studio Woodworking

Gallery





RE-THINKING RISK

Columbia University GSAPP Advanced Studio V

LOCATION: New Orleans, Louisiana DURATION: Sept. 2019 - Dec. 2019 INSTRUCTOR: David Benjamin PROGRAM: Flood Resilient Community INDIVIDUAL WORK

A Re-evaluation of Flood Risk

Due to the change of climate, many parts of the world are experiencing natural disasters. Disaster risk evaluation and management is siganificant in mitigating disaster loss. Among all kinds of disasters, flood is one of the most serious ones due to the rising sea level and those low-income communities always get the greatest devastation.

The US government should take the lead and cooperate with Climate Design Corps to re-evaluate flood risks. New communities would be created with architects and residents where they become developers and owners through collective action and have a better adaptation to the challenges of flood disasters.









DISASTERS IN LOW-INCOME COMMUNITIES

Due to the change of climate, many parts of the world are experiencing natural disasters. Disaster risk evaluation and management is significant in mitigating disaster loss.

Low-income population tend to be at greater risk of disaster and take longer to bounce back from disasters. The reasons of the high risk relate to various aspects. Low-income people are more likely to work in sectors highly susceptible to extreme weather events, and live in houses that are less safe. They have no regular use of technology or enough support to recover from disasters.

Among all kinds of disasters, flood is one of the most serious ones due to the rising sea level. In this project, I want to rethink the flood risk in those flooding communities and develop a series of new strategies to reduce the disater risk.

NEW STATEMENT

 \cdot As a country responsible for 1/3 of carbon emissions, the United States government should take the lead in developing policy and providing technical support to reduce the impact of carbon-related climate disasters.

· To address inequalities in employment and housing, Climate Design Corps should work with government, architects and communities to develop disaster resilience strategies to help residents adapt to the challenge of climate change in a variety of ways.

• The ultimate goal is to reduce the disaster risk of low-income communities.

FEMA FLOOD MAP ON SITE



NEW FLOOD MAP



LOCATION



NEW FLOOD RISK PARAMETERS



CLIMATE CORPS RE-EVALUATION

The location is Lower 9th Ward in New Orleans. It has always been a poor community. In 2005, Hurricane Katrina destroyed the majority of this city and Lower 9th Ward suffered a heavy loss. As the climate continues to warm, the risk of flooding in the region is likely to increase. Rethinking risk is the first step to develop more effective flood resilient strategies.

Currently, flood risk of is usually determined by FEMA Flood Map. It shows 3 geographicalparameters: flood zones, flood plain boundaries and based flood elevation. But it doesn't show any human elements or housing parameters which should be taken into consideration.

So I think the Climate Design Corps should re-evaluate flood risk, considering residents conditions such as economic capability, insurance condition and housing conditions such as plan layout and structure stability.

In this new evaluation system, each parameter is divided into 3 levels and 3 colors, red, orange, yellow are used to illustrates the flood risk. A new climate design corps flood map comes out. It's a combination of the site map, the FEMA flood map and the re-evaluation results.

NEW FLOOD RISK LEVELS



COMMUNITY VIEW

There will be 3 kinds of zones with different types of housing in the new community. Red people means Climate Design Corps who evaluate the risk and help to counstruct and the black people means residents. With all kinds of public buildings an housing, the area will become a community where residents become developers and owners through collective action.



LOCATION

Currently, the site which is near to the Industrial Canal has a low density and a high flood risk, and lacks basic infrastructures. There are 4 steps to solve the problem. Firstly, the climate design corps work with architects to rezone the area by flood risk based on new map and densify the community. Then they create multi-level roads system 2 main roads to connect basic infrastructures. The Corps will also redesign the existing levee and activate the river bank with a wetland park.







Low Risk Unit (One Storey)



Low Risk Unit (Two Stories)



Medium Risk Unit



Scale: 7 families (2-4 people) + 1 shelter Household Expense: \$\$ Government Subsidy:\$\$\$



SYSTEM

The whole process involves 4 main participants and need kinds of labors. Led by government and climate design corps, architects can help to design housing and local residents fully participate in it.









HOUSE SECTIONS DURING FLOOD







STORY FAIR

Columbia University GSAPP Advanced Summer Studio

LOCATION: Canal Street, New York DURATION: June 2019 - Aug. 2019 INSTRUCTOR: Tei Carpenter PROGRAM: Story Market PARTNER: Xutian Liu ROLE: Conceptual Design, 3D Modeling, Section Drawing, Collage

A New Type of Market Value

In modern society, people are suffering from information explosion. They are trapped in the world of media which consist of loads of online information. Face-to-face communication is largely deprived. By designing an incubator in NYC, we try to find a new type of market value in modern society.

The Story Fair is a platform where people can exchange story for story freely and equally to get personal interactions and sharing experience. When people are physically satisfied, what is the next valuable thing we will look for. Since humans are sociable in nature, how we can get more anchored in the physical world when we are slowly detaching ourselves in the virtual world really matters.





BACKGROUND

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WORK FOR PLEASURE



Precedent 01 / The Phalanstery

Time: 19th Century Proposer: Charles Fourier Purpose: To Improve Productivity Scale: 1620 People Value: Everyone Works Based on Interests

LIVE WITHOUT RULES



Precedent 02 / AVL Ville

Time: 1995 - 1996 Proposer: Van Lieshout Purpose: To Creat A Ruleless Community Scale: 200 People Value: As Long As It's Art, Just about Anything is Possible



MECHANISM



We first listed seven types of stories. Each type corresponds to its tellers and listeners, who have diverse features and motivations. Then we analyzed the attributes of story to relate story to our space. Every type of story has many attributes including emotion, privacy and length. They can be translated to the spatial language accordingly, that is atmosphere, openness and duration. In this way, we developed space typologies for each type of story.

VALUE OF MARKET

TYPE OF STORY





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MANIFESTO

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SURROUNDINGS APPEARANCE



entrance of the market. The building's appearance should be both standing out and integrated to the environment.







Shorn Marchael



STREET VIEW



2015

2016





Private Space



Open Space & Recorindg Room





In-Between Space



Private Space





Information Hall

Open Space & Recorindg Room



ORIGINAL



PROPOSED

FACADE DETAILING

GSAPP Building Technology Elective

DURATION: Jan. 2020 - April 2020 **INSTRUCTOR:** Kevin Schorn **PROGRAM:** AT&T Building Facade Renovation PARTNER: Xinglu Zhu **SOFTWARES:** Rhino, AutoCAD

The AT&T Building is a 37-floor building that was built in 1982. It's located in 550 Madison Avenue and was designated a city landmark by New York City Landmarks Preservation Commission in 2018. Currently, the building is in a mix of office and commercial use.

Our approach is to make some changes to the façade of commercial part at the bottom to make the bottom of the building brighter and the street corner space wider.

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1. Glass Corner Detail

2. Glass Fin

3. Joint of Glass and the Ground

6. Joint of Glass and Granite

FACADE DETAILS DRAWING



MIXED PRIMITIVE ' Spheretains '

MATERIAL THINGS

GSAPP Building Technology Elective

DURATION: Sep. 2019 - Dec. 2019 INSTRUCTOR: Joshua Jordan PROGRAM: Model Making TECHNIQUES: CNC, Laser Cutting, 3D Printing, Rhino

We study fundamental properties of materials and fabrication techniques, in the combined format of a seminar and physical workshop.







ARTIFACT OR FICTION

Love Shield

In an era of pandemics, hugging became a luxury.

People conduct all kinds of social activities on the Internet, no more face-to-face conversation, no more physical contact. When they feel lonely, they hug trees to overcome isolation. However, love is more than just a few lines on a screen. It needs to be delivered through something tangible.

Love Shield can bring you back into the arms of your beloved ones, whether you are partners, friends, parents or children, put it on and feel each other again. The shield is made of a kind of highly stretchable and comfortable membrane material which can block viruses. Gloves on either side (or one side, depending on the need) are available in different materials and sizes.

It is an item of clothing that everyone has during the epidemic years, because the desire to touch and be touched is always hidden in people's nature.



RE-THINKING BIM *GSAPP Visual Studies Elective*

DURATION: Sep. 2019 - Dec. 2019 INSTRUCTOR: Jared Friedman PROGRAM: Lever House Reprogramming PARTNER: Xinglu Zhu SOFTWARES: Revit, Rhino, Grasshopper

The Lever House property is currently undergoing a change in ownership due to the financial woes of the previous owner. Many of the larger tenants have already begun vacating the building, with more tenants expected to depart in the next few years. In addition to the financial troubles, there is increasing competition to attract tenants with many other luxury office buildings popping up around the Lever House along with the new developments at Hudson Yards.

In this project, we proposed several new programs for the site that can bring in a different mix of tenants, and alter the building accordingly in order to accomodate.







located below the original floor plate. It moves horizontally through sliding rails at the bottom. The rails are made of steel and fixed on an external steel frame structure, which is fixed on the original reinforced concrete structure through bolt welding.

- Time of a Day

Number of People



EXTENDABLE FLOOR PLATE



· Floor Extension Length



FLOOR PLAN



SKETCH ULTRAREAL GSAPP Visual Studies Elective

DURATION: Sep. 2019 - Dec. 2019 **INSTRUCTOR:** Joseph Brennan Phillip Crupi **PROGRAM:** Sketch to Rendering PARTNER: Xueqi Hu, Joyce Chen, Yixuan Shi SOFTWARES: 3ds Max, Vray, Rhino

We started our projects with several sketches expressing the appearance and atmosphere. Then we used 3ds Max and VRay to achieve it









TRANSSCALARITIES

GSAPP Summer Lecture

DURATION: June 2019 - July 2019 **INSTRUCTOR:** Bart-Jan Polman **PROGRAM:** Drawing and Paper PARTNER: Sultan Alfaisal, Siying Chen, Yanan Chen

The goal of the workshops is to identify the different kinds of conflicts of a building in NYC and to trace and translate into documents the ways in which architecture becomes part of them and of their evolution.

WESTBETH ARTISTS HOUSING

Westbeth Artists Housing is a nonprofit housing and commercial complex dedicated to providing affordable living and working space for artists and arts organizations in New York's West Village. Its campus comprises the full city block bounded by West, Bethune, Washington and Bank Streets in the West Village neighborhood of Manhattan, New York City; the complex is named for two of these streets, West and Bethune.

The building was built for Bell Telephone Laboratories in 1898 and was designed by Cyrus Eidlitz. At the time Bell lab was the largest industrial research center in the United States and responsible for inventing broadcast, color TV, telephones, vacuum, and other electronics. In 1966 the building faced it first friction when Bell Lab had not only outgrown the space, but noise and vibrations from trains and traffic made certain experiments impossible, and the Laboratory decided to move out of New York city to a campus in Murray Hill, New Jersey. Due to its original use as a laboratory, Westbeth's interior spaces had double height ceilings and expansive open spaces which would later lead to the architect, Richard Meier, having a conflict with city planning over loft renovations and zoning.

Two main shareholders of the artist housing shared the same vision of the project. The National Endowment for the Arts (NEA) and J. M. Kaplan Fund. Both the NEA and the Kaplan Fund agreed on creating artist housing using an old industrial building because it was the move back then for artist to live wherever they produce, that was also supported by the end of the industrial ear in west village. Because the area was zoned as industrial, and the city of New York initially would not allow a loft live-work space a situation that was a challenged by the NEA and the Kaplan Fund. Furthermore, because of the unprecedented program, there was no architectural office that had experience with a smiler task, and initially no architect was suggested by the NEA or the Kaplan Fund. Richard Meier just opened an office in New York with just two houses in his portfolio and got selected by the National Endowment and the J. M. Kaplan Fund. Meier had been suggested by Richard Kaplan, Meier's classmate from Cornell who was also the son of J. Kaplan.

Richard Meier wanted to re-create Le Corbusier's Unite d'Habitation in New York was unsuccessful due to FHA rules and zoning law. FHA rules stated that units had to be designed for family sizes rather than catered to artists' occupation. This forced the architect to create open shared studio spaces in the ground floor, taking space from the renting income which created tension in the first years of the project between the tenant themselves. Meier's office had a concept of creating commercial spaces on the ground floor to be the main income generator for the project, which unfortunately did not turn to be a successful design at that time. It was not easy to find a tenant to rent the space in the late 60s and early 70s. The vacant space was used mostly as a gallery space for the artist.

The New York City Planning Commission created the first special zoning district to accommodate live work spaces. Westbeth is a complex of 3 buildings of which the main building is for artists' housing, the L Building used by the New School; and the I Building has artists' studios and commercial spaces. 383 live-work spaces for artists of all disciplines and their families are created in this ambitious renovation project. The design concept of Westbeth was an integrated, self-sufficient community that would provide the residents not only with loft space in which to live and work, but also with gallery space, theatrical facilities, and film, photography, and dance studios. Within such a community, artists will have a total environment in which to pursue their work, from conception to performance or display.

The Artists Housing was raised thirteen floors. The main structure was built between 1889 and 1920, providing over 600,000 square feet of floor space with high ceilings, large windows, and thick masonry walls. The building has views on three sides: West to the Hudson River, North to upper Manhattan and south to lower Manhattan. A narrow existing courtyard is the organizational focus for the whole complex. Richard Meier's Office removed one roof and two floors, allowing this courtyard to be opened to the sky to create a spatial environment in the old industrial complex. The main entrance to the building is located at one end of the courtyard, which controls the public access to the structure. The previous users of building Bell lab had the high line track cutting through it, and the train has been used to transport goods and equipment.

However, the newly planned high line by James Corner Field Operations, Diller Scofidio + Renfro, and Piet Oudolf did not extend to the artist community.

Life in Westbeth was affected by crime and a rundown neighborhood. Westbeth turned from being an artist sanctuary to a difficult place to create art. This became worse over time with 19 suicides over 30 years. Westbeth was described as "Death-beth" by one resident in her documentary video made in 1995. Another resident taped the children of long-term residents saying the "dark side" of Westbeth, including that they come across the bodies of people who had thrown themselves from the roof while walking to school. With a prime Hudson River-front location in Manhattan, its rent goes from \$900/ month studios to \$2,400/month three-bedrooms today. The competition for the apartments is fierce and there is usually a ten-year long waitlist for the applicants who had been accepted. The tenant started handing their apartments down to their children and grandchildren who were non-artists and such action obey the rule of Westbeth as an artists' community.

This neighborhood became more gentrified overtime. The busy neighborhood did require more attention from the metro system and it became one of the busiest hubs in the city of New York. The building is located a few blocks south of the high line and Whitney Museum. The building was recognized by the city for being first historical and later landmarked.

Moreover, the bohemian artists' life style that Meier imagined had become something more of a retirement home. Westbeth is struggling now with over 60% over the age of 60 and 30% over the age of 70 years old. Westbeth is considered now a naturally occurring retirement community more than an artist Housing.

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