

# PORTFOLIO

Becky Ziqing Xu

# HELLO!

# MY MISSION

Nice meeting you! My name is Becky.

Thank you for spending your time to get to know me a little better today.

You may be wondering about the pictures on my cover page. For eight years, I was training as a synchronized swimmer in Guangzhou. I represented China in Asia Synchronized Swimming Youth Championship and had won over 12 medals in national and provincial competitions.

I turned down the opportunity to become a professional athlete that would lead me to join the national team one day. However, I took away many valuable lessons that synchronized swimming taught me. Focuses and perseverance led me from being the bench player to becoming the team lead. But for my team's success, we needed to achieve the perfect synchronization through countless hours of practicing and devotion towards precisions. As one of the more experienced team members, I strived to create a unified and healthy team culture by supporting, mentoring and collaborating with my teammates.

I have developed a strong sense of responsibility towards team values and success. I focus on improving and perfecting skills and persevering through challenges.

Since high school, I came to study in the US and graduated from Cornell architecture in 2020. I have developed my passion for design through visual arts, photography, and model making. People around me often comment that I have high sensitivity towards seeing, thinking, and creating, which I use as my design strength.

I believe in the power of collaborative and socially-responsible design that, when we imagine and create together, we bring positive changes for a more equal and engaging world.

As a team-oriented and detail-oriented designer, I always contribute to my teams with my disciplined work ethic, sensible and precise problem-solving skills, comfortable with consistent iterations and at scales, leading and assisting my teammates through actions, and quick adaptation to new situations.

My subjects of study/interest also include business, sociology, and computer science.

# WORK VOLUME

## ARCHITECTURE AS SOCIAL/CULTURAL/ENVIRONMENTAL DEVICES

### 1. ONE ROOF

2018; architecture studio; with professor Maria Claudia Clemente and Francesco Isidori

1

### 2. EMPOWERING CHINESE FEMINIST VOICES

2019; architecture thesis; with thesis advisors Samia Henni and Katharina Kral

19

### 3. MADE IN BROWNSVILLE

2019 architecture studio; TEAMWORK; with professor Peter Robinson and Ifeoma Ebo.

39

### 4. THE GREEN SHED

2019; Ennead Architects (Ennead Lab)

45

## CONSTRUCTING SPATIAL EXPERIENCES

### 5. VERTICAL CEMETERY

2016; architecture studio; with professor Jim Williamson, professor Lorena del Río, and teaching assistant Mikhail Grindwald

53

### 6. CLOCK-TOWER

2018; architecture elective; with professor Marianne Hansen

57

### 7. DYNAMICS OF EARTHWORTHS

2015; architecture studio; with professor Jim Williamson, professor Lorena del Río, teaching assistant Andrew Fu

61

### 8. STRUCTURAL MODEL

2016; TEAMWORK; structure class; with professor Mark Cruvellier

63

### 9. AA SUMMER DLAB 2018

2018; TEAMWORK; AA visiting school; with tutors: Elif Erdine, Giulio Gianni, Angel Lara Moreira, Alvaro Lopez Rodriguez, Yutao Song, Alican Sungur

65

**URBAN RESEARCH**

**URBAN DESIGN**

**SUSTAINABILITY**

# ONE ROOF

FALL 2019; DESIGN STUDIO; INDIVIDUAL WORK;  
WITH PROFESSOR MARIA CLAUDIA CLEMENTE  
AND PROFESSOR FRANCESCO ISIDORI

One Roof explores a possible way to bring together the diverse communities in Detroit through incorporating the social, cultural, and natural programs, including vertical farming, markets, food court, exhibition space, theatre, etc., under one covered roof structure. The project site is next to Eastern Market, the largest food market in the U.S., and the northern part and yet to be renovated part of Dequindre Cut. I chose those programs to reinforce the economy, educate the visitors about the food production process and history of the Eastern Market, and entertain the communities.

# HISTORICAL AND URBAN ANALYSIS OF DETROIT

GROWTH AND TRANSFORMATION OF GREATER DETROIT'S URBAN FABRIC OVER TIME

BREAKING UP OF THE CITY'S GRID AT DOWNTOWN DETROIT

## HISTORY & URBAN FABRICS & DETROIT PEOPLE

DEMOGRAPHY CHANGE OVERTIME

### HOW IT ALL STARTED....



During the 19th century, Detroit grew into a thriving hub of commerce and industry. After a devastating fire in 1805, Augustus B. Woodward devised a street plan similar to Pierre Charles L'Enfant's design for Washington, D.C. Monumental avenues and traffic circles were planned to fan out in radial fashion from Campus Martius Park in the heart of the city. This was intended to ease traffic patterns and trees were planted along the boulevards and parks.



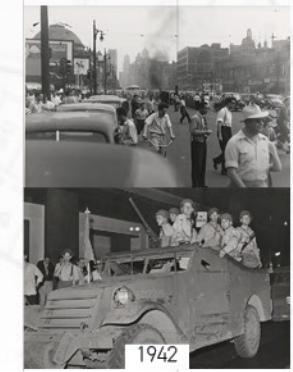
Erie Canal was incredibly influential on the history of Detroit. The canal allowed settlers to travel to Michigan much more easily and quickly than a journey over land.



Detroit's central geographic location and access to the Great Lakes and railways gave automobile producers easy access to capital and markets, making Detroit an ideal site for many automobile manufacturers' headquarters.



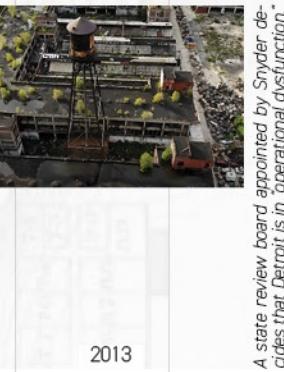
Following World War II, the auto industry boomed and suburban expansion took place. The Detroit metropolitan area developed as one of the larger geographic areas of the United States. Immigrants and migrants have contributed significantly to Detroit's economy and culture.



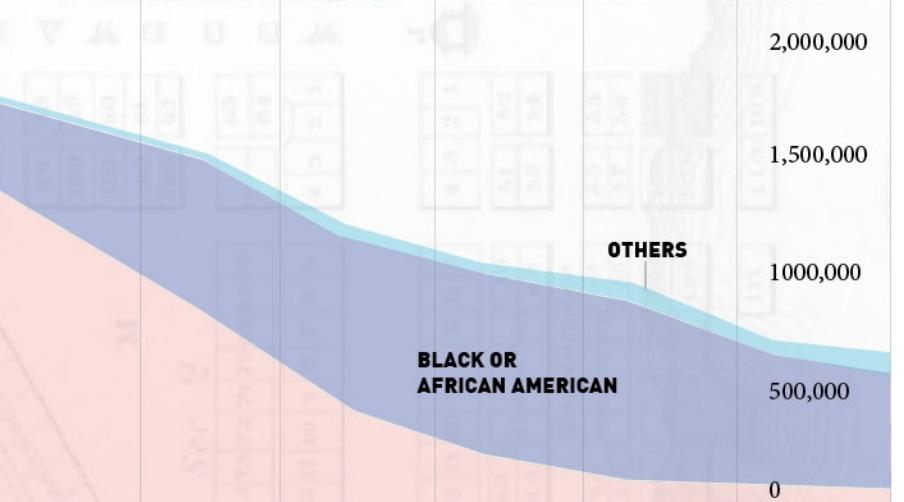
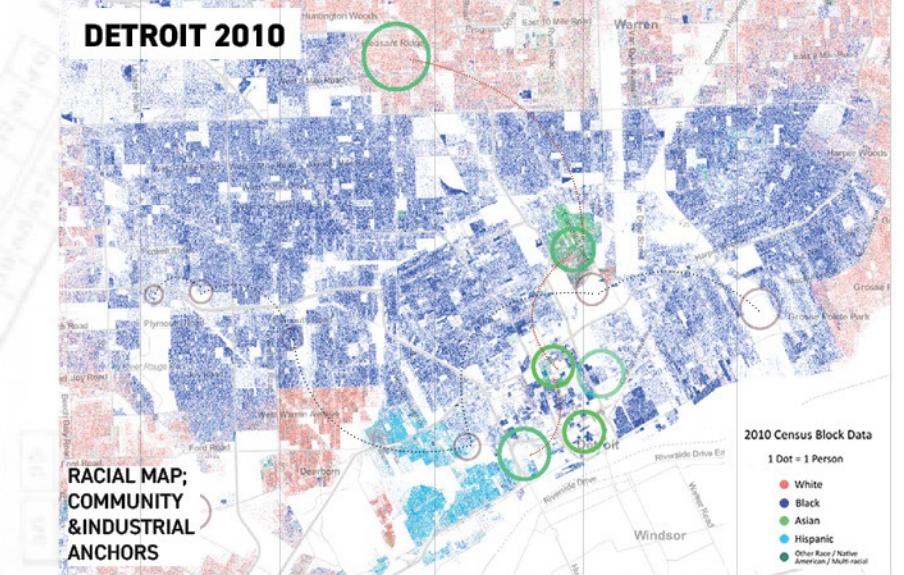
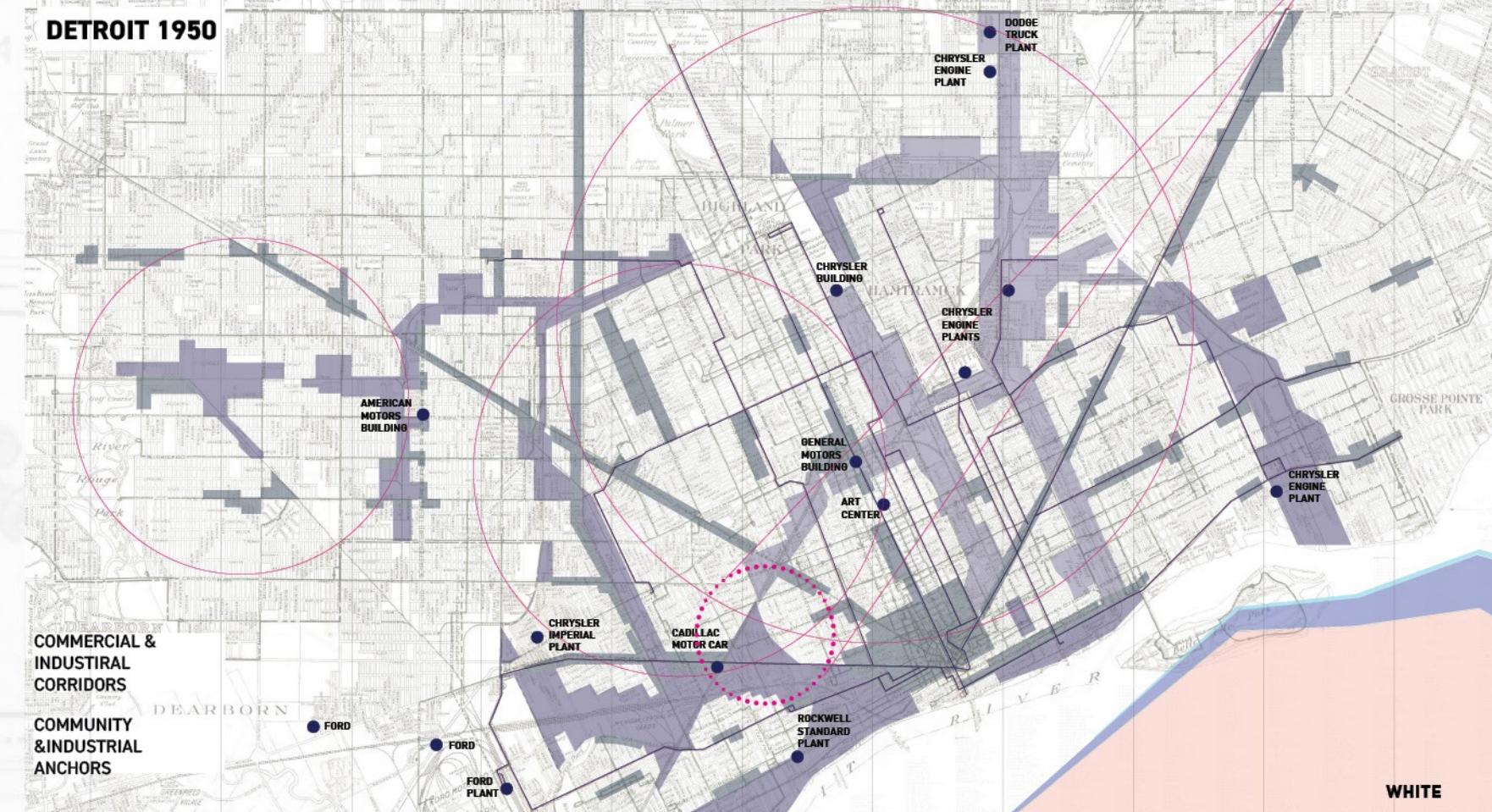
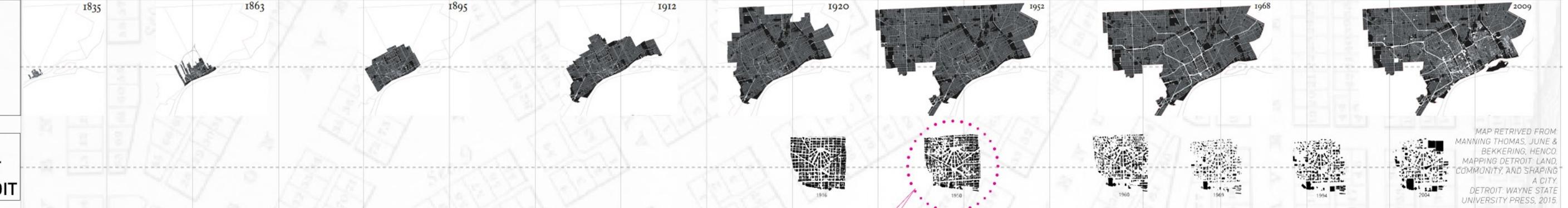
Detroit race riot: Existing social tensions and housing shortages were exacerbated by racist feelings about the arrival of nearly 400,000 migrants, both African-American and White Southerners, from the Southeastern United States between 1941 and 1943. The new migrants competed for space and jobs, as well as against European immigrants and their descendants.



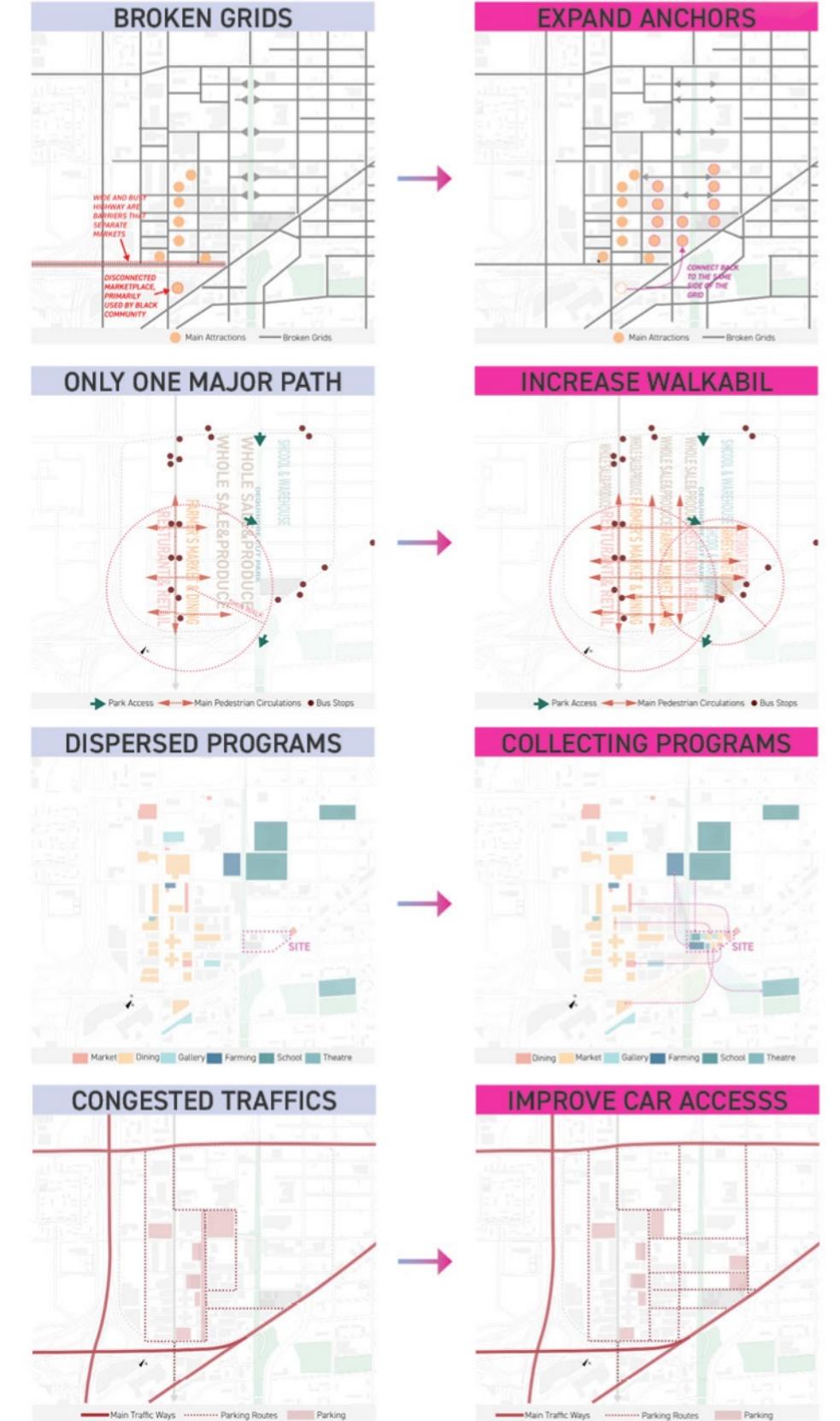
The 1967 Detroit Riot, also known as the Detroit Rebellion and the 12th Street Riot, was the bloodiest incident in the "Long, hot summer of 1967". Composed mainly of confrontations between black residents and the Detroit Police Department.



A state review board appointed by Snyder decides that Detroit is in operational dysfunction, unable or unwilling to restructure its finances, and needs intervention from the state.



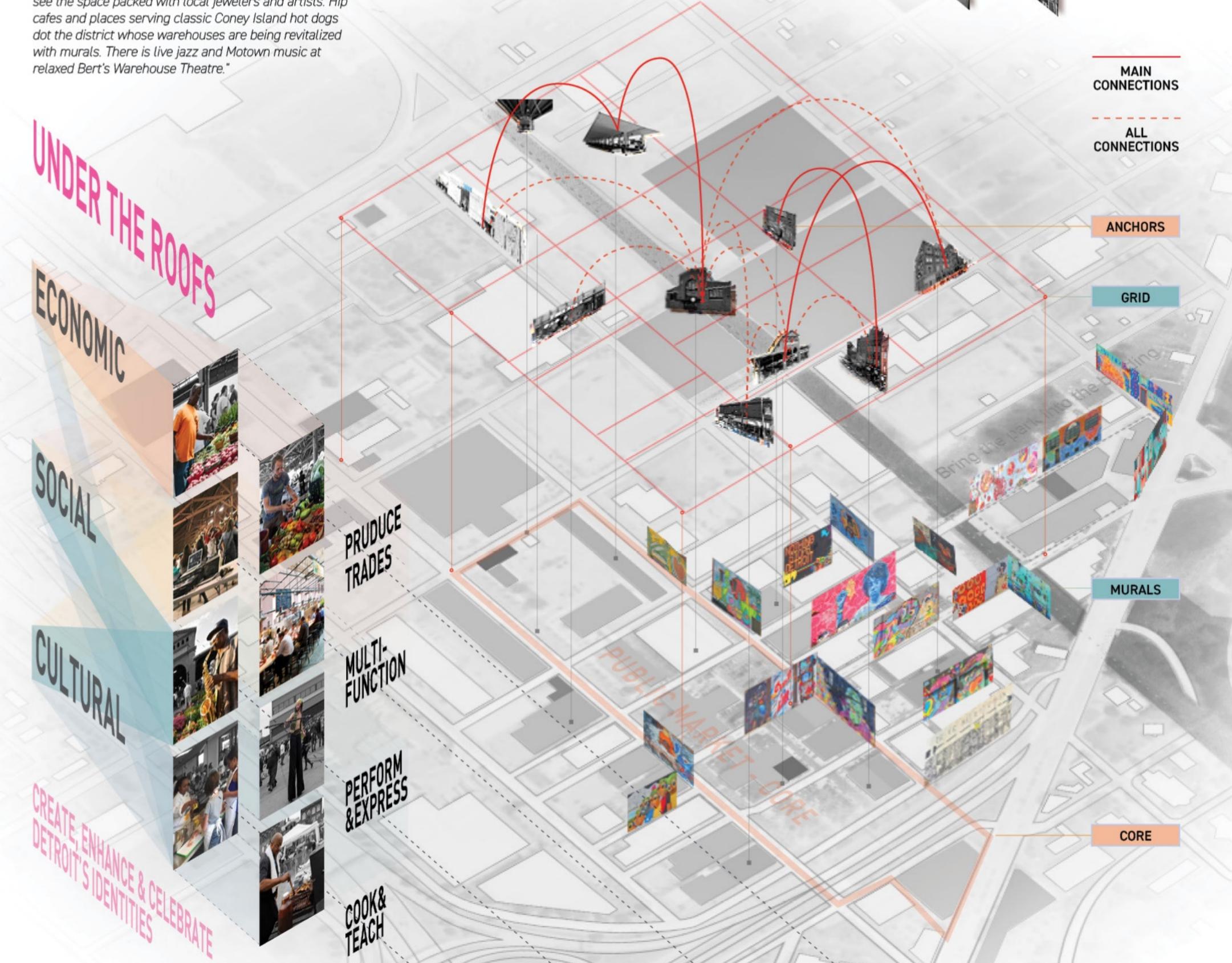
# 1. URBAN ANALYSIS OF THE EASTERN MARKET



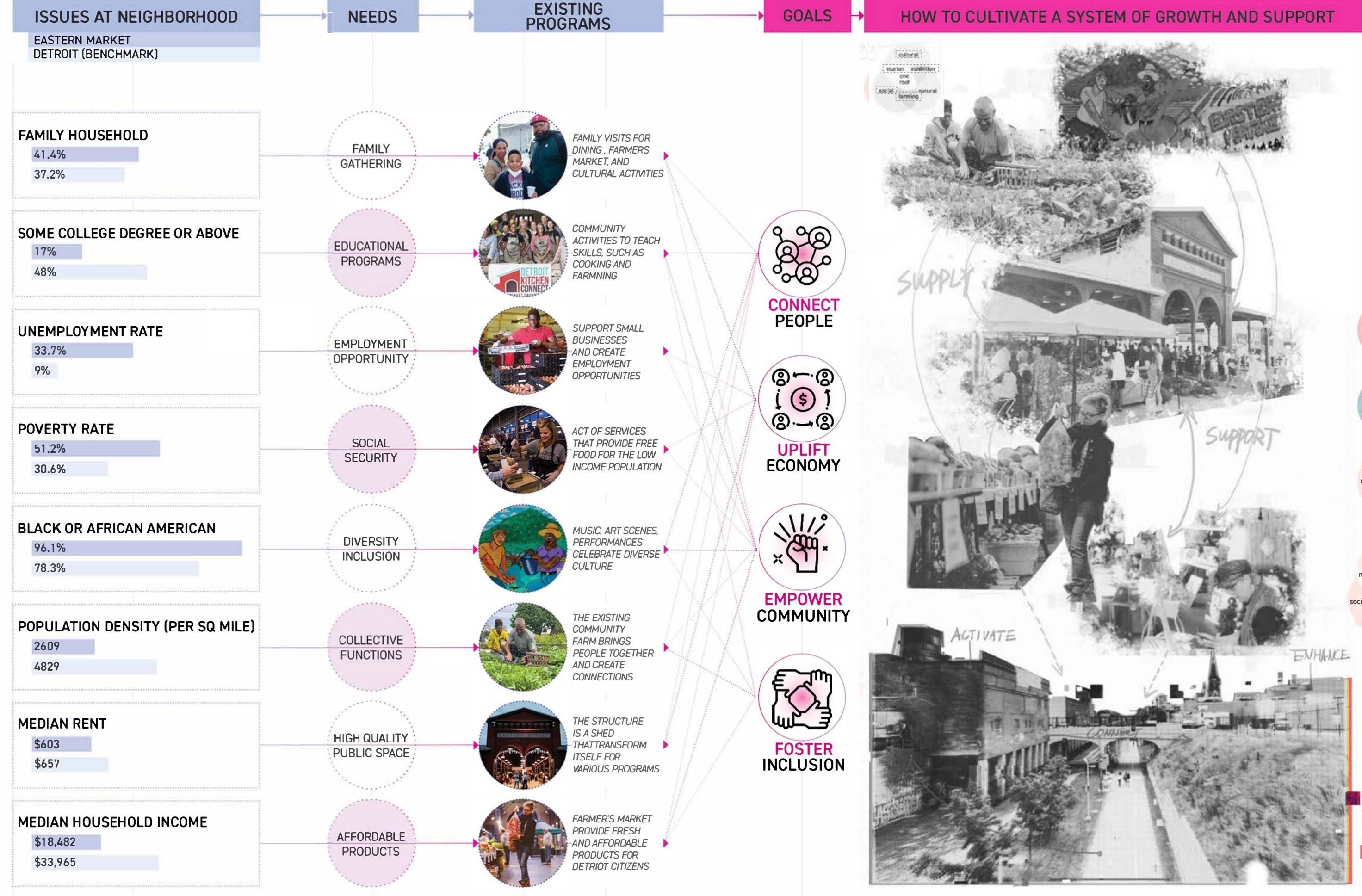
The Eastern Market area is named for the 19th-century market operating here, with vendors selling everything from tacos to colorful produce every Saturday. Sundays see the space packed with local jewelers and artists. Hip cafes and places serving classic Coney Island hot dogs dot the district whose warehouses are being revitalized with murals. There is live jazz and Motown music at relaxed Bert's Warehouse Theatre."



HISTORY

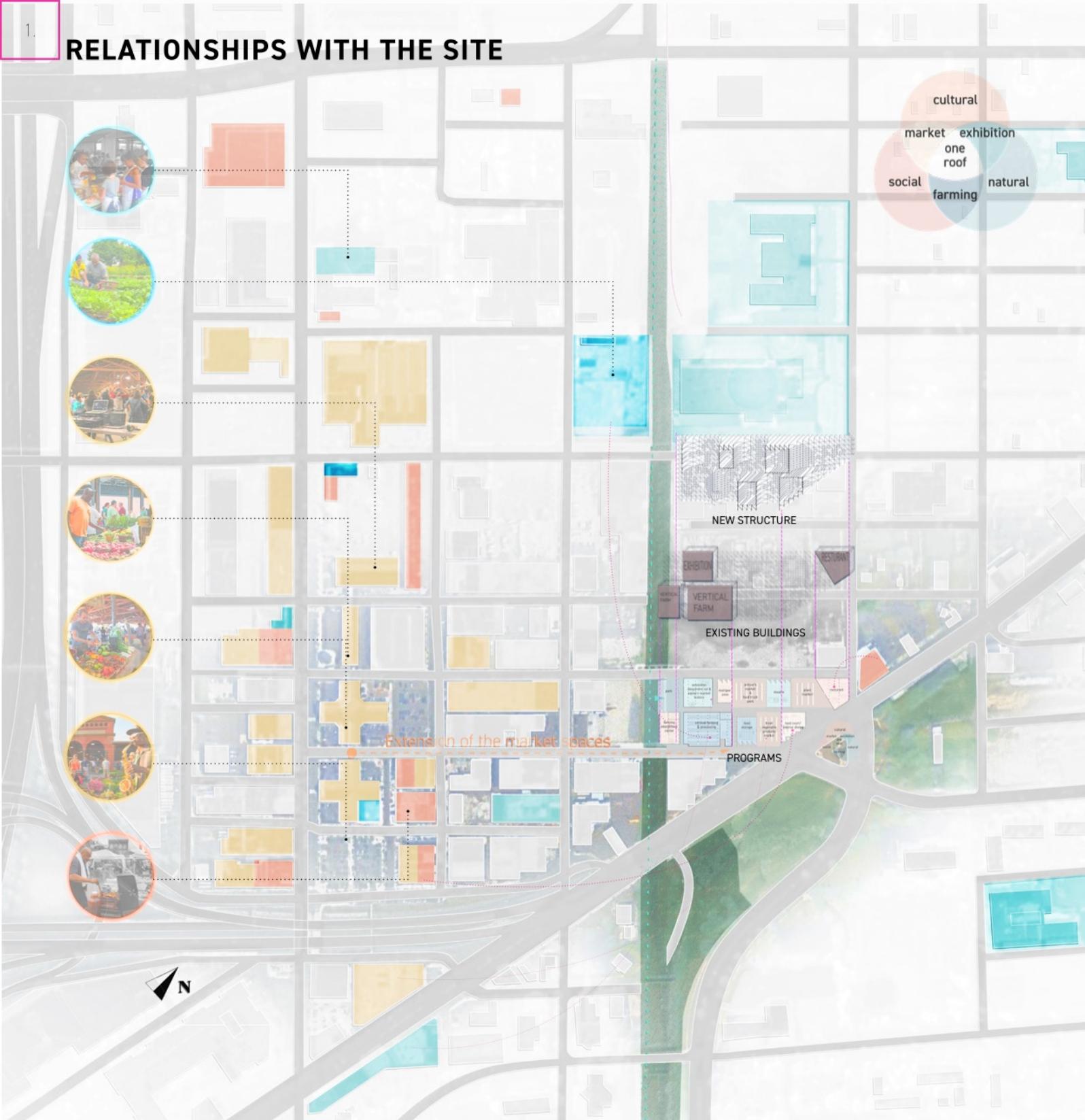


# PROGRAM FINDING - UNDERSTAND WHAT WORKS FOR DETROIT

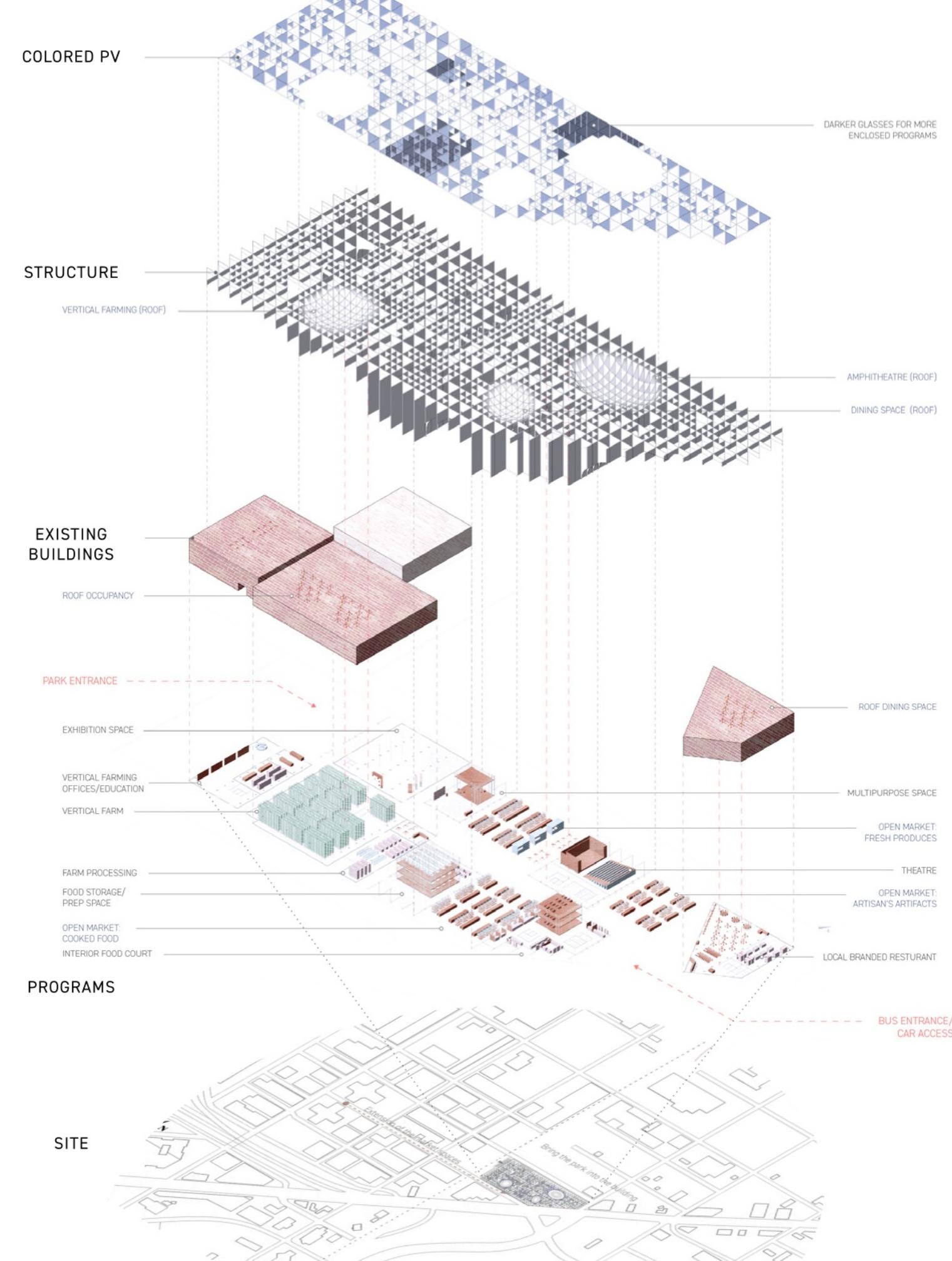


1

## RELATIONSHIPS WITH THE SITE

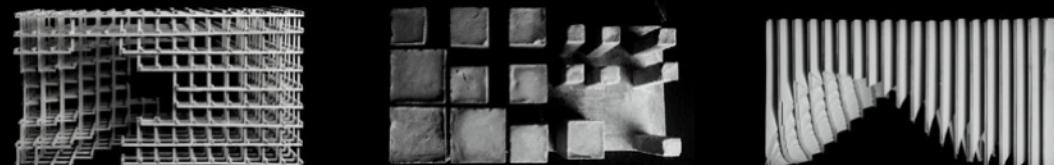


## EXPLODED AXON

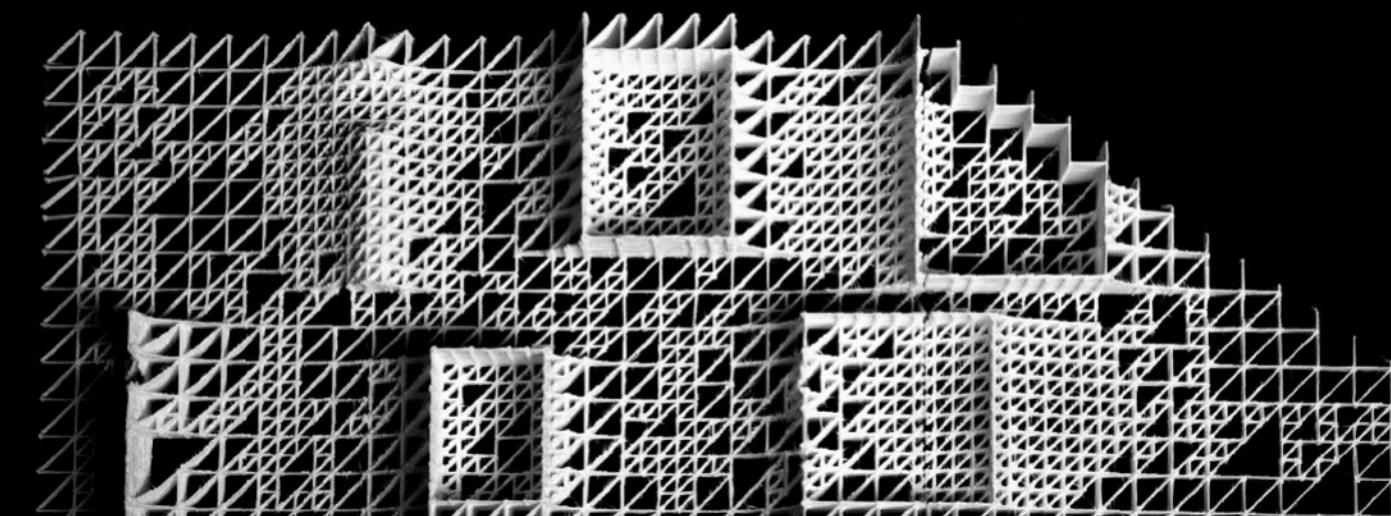
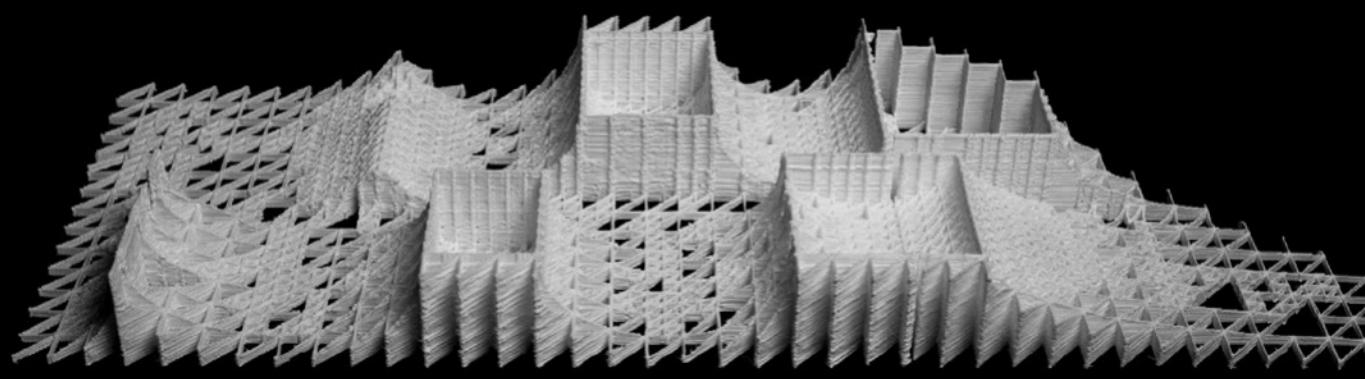


# 1 FORM FINDING

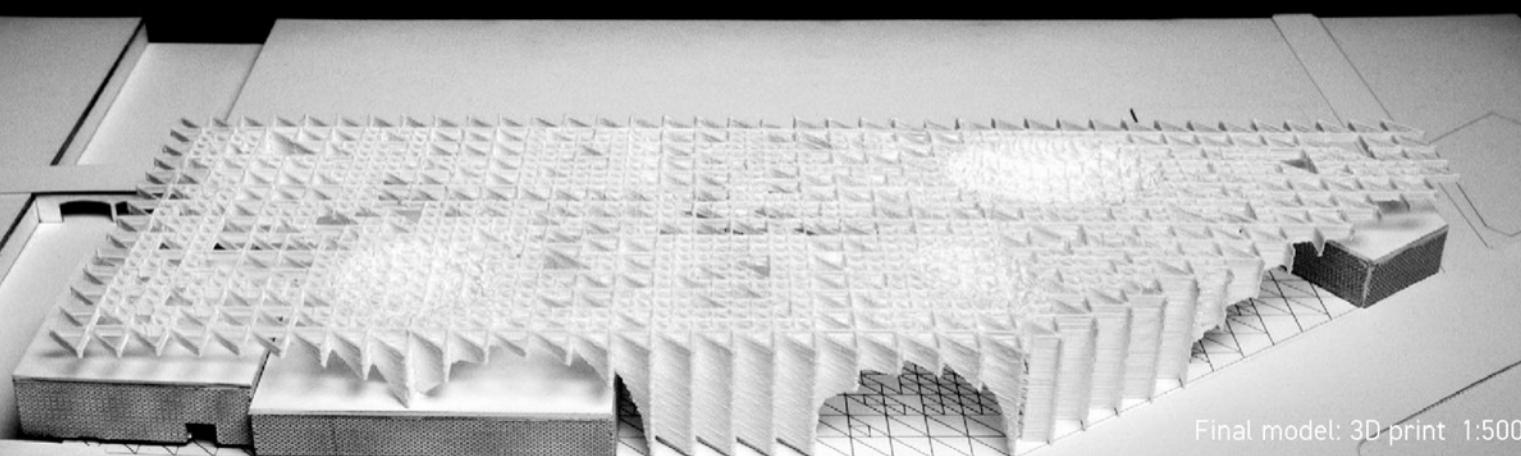
STRUCTURAL STUDIES



FINAL MODEL



FINAL MODEL  
WITH SITE



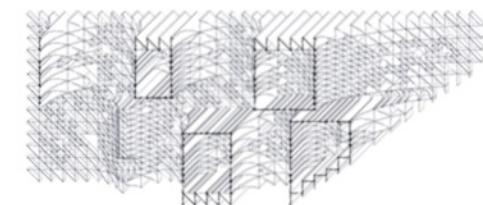
# SPATIAL LOGICS AND RELATIONSHIPS



Diagonal Grid



THEATRE  
FOOD COURT



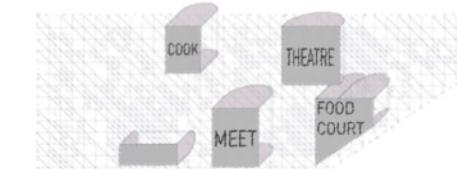
Structure



Subtracting - Above



Grid with Site Boundary



Subtracting - Exterior



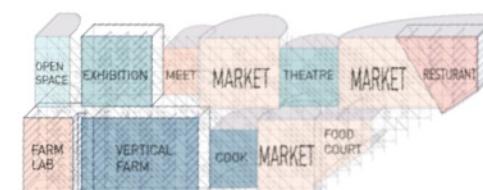
Densified Grid



Existing Building



Subtracting - Exterior



Program Spaces

## PROGRAM RELATIONSHIPS



PARK



ARTS



SOCIAL



MARKET



PERFORMANCE



ARTISAN'S MARKET

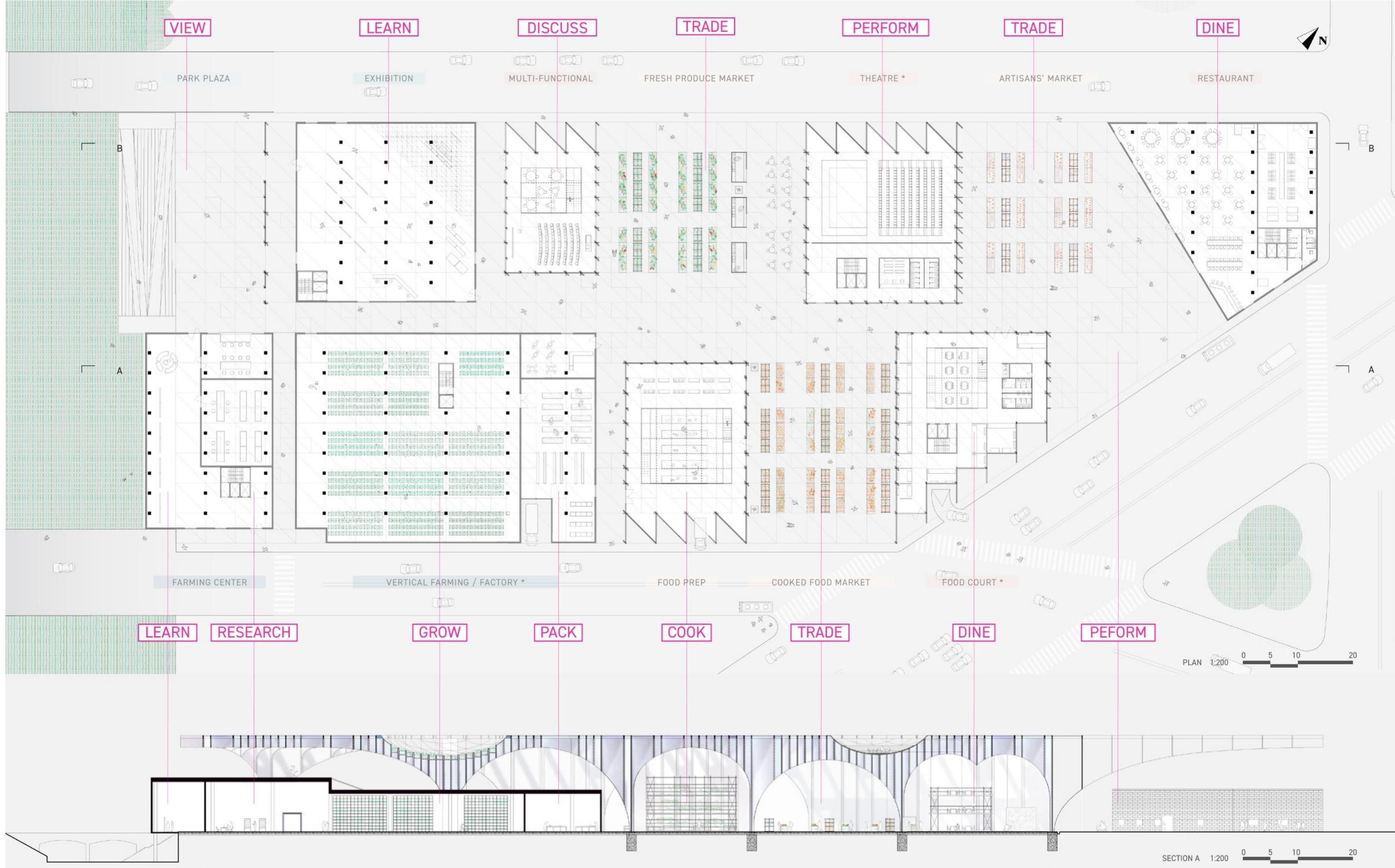
CULTURAL SPINE

PASSAGES

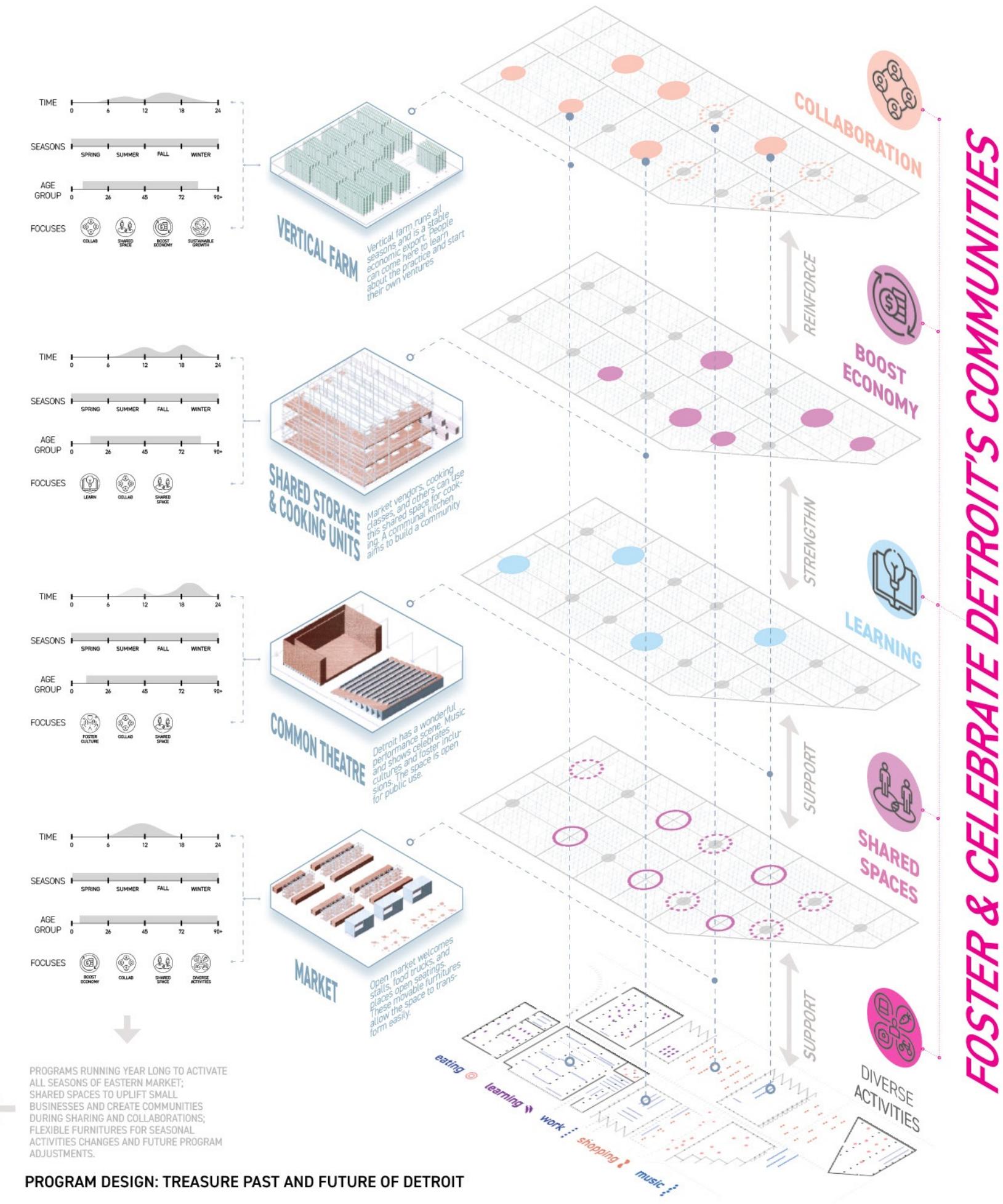
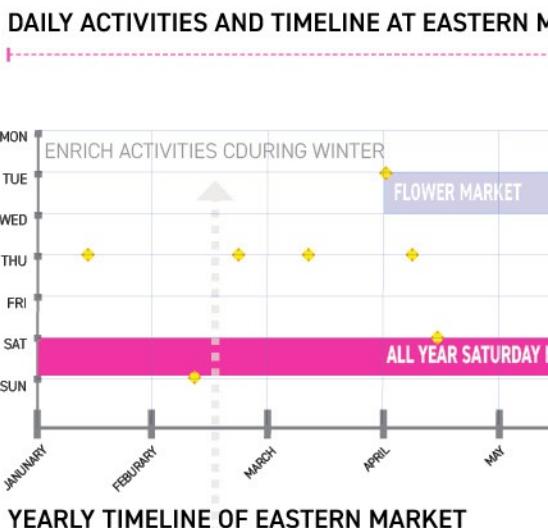
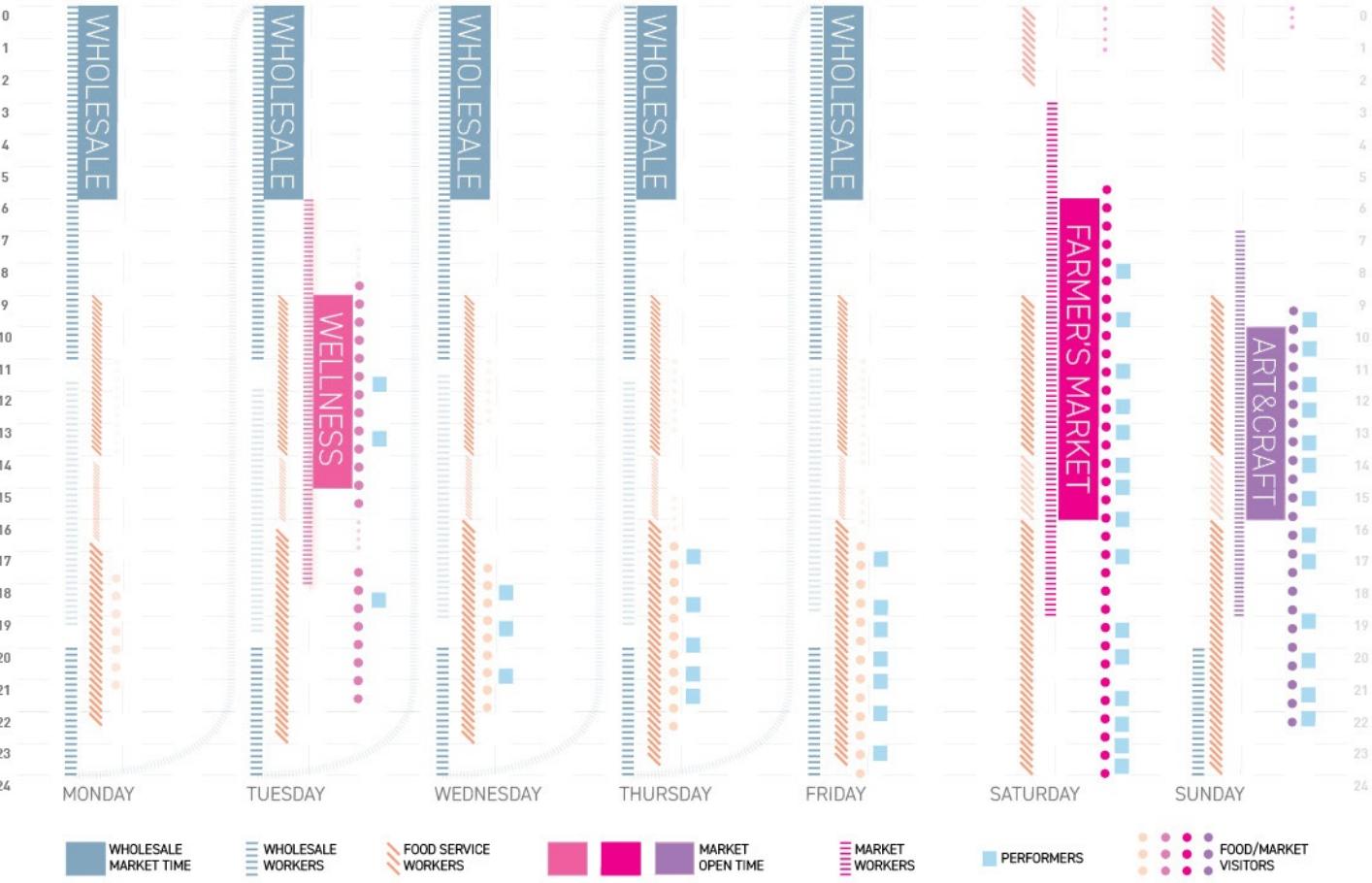
FOOD SPINE



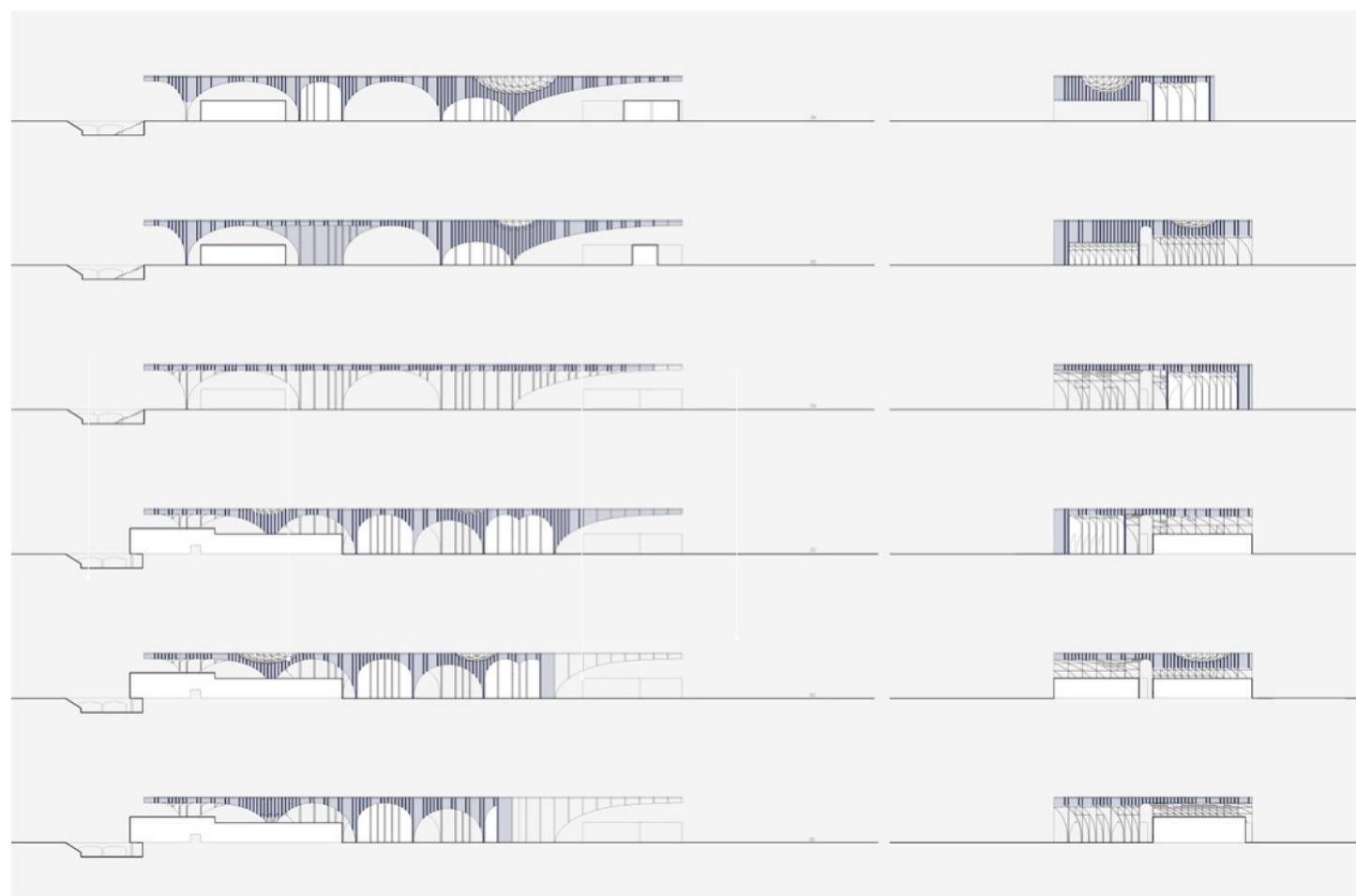
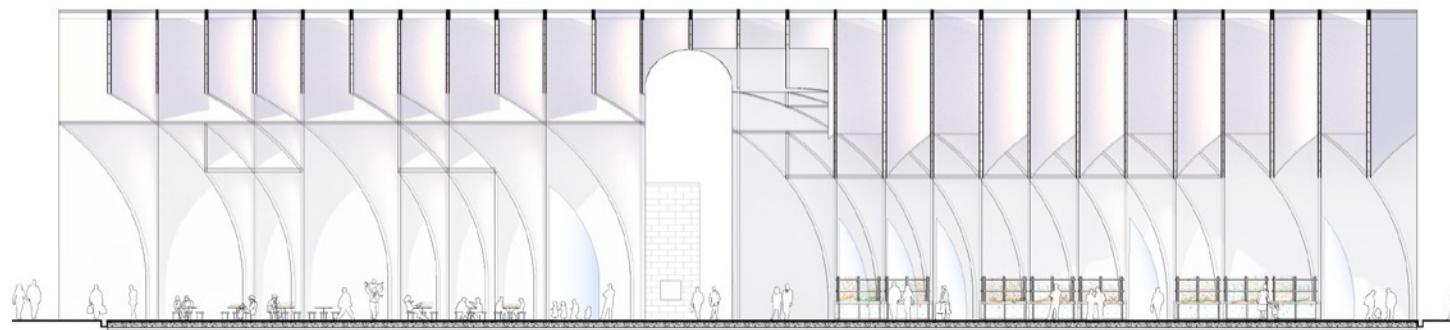
# PLAN AND SECTION 1:200



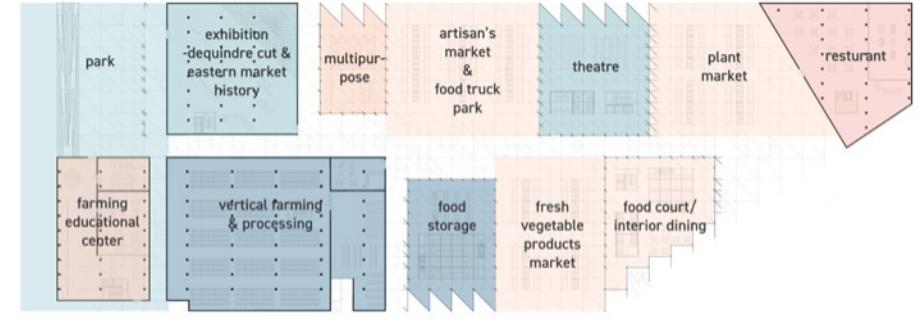
# SHARED SPACE: FLEXIBILITY FOR FUTURE OF EASTERN MARKET



## Spatial Relationships



## Conclusion



The grand scales of architecture in Detroit are the motivations for the a grand gesture of this architectural design proposal, allowing thousands of people to visit Eastern Market and Dequindre Cut during weekends, market days, and special programs. The three indentations on top of the roof are farms, theatre, and dining space, which are the extensions of the programs beneath. The big roof also symbolizes unification. The big roof also symbolizes unification.

The design also activated the roof of the original buildings by providing covered spaces. Three different types of glasses on the top also created various lighting conditions. Scaffolding and movable shelves occupy most of the room to enable flexibility for program shifts over the years. One roof essentially seeks to create a welcoming environment to embrace every identity in Detroit.

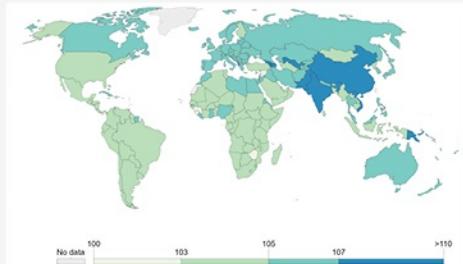




## RESEARCH - GENDER ISSUES AND ACTIVISMS IN MODERN CHINA THROUGH DATA AND MAPPING

### GENDER DISCREPANCY IN SEX RATIO

*The Sex Ratio, Boy Vs Girls For Every 100 Newborn, At Birth In China In 2017* shows that China surpassed most of the world. For every 100 newborn girls, there were over 110+ newborn boys.



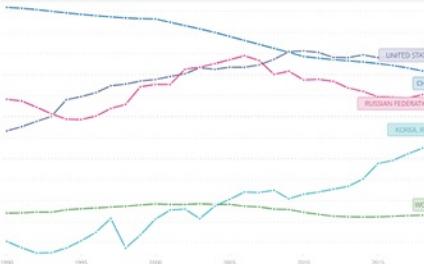
*The Sex Ratio By Birth Order In China From 1981 To 2010* reveals that there were nearly 160 male births per 100 female births for the third child. "Birth ratios are naturally male-biased, with an expected ratio of 105 male births per 100 female births."



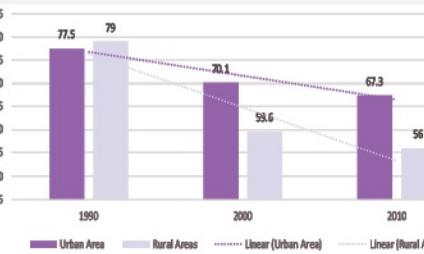
*The Number Of Men Per 100 Women In Different Age Groups - 2010 To 2050* assumes that there will be significantly more men than women in every age group, except for children under 15yrs or elderly over 60yrs by 2050.

### GENDER INEQUALITY IN WORK FORCE

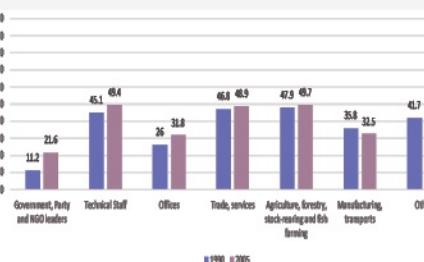
*The ratio of female to male labor force participation rate* shows that while some countries, including the US and South Korea, have climbing rates, China's rate decreased from 86% in 1990 to about 80% in 1995. The world fluctuates between 66% to 68% in the same period.



*The average income for women in % of that for men in China (ACWF surveys)* reveals that the income ratio for women vs men decreased significantly from 1990 to 2010. For urban areas, the ratio decreased 13.2% in the 20-year frame.

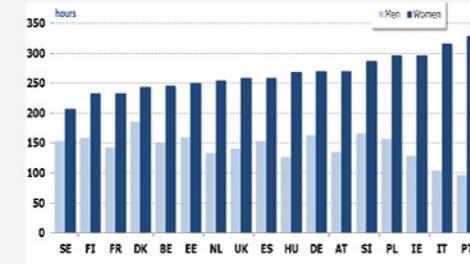


*The Percentage Of Women In Professions In 1990 And 2005 In China* shows increases in gov/party/NGO leaderships, technical staffs, offices, trade and services, agriculture from 1990 to 2005. Yet the percentages for leaderships and offices was overwhelmingly low.

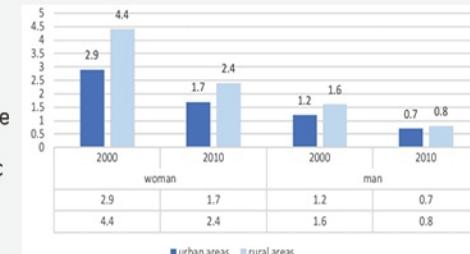


### GENDER INEQUALITY IN DOMESTIC ACTIVITIES

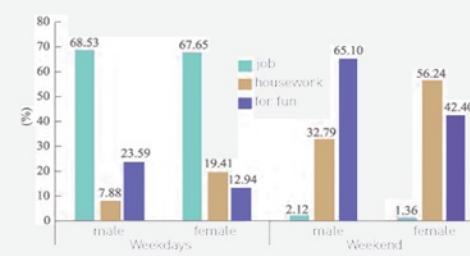
*The Time Spent In Unpaid Work By Gender In 2017* shows that women are doing much more unpaid work, including care and domestic tasks, than men in many countries in the world.



*The Time Devoted Each Day To Domestic Tasks By Employed Persons, By Sex, In China* reveals that employed Chinese women spent about three folds more hours on domestic tasks than Chinese men in 2010.

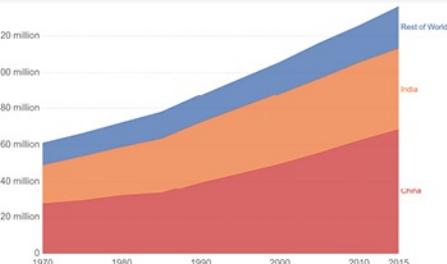


*The Gender Differences Of Travel Purpose Structure In Guangzhou* indicates that women in Guangzhou are more likely to travel for housework and less likely to travel for fun during weekdays and weekend compared to men in Guangzhou.



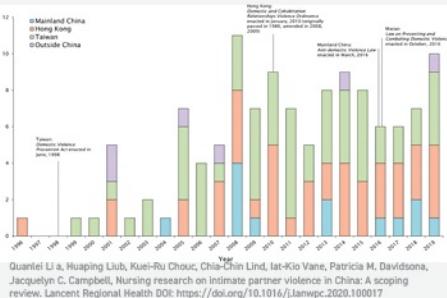
### GENDER BASED VIOLENCE

*The Number Of 'Missing Women' In The World* refers to the "sum of women missing at birth as a result of sex-selective abortion and excess female mortality through infanticide, neglect or poor treatment."



### Annual Numbers Of Nursing Articles On Intimate Partner Violence In China

shows that domestic violence is climbing in China, yet this research claims to have limited access to mainland China's IPV data.



## A BRIEF SUMMARY OF FEMINIST ACTIVISMS IN CHINA FROM 2000s TO NOW

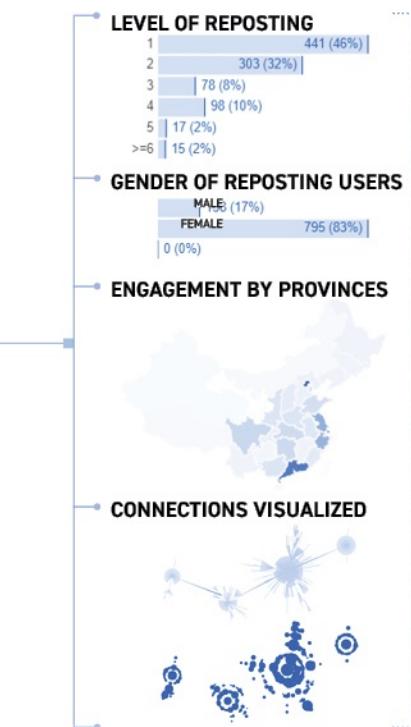
### EARLY 2000s TO EARLY 2010s - PROTEST, PERFORMANCES, LETTERS



### LATE 2000s TO EARLY 2010s - INTERNET&WEIBO: ONLINE CAMPAIGNS&COMMUNITY



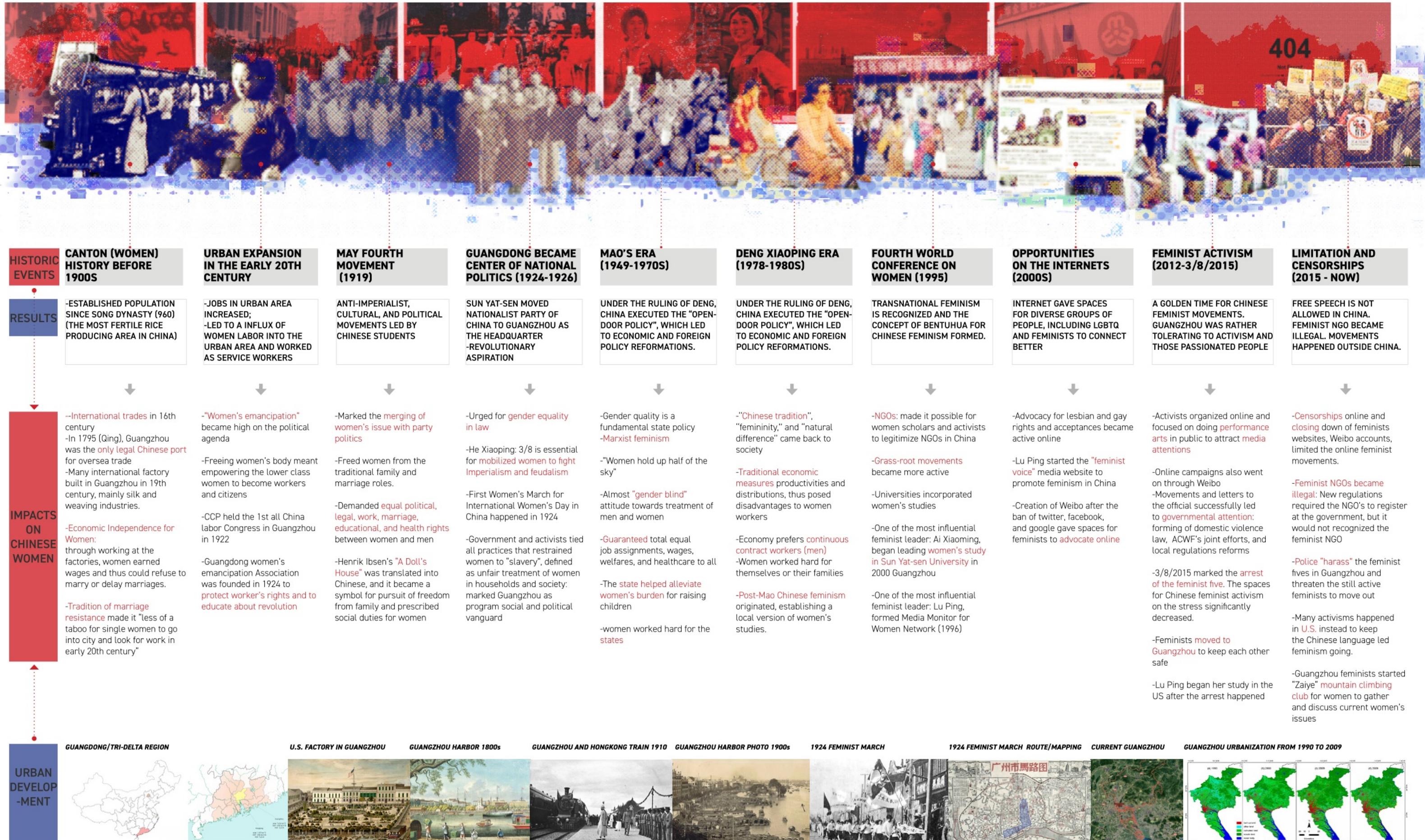
### EARLY 2010s - ONLINE INFLUENCE MAPPING - A POST ON WEIBO



### MID 2010s TO NOW - CENSORSHIP & ACTIVISMS SPREADING TO THE U.S.



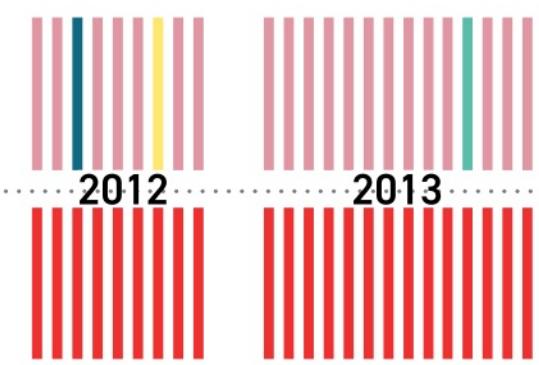
# RESEARCH - CHINESE FEMINISM IN GUANGZHOU IN HISTORY



# CHINESE FEMINISM - A BRIEF TIMELINE



TYPES OF CHINESE FEMINIST PROTESTS / ACTIVISM SINCE 2012



LOCATIONS OF CHINESE FEMINIST PROTESTS / ACTIVISM SINCE 2012

PERFORMANCE



DOMESTIC

ONLINE



BOTH

LETTERS



INTERNATIONAL

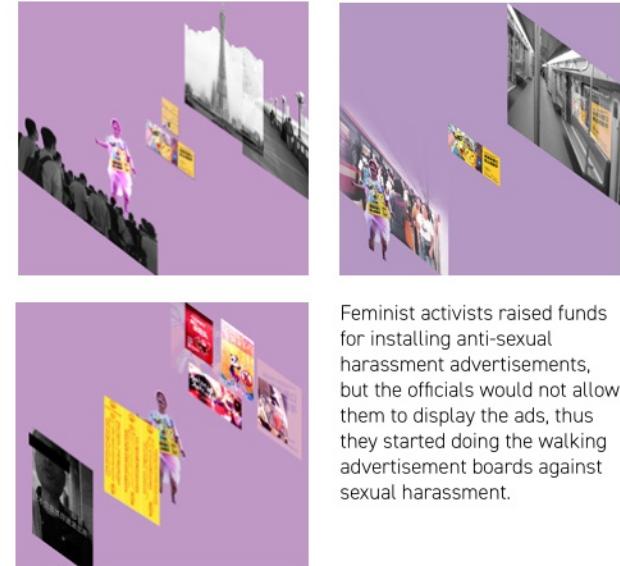
## FEMINIST ACTIVISM AND SPACIAL ANALYSIS

MAPPING ACTIVISM



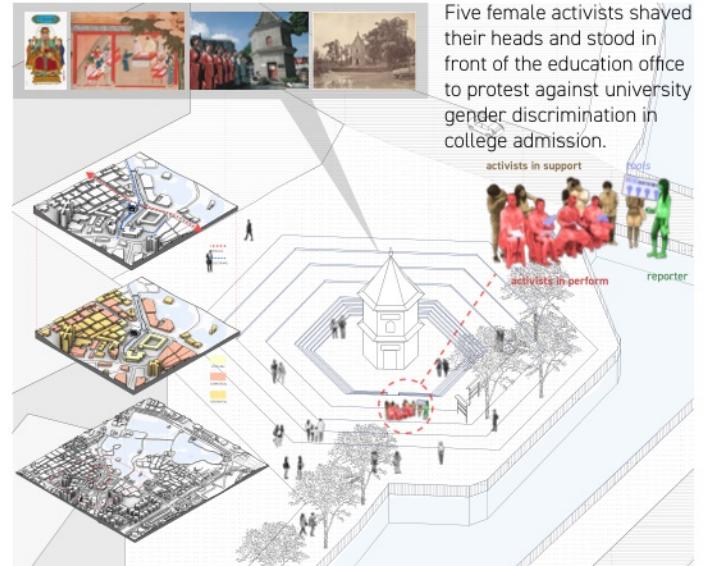
## EVENT ANALYSIS

## EVENT ANALYSIS: "WALKING ADS"



Feminist activists raised funds for installing anti-sexual harassment advertisements, but the officials would not allow them to display the ads, thus they started doing the walking advertisement boards against sexual harassment.

## EVENT ANALYSIS: "BALD SISTERS"



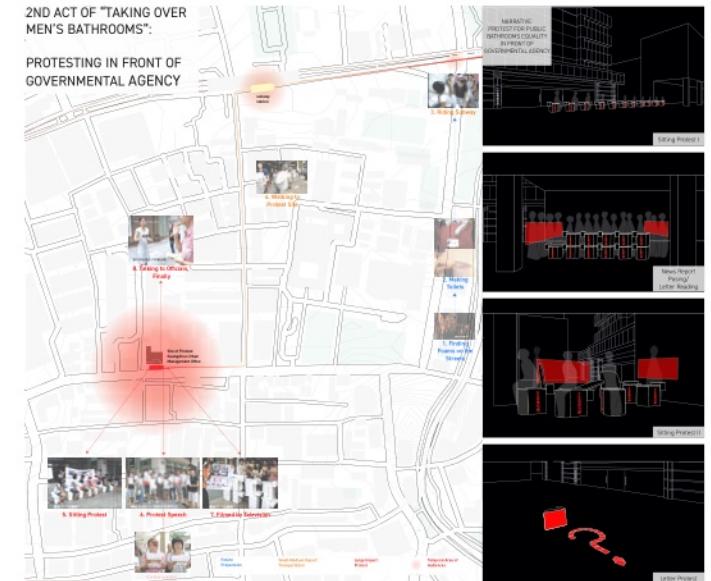
Five female activists shaved their heads and stood in front of the education office to protest against university gender discrimination in college admission.

## EVENT ANALYSIS: OCCUPYING MEN'S BATHROOMS



Occupying men's bathrooms in Guangzhou's most famous park to raise awareness in the bathroom resources allocations inequality. The governmental agency changed the code in 2017 that public bathroom ratio of female to male has to be 3:2, and 2:1 for the more crowded spaces.

## EVENT ANALYSIS: BATHROOMS ACT II



## EVENTS ANALYSIS: "CLIMBING CLUB"



The Guangzhou feminists organized a climbing club for women. They climb in the mountains and talk about feminist issues that they care about. "Zai Ye" means the party of opposition. This activity strengthens female bodies and provided a safe space for them to share and foster friendship.

## EVENT ANALYSIS: "VIRGINIA MONOLOGUE"



The first Chinese Virginia Monologue was organized by professor Xiaoming Ai from Sun Yet-Sun University in 2003. It was on air in the Guangdong Art Museum. Years after, many other cities in China also attempted to perform. Many got prohibited, unfortunately.

## FEMINIST ACTIVISM IMPACTS

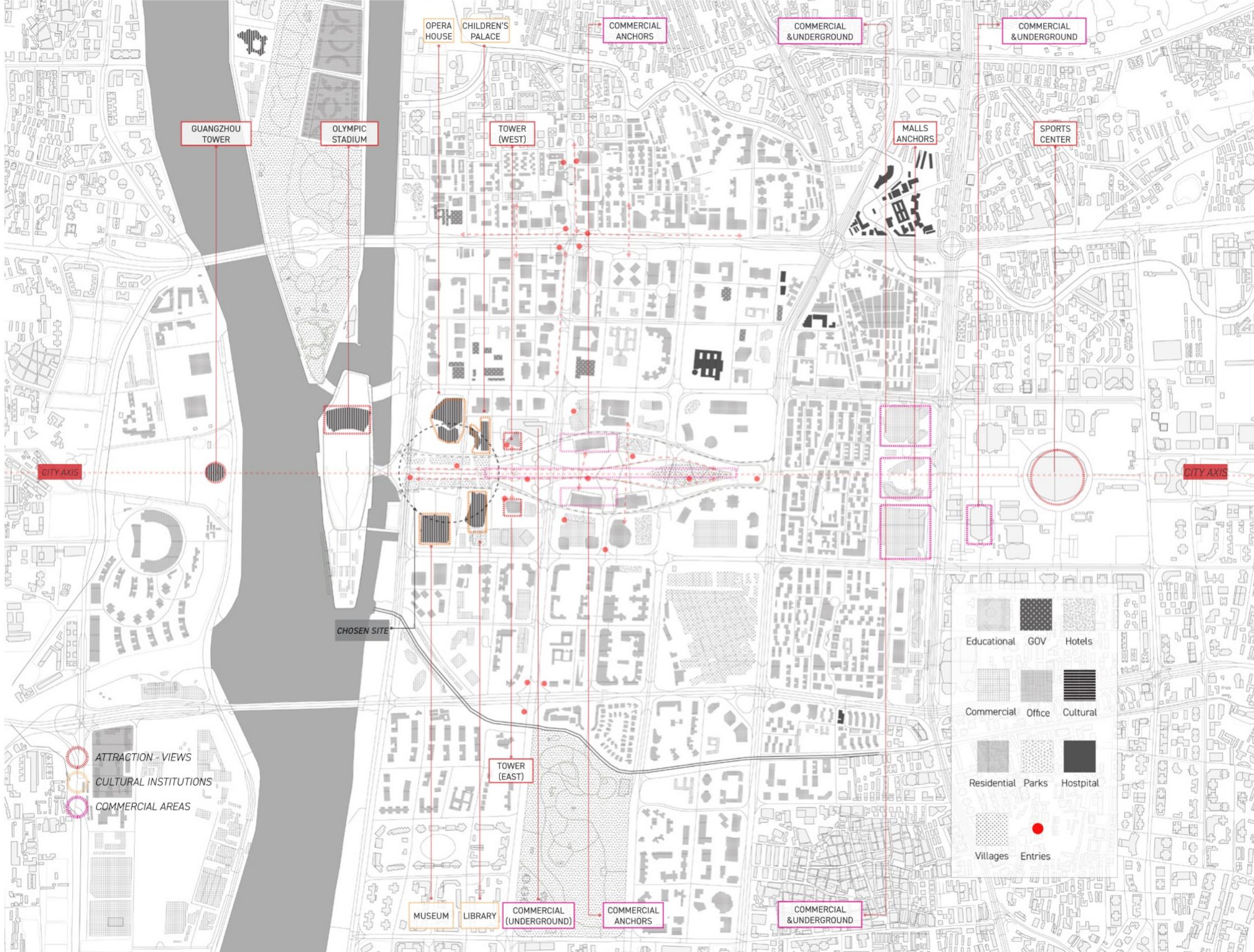


## FEMINIST MOVEMENTS AND GOVERNMENTAL RESPONSES



## SITE STUDY - POINTS OF INTERESTS: VIEWS, COMMERCIAL & CULTURAL ATTRACTIONS AT GUANGZHOU AXIS

N



### HISTORY AND PRESENT:

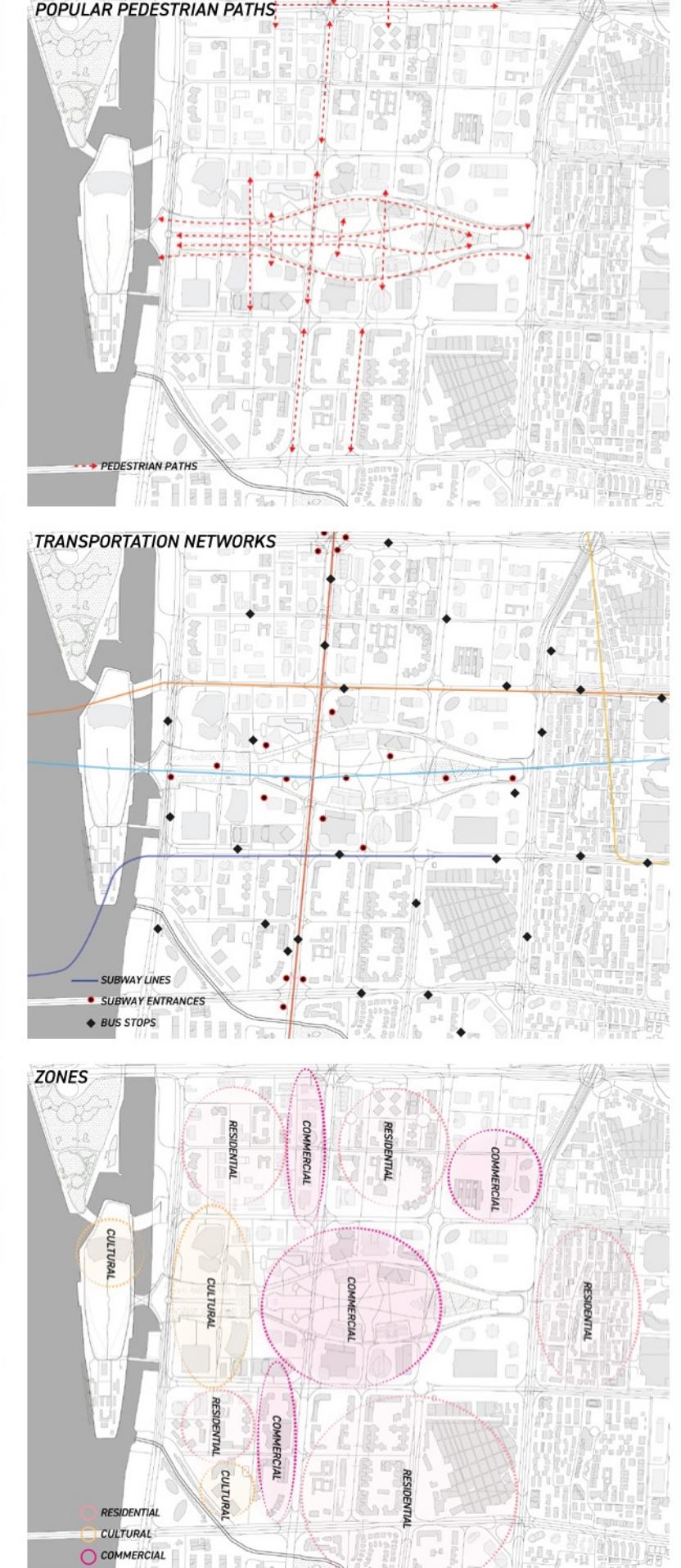
THIS PART OF GUANGZHOU DEVELOPED IN THE PAST 15 YEARS. BEFORE THAT, IT WAS FARM LAND AND MOSTLY VILLAGES. RIGHT NOW, IT IS THE FINANCIAL, CULTURAL, AND COMMERCIAL CENTER OF GUANGZHOU. IT IS THE MOST CELEBRATED URBAN AREA NAMED "PEARL RIVER NEW TOWN".

### URBANIZATION:

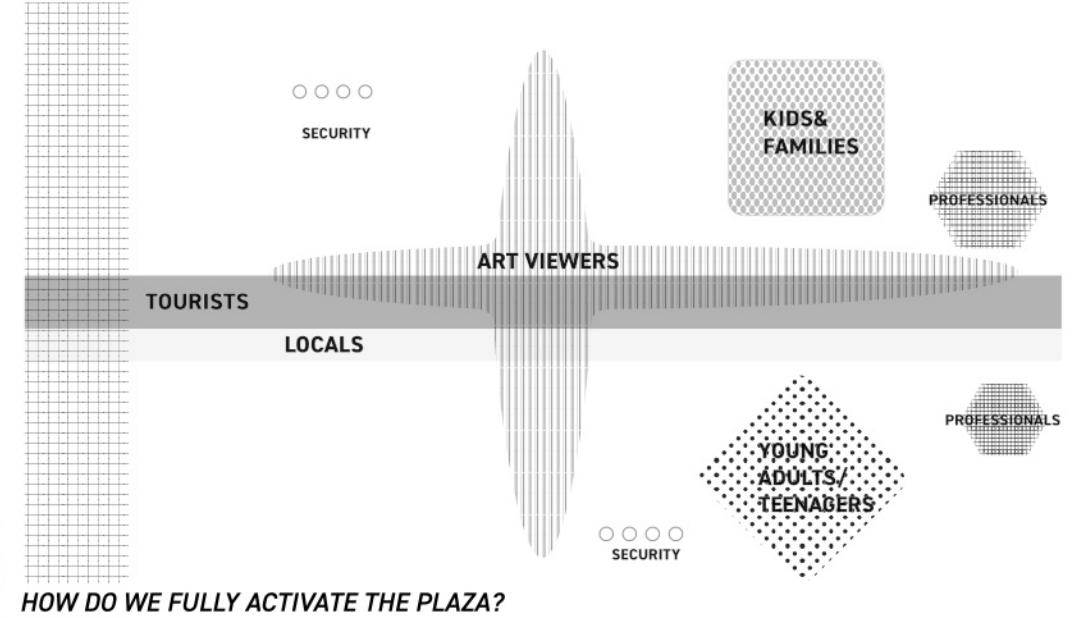
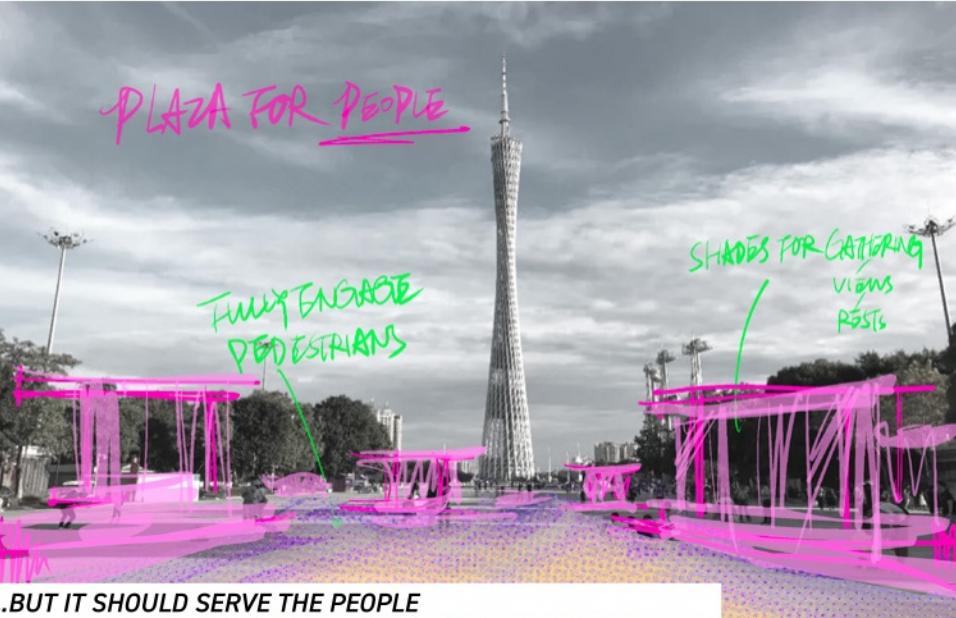
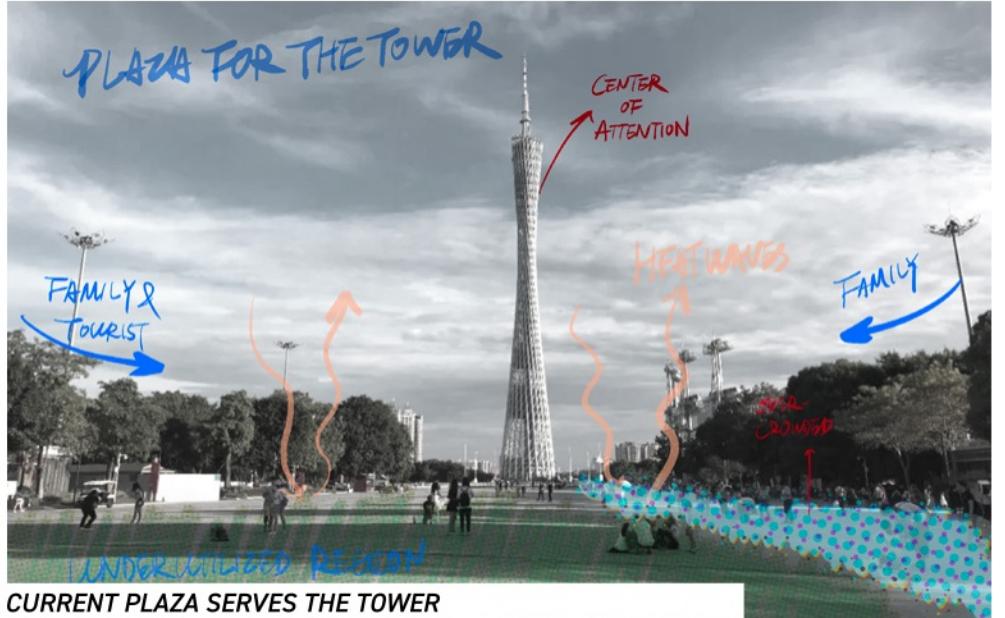
PEARL RIVER NEW TOWN IS FACING ADVANTAGES AND CHALLENGES. IT WELCOMES THOUSANDS OF PEOPLE DAILY WITH THE WELL CONNECTED TRANSPORTATIONS, COMMERCIAL AND BUSINESS ANCHORS. YET IT IS DISPLACING A LOT OF THE EXISTING RESIDENTS IN THE VILLAGES, COSTING A LOT OF MONEY AND CONFLICT.

### WOMEN OF GUANGZHOU:

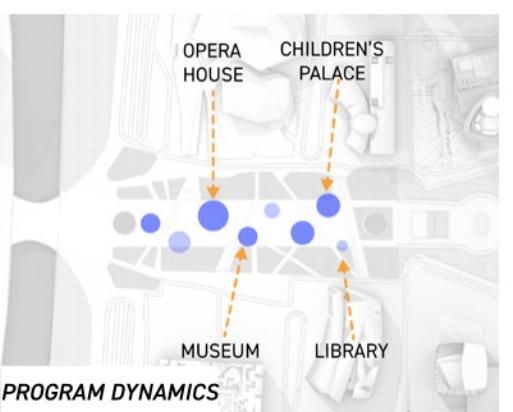
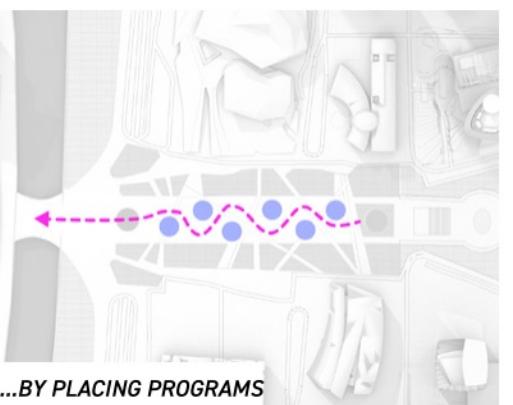
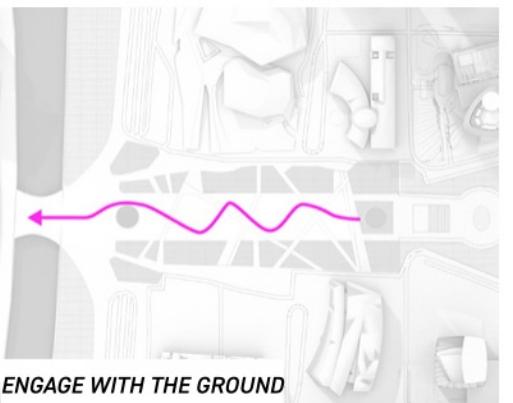
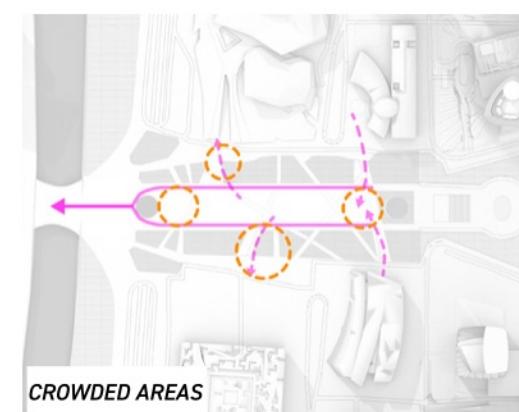
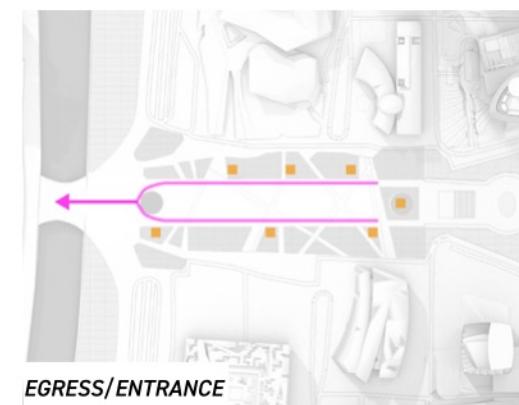
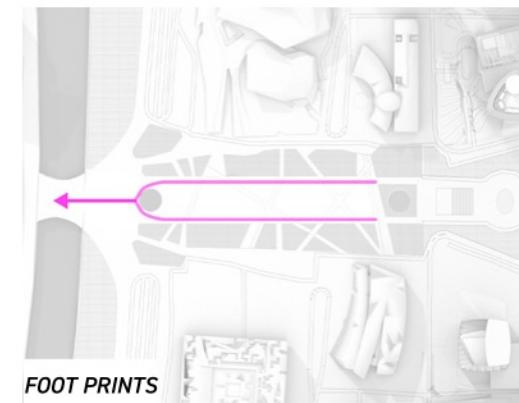
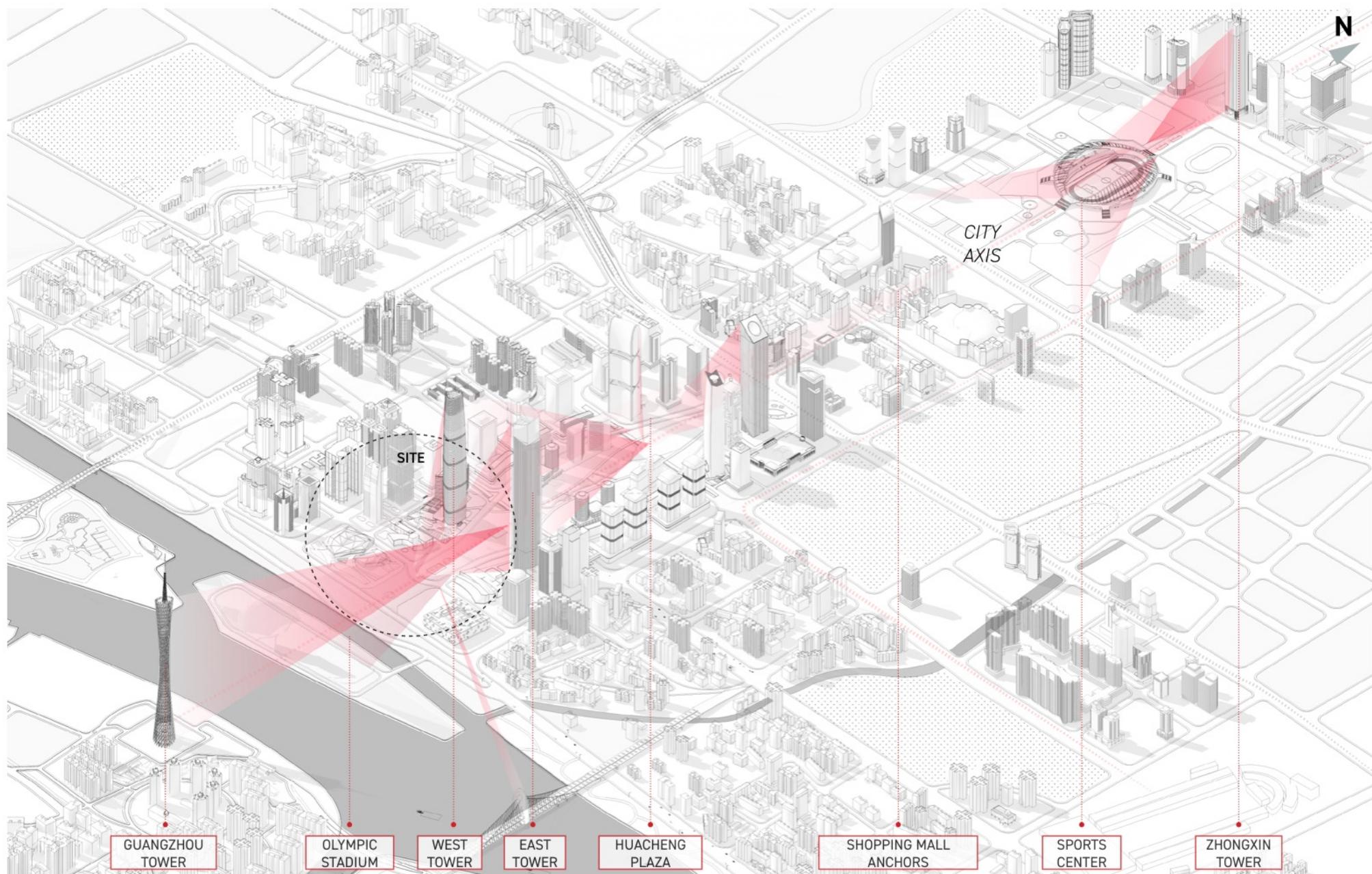
WOMEN FROM ALL AGES COME HERE: BUSIEST SUBWAY TRANSFER STATIONS, FAMILY FRIENDLY PLACES, THRIVING FOOD AND ENTERTAINMENT SCENES, CULTURAL ACTIVITIES ETC. IT IS ALWAYS SO LIVELY, LETTING ALL GUANGZHOU WOMEN MEET IN THIS PLACE TO CONNECT WITH EACH OTHER AND CONNECT WITH FAMILIES.



# SITE STUDY - VIEW & MANIFESTATION OF POWER AT CITY'S CENTER AXIS & PUBLIC ENGAGEMENT STRATEGIES



HOW DO WE FULLY ACTIVATE THE PLAZA?



# DESIGN - UMBRELLA: FEMINIST DESIGN NARRATIVE

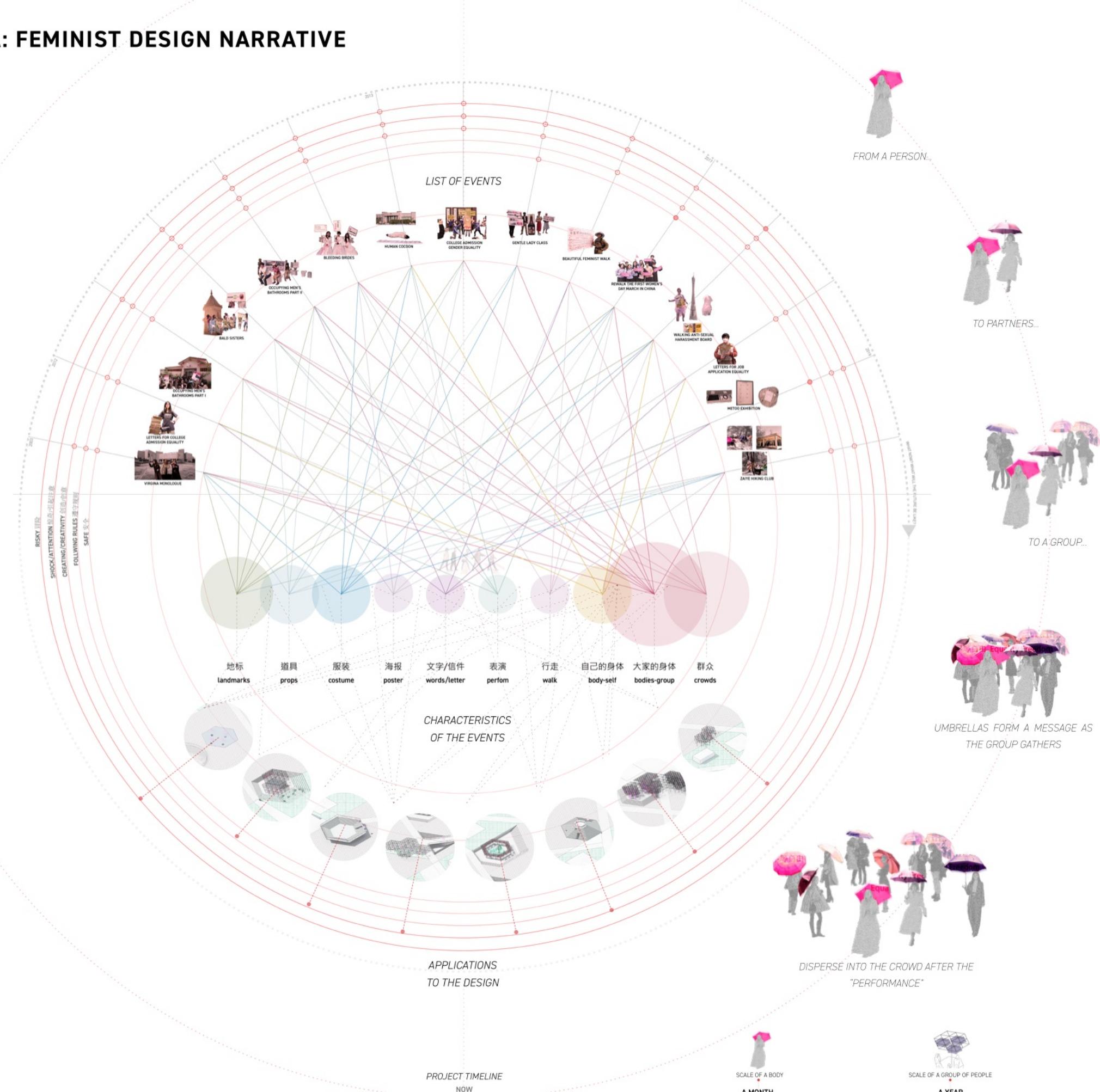
## WHY UMBRELLAS?



UMBRELLAS ARE USED AS DAILY SUNSHADE DEVICES AND THEY HAVE BEEN ASSOCIATED WITH FEMININITY IN CHINA



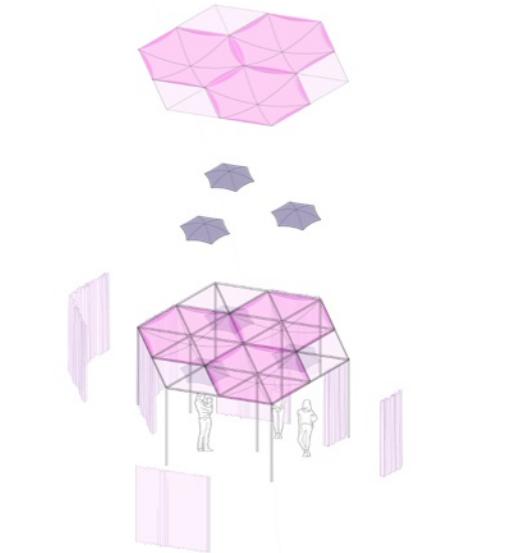
YET, UMBRELLA, AS A MUNDANE OBJECT, CAN BECOME AN EASY AND SAFE OBJECT TO REPRESENT THE FEMINISTS, THUS CARRY OUT THE MESSAGES



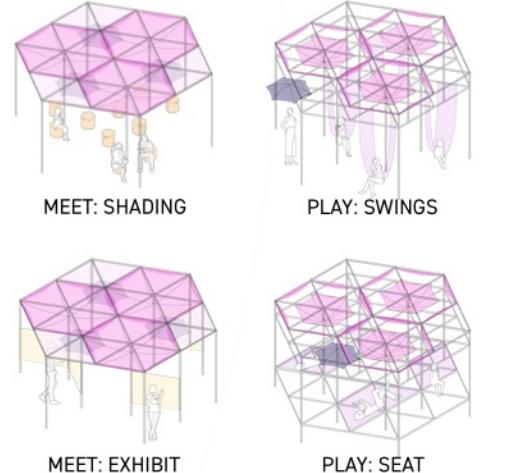
## VIEW ANGLES



## STRUCTURE



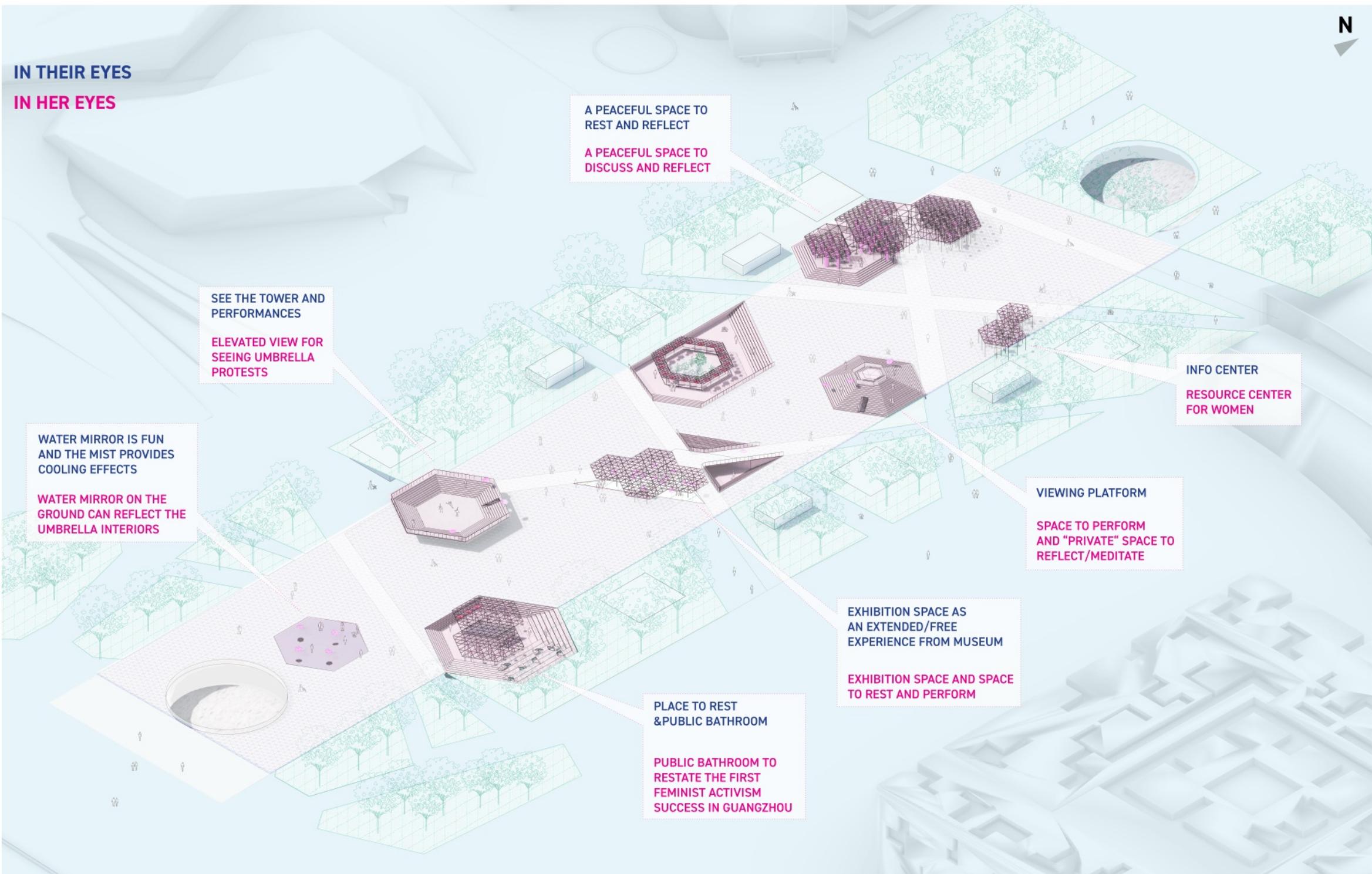
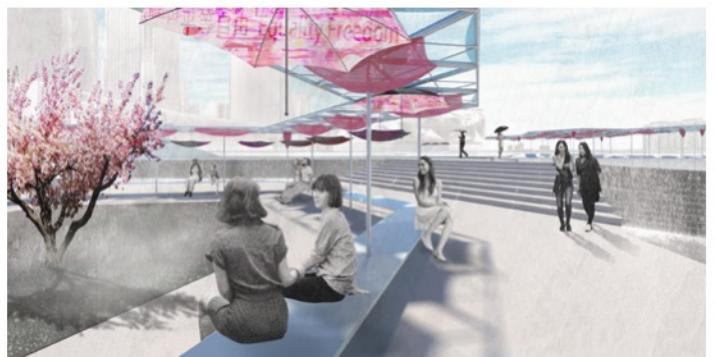
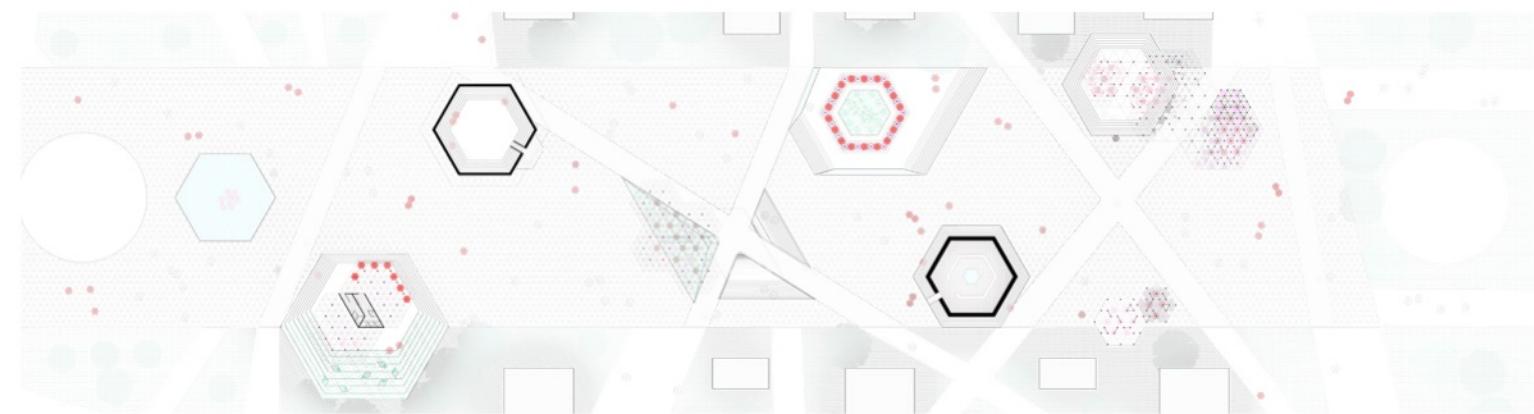
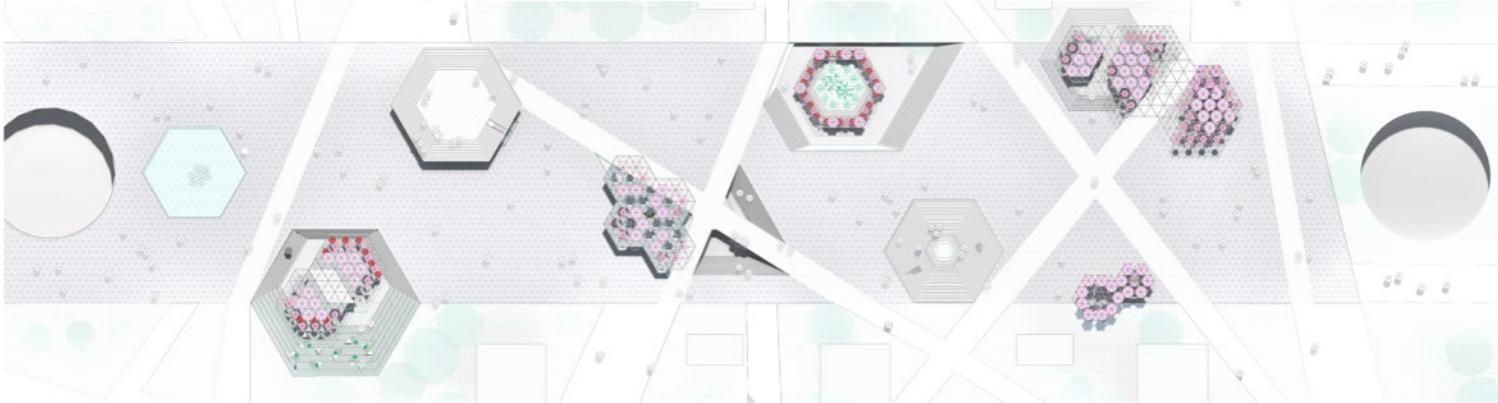
## COMPOSITION VARIATIONS



## MATERIALITY - RECYCLED UMBRELLA



## DESIGN - PLAZA REIMAGINED: ACTIVISM, AND COMMUNITY CREATION



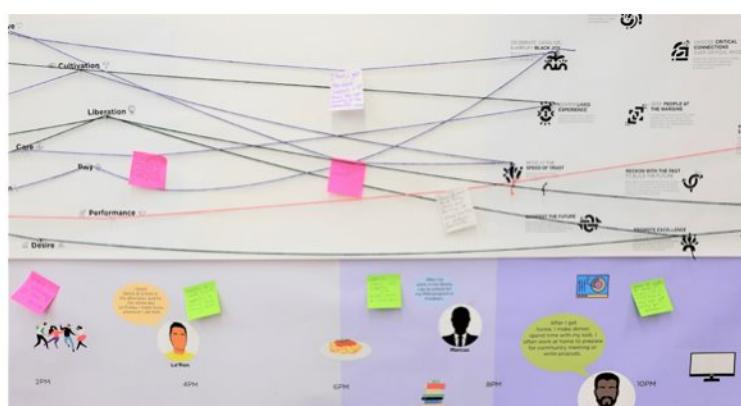


## URBAN AND HISTORICAL ANALYSIS OF BROWNSVILLE

## **RESIDENTS' DAILY ROUTINES.**



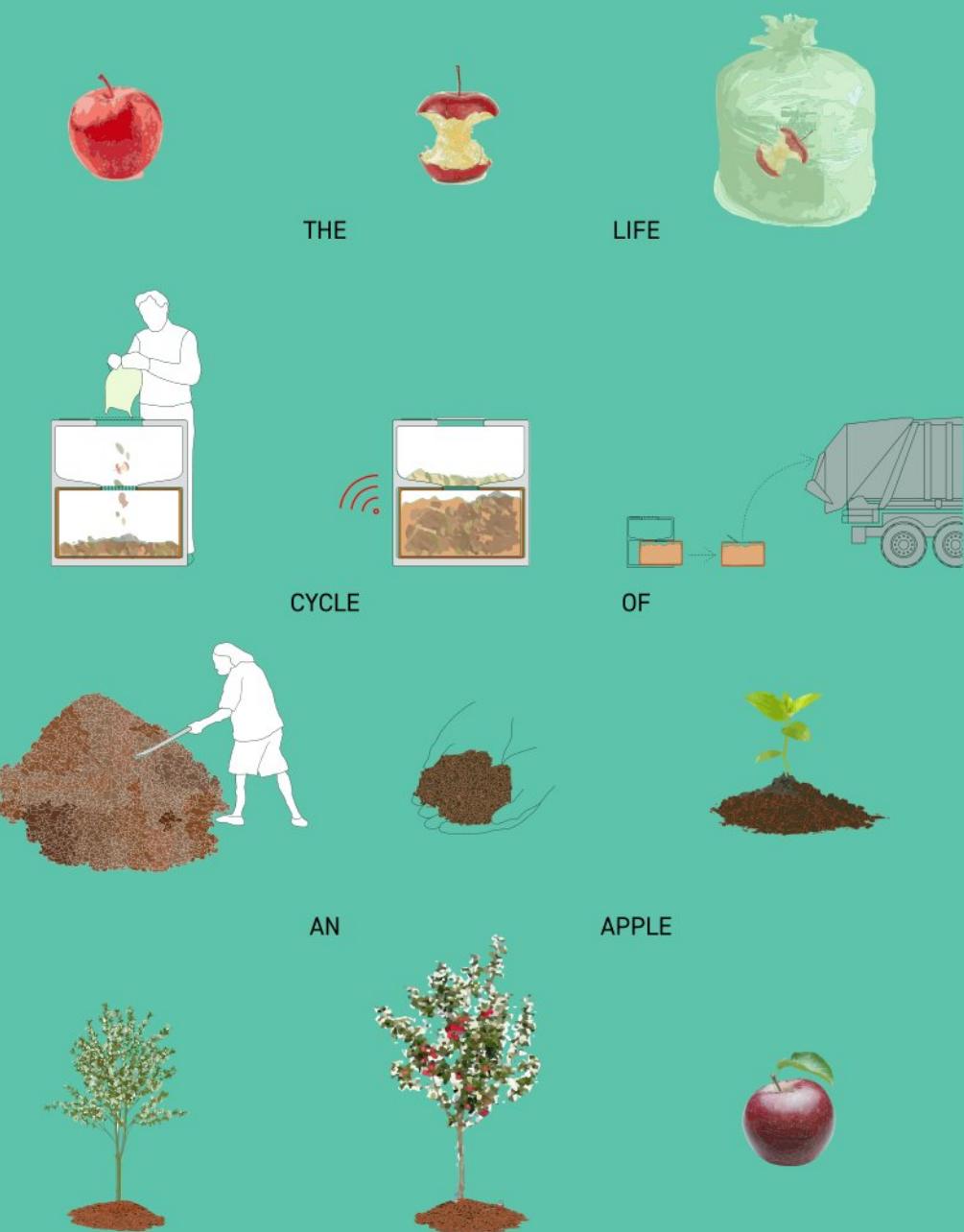
## COMMUNITY ENGAGEMENT PROCESS



WE CREATED ENGAGING AND PLAYFUL SITE MODELS, SITE DRAWINGS, AND SOME DESIGN PROPOSALS TO IMAGINE A MORE CELEBRATED BROWNSVILLE FOR THIS COMMUNITY MEETING. I WAS WITH THE DRAWING TEAM, AND I MAINLY INTERVIEWED THE RESIDENTS OF THE NEIGHBORHOODS, ASKED ABOUT WHAT THEY CARED ABOUT, AND UNDERSTOOD HOW DESIGN COULD HELP IMPROVE THEIR LIVING EXPERIENCES. I THEN TRANSLATED THAT INFORMATION INTO GRAPHICS FOR INTERACTING WITH MORE COMMUNITY MEMBERS ON THE BIG DRAWING CANVAS DURING OUR MEETING. WE DECIDE TO USE THREADS AND STICKERS NOTES TO HELP ENGAGE DIFFERENT VOICES.

MY BIGGEST TAKEAWAY FROM THIS DESIGN STUDIO IS THE IMPORTANCE OF THE COMMUNITY ENGAGEMENT PROCESS. WE WERE THE OUTSIDER. WE SAW DISTRUST AND FEAR WHEN WE FIRST ENTERED THE NEIGHBORHOOD. EVEN THOUGH WE TRIED TO LISTEN TO AND UNDERSTAND THE NEIGHBORS, VIEWING THE SITE FROM THE OUTSIDE OFTEN RESULTED IN IMPOSING DESIGN GESTURES THAT DO NOT SERVE THE COMMUNITY. THE KEY IS TO CREATE A MUTUAL LEARNING ENVIRONMENT WITH THE PEOPLE WE SERVE. DESIGNERS SHOULD HAVE GENUINE CURIOSITY AND EMPATHY TOWARDS THE PEOPLE WE SERVE. WE SHOULD TREAT THEM AS EQUALS, AS FRIENDS, AND AS MEMBERS OF THE DESIGN PROCESS.

**URBAN RESEARCH**  
**URBAN DESIGN**  
**SUSTAINABILITY**

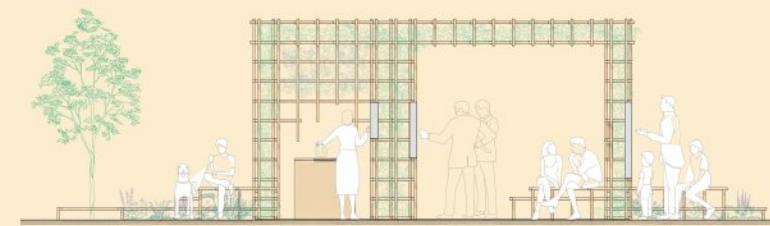


## THE GREEN SHED

FALL 2019; SMART CITY R&D CASE STUDY AT ENNEAD ARCHITECTS (ENNEAD LAB); INDIVIDUAL WORK

The phenomenon of trash bags piled in the streets brings inconvenience to the pedestrian traffic and causes health issues. To create a successful waste management system, we need to educate the public and establish new habits and rules for recycling, composting, and landfills. How can we use design to inform people about composting and cultivate a sense of civic responsibility? How can we use innovation to promote a healthier environment and recycling system to protect our planet Earth?

The Green Shed serves as a composting station, educational kiosk, social space, and community engagement tool. Residents and passersby who wish to compost can come to the Green Shed for an easy and fun composting experience.



## NYC LANDFILL PROBLEMS AND OPPORTUNITIES

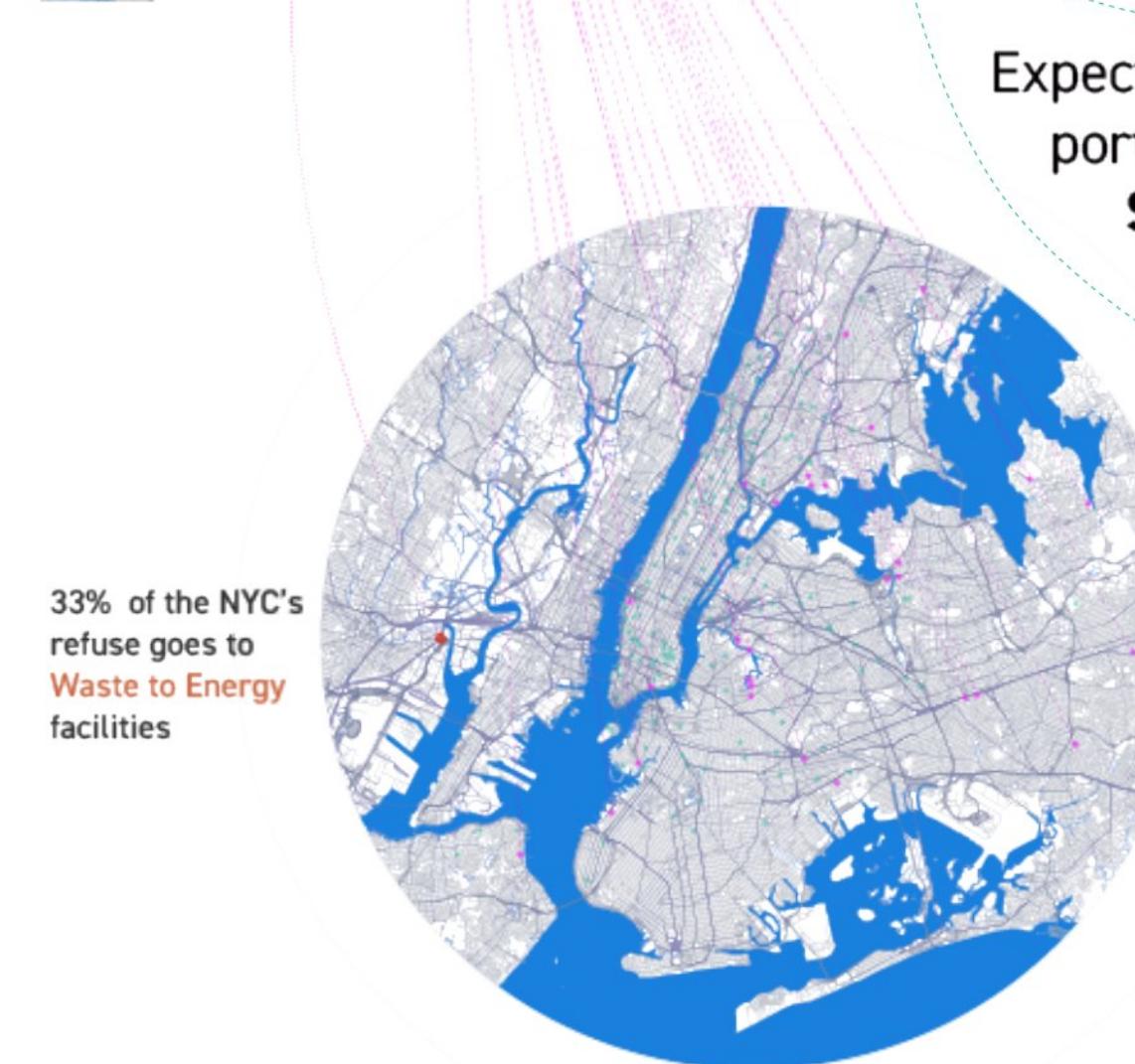
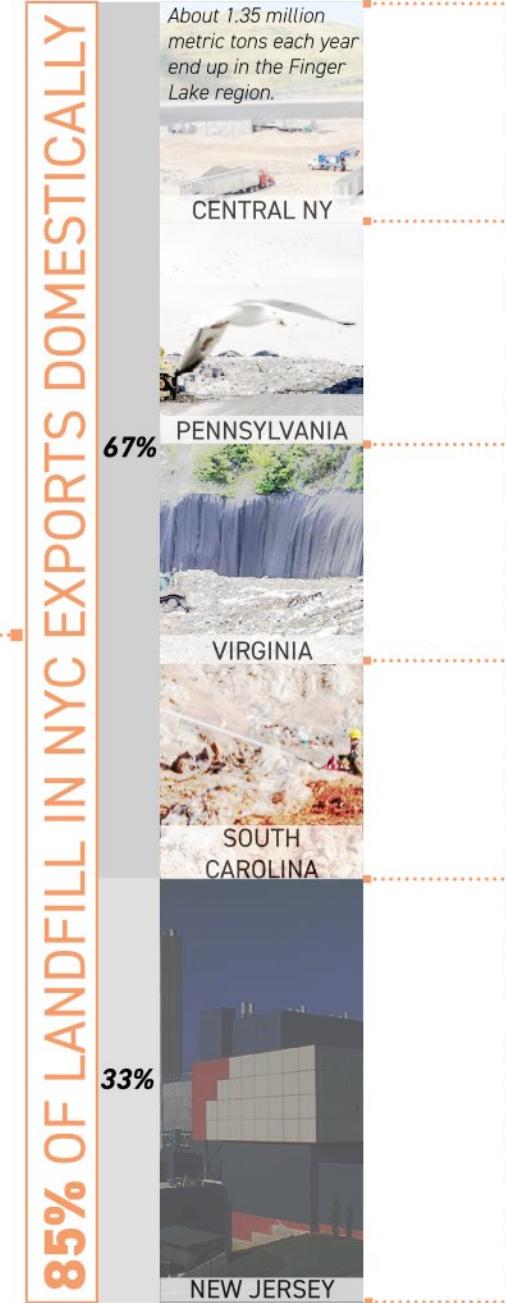


### WHY DO WE WANT TO OPTIMIZE LANDFILL SORTING?

"Landfills are the **3rd top source of methane emissions**, releasing 12% of the world's total."

"Landfill methane can be tapped, captured, and used as a fairly clean energy source for generating electricity or heat, rather than leaking into the air or being dispersed as waste."

"Methane is more than **25 times** as potent as carbon dioxide at trapping heat in the atmosphere."



### CASE STUDIES:

WHAT CAN WE LEARN FROM EXISTING TRASH MANAGEMENT SYSTEMS?



- Punt Verd, Barcelona: encouraging the usage of collection space:
  - Local/Community efforts involved
  - Creating green spot for recycling centers in plazas and park
  - Eye catching she design to encourage the use and add visual interest



- Paris Trilob Stations: incorporate trash systems with other facilities:
  - Creating and managing the waste collection as other public sharing facilities, like bike shares
  - To have designated locations for recycling and trash collection.



- Hague Submerged Containers: engaging the communities:
  - Neighborhood takes initiatives to maintain and to repair
  - Information about the implementation available for access
  - Training required for collection crews
  - Working with key infrastructure stakeholders and services for suitable spaces



- Mumbai:
  - Using WhatsApp to report (can be integrated into the governmental service app)
  - Fining for improper trashing and offenses (\$1.4 - \$2.5)

## BROWN BIN COMPOSTING PROGRAM CHALLENGES

### Difficulty in Engaging the Population

Mr. Reynoso, who represents parts of Brooklyn, said he thinks the problem is a lack of advertising and education, and the fact that the program is voluntary. His efforts to increase the compost advertising budget have been unsuccessful, he said.



### Cleaning is NOT So Convenient

Most of the people we know don't compost because of cleaning the honestly somewhat gross outdoor brown bin." A Department spokeswoman said that residents put only about 10 percent of their food scraps in the brown bins, throwing the rest in the garbage.



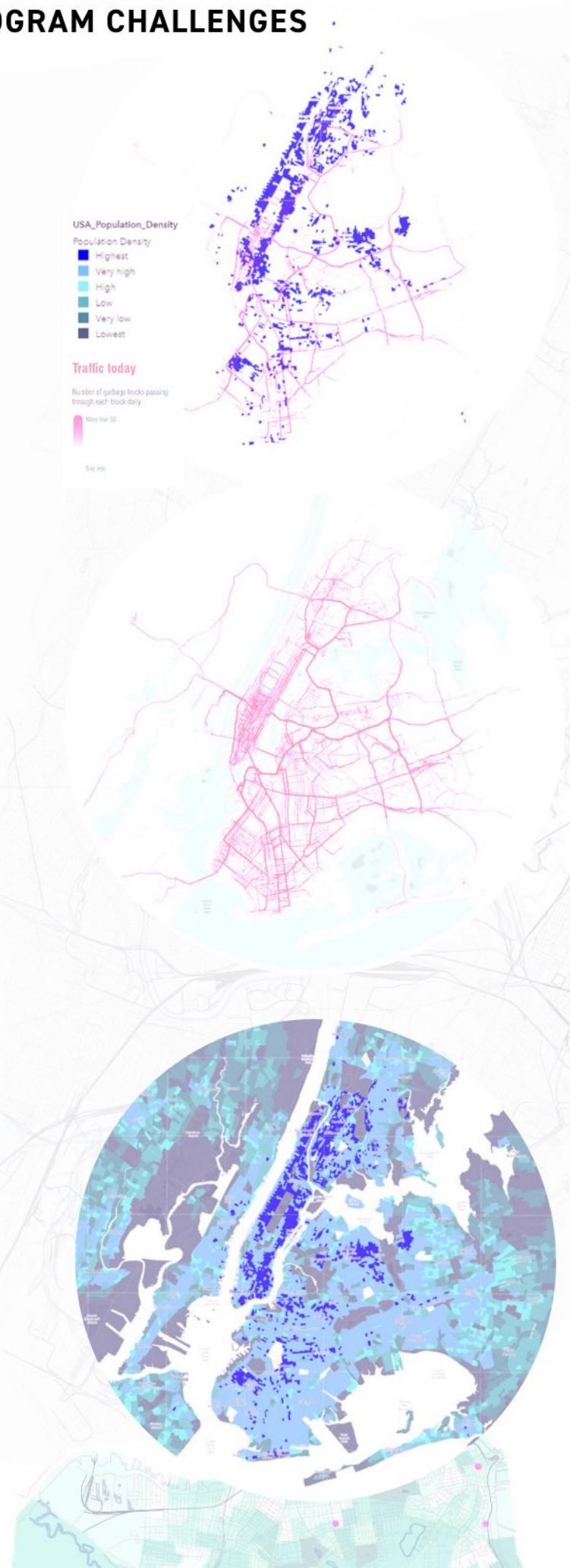
### Reduction in the Scheduled Pick-Up

Low participation in the neighborhoods that took part in the pilot program led to inefficiencies and high costs. The program will be less likely to continue due to lack of interest.



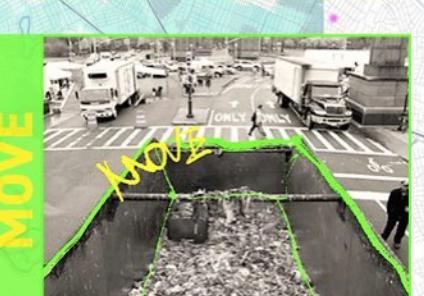
### Limitation to Apartment Building

Some buildings are too large to participate (buildings with more than nine units are still ineligible for compost programs). The owners will need to take initiatives and extra management to run composting program in their properties.



Currently, the number of composting stations is not proportional to the density of the population. The compost stations usually are place in parks, near food markets, and sometimes near transit stations

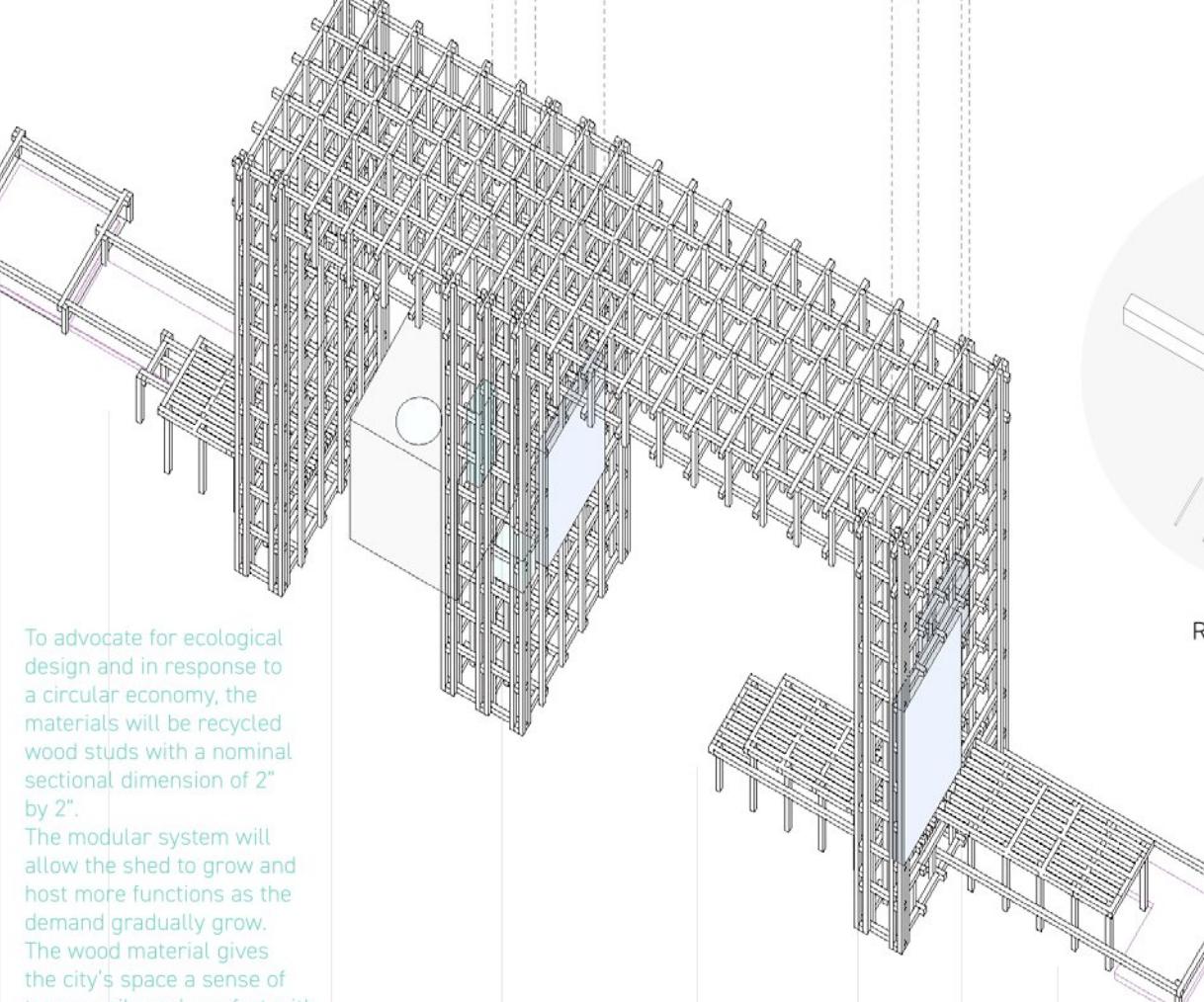
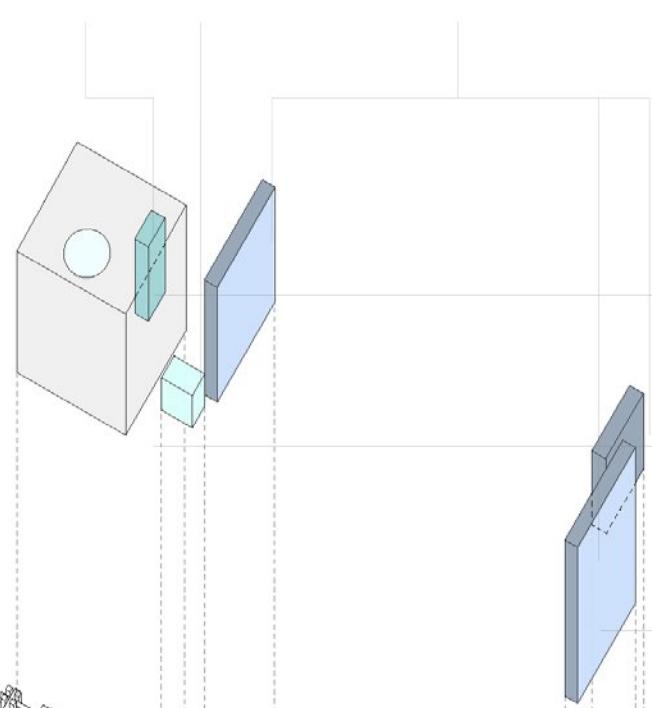
The poor communities also have less access to composting programs as you can see on this composting station vs income distribution map



## AN IDEA TO PROMOTE COMPOSTING IN NYC

Imagine The Station for Compost Becomes A Social Space With Various Programs

Compost Kiosk Handouts Box Educational Kiosks



Plants Social Space Compost Education

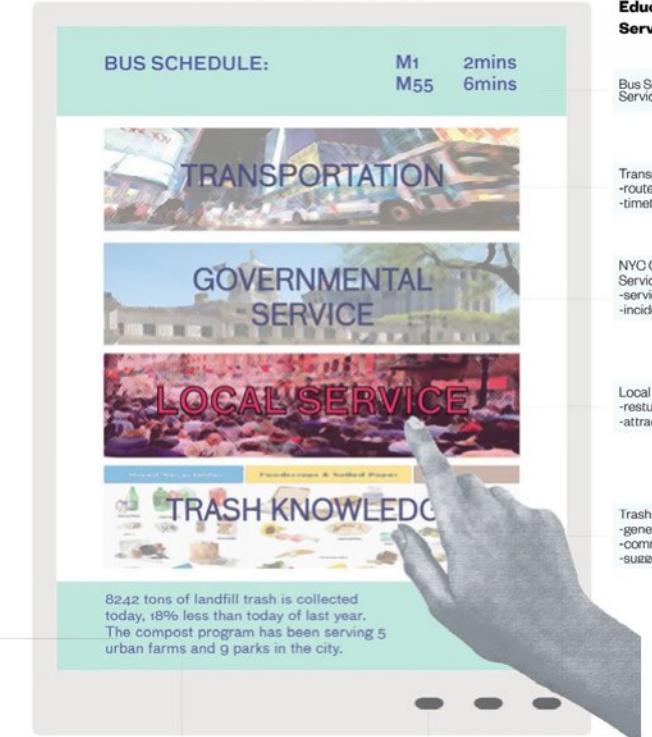
Posters



Kiosk for Composting



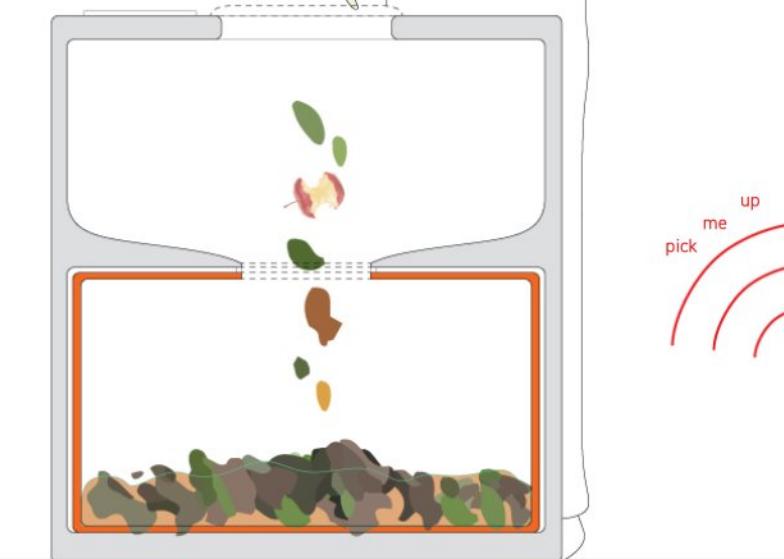
Kiosk for Bus Stop/Edu



Trash Fact Updates

USB Charging Port

Compost Processes and Community Engagement



Composting Kiosk

- Compost Reward Points
- Neighborhood Competitions
- Neighborhood Benefits
- QR Codes to login and find more information

Composting Bin:

Two layers of containers to separate the older compost that is ready to be picked up and the newer compost



Educational Kiosks Serving the Station

Bus Schedules Updates/Service Updates

Transportation Info  
-routes  
-timetable

NYC Governmental Services  
-services notices  
-incidence reports

Local Services  
-restaurants  
-attractions

Trash Knowledge  
-general guides  
-common mistakes  
-suggestions/questions

# VERTICAL CEMETERY

SPRING 2016; CORNELL CORE STUDIO; WITH PROFESSOR JIM WILLIAMSON,  
PROFESSOR LORENA DEL RÍO, & TEACHING ASSISTANT MIKHAIL GRINDWALD

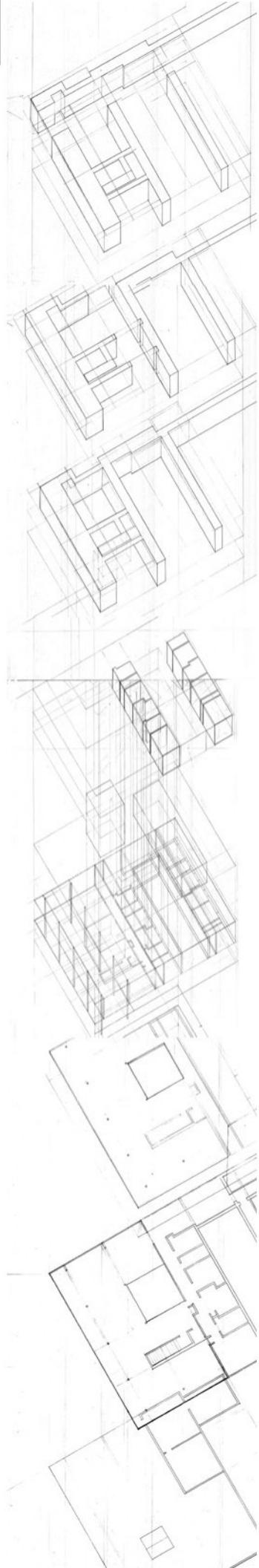
**ANALYSIS**

**ABSTRACTION**

**SYNTHESIS**

Positioned at the front of the cliff, facing the water, this architecture design of a cemetery takes inspiration from the traditional Japanese Machiya House and the Glass House by Lina bo Bardi. The design creates a space for meditating, appreciating the awe of life and having reflections. The structure occupies the horizontal top and the vertical front of the cliff. Private services locate at the top, while public programs are in front of the cliff. The grave shelves are embedded in the cliff. One circulation connects the entire landscape and provides extended viewing platforms at several height levels. In contrast, another circulation leads the way through the graveyard.

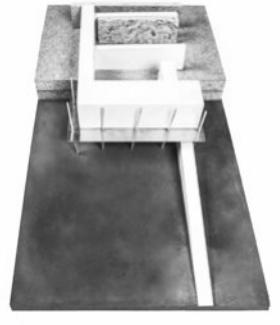




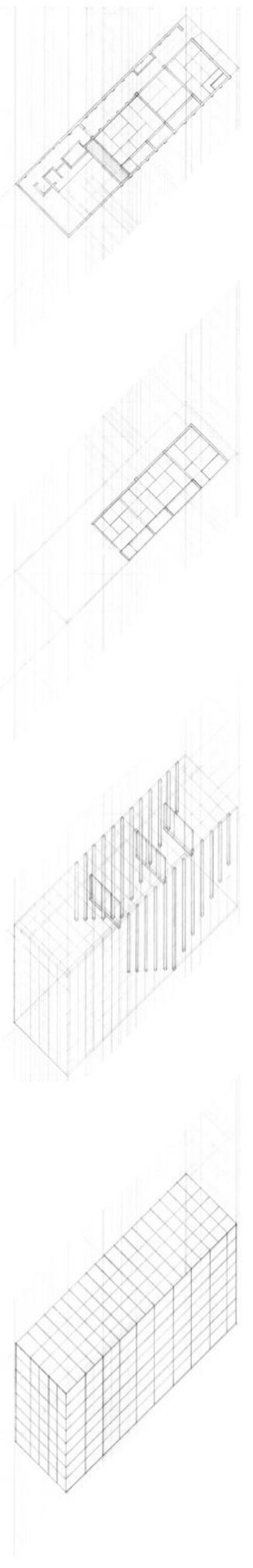
## PRECEDENT 1

Casa de Vidro  
Analysis

- There are two kinds of circulations: First has one long stripe with three short stripes that connect two parts of the building; the second one is at the front and the back part. They are separated by a long and a square voids
- The columns and metal plane showcase the lightness of the front part, while walls present the heaviness and the connection to the cliff
- The slanted circulation represents a gradual approach to the house through the slope



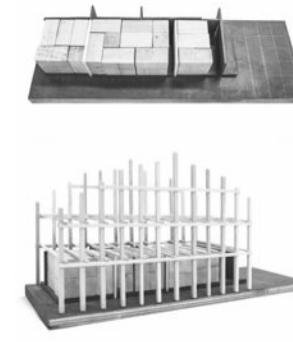
analysis model



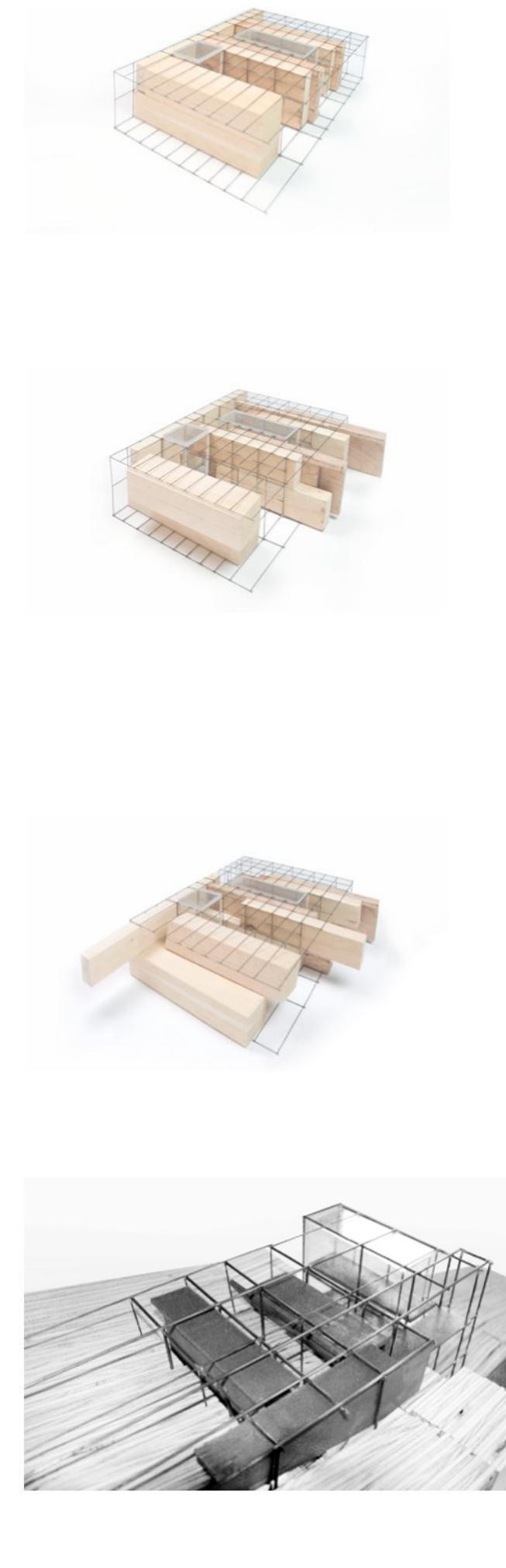
## PRECEDENT 2

Machiya House  
Analysis

- Spaces are regulated by one by two by two 3D tatami mats, with wood frames represent the 3D grid
- The garden is part of the grid
- Grid sometimes breaks off, becoming a little larger than usual, such as at the kitchen space, and kitchen space is double the normal height.
- The circulation is a long stripe with several perpendicular subdivided circulations.



analysis model



# TIME & TEMPORALITY OF MCGRAW CLOCK-TOWER

A DYNAMIC LIGHT & SOUND INTERACTIVE THEATRE

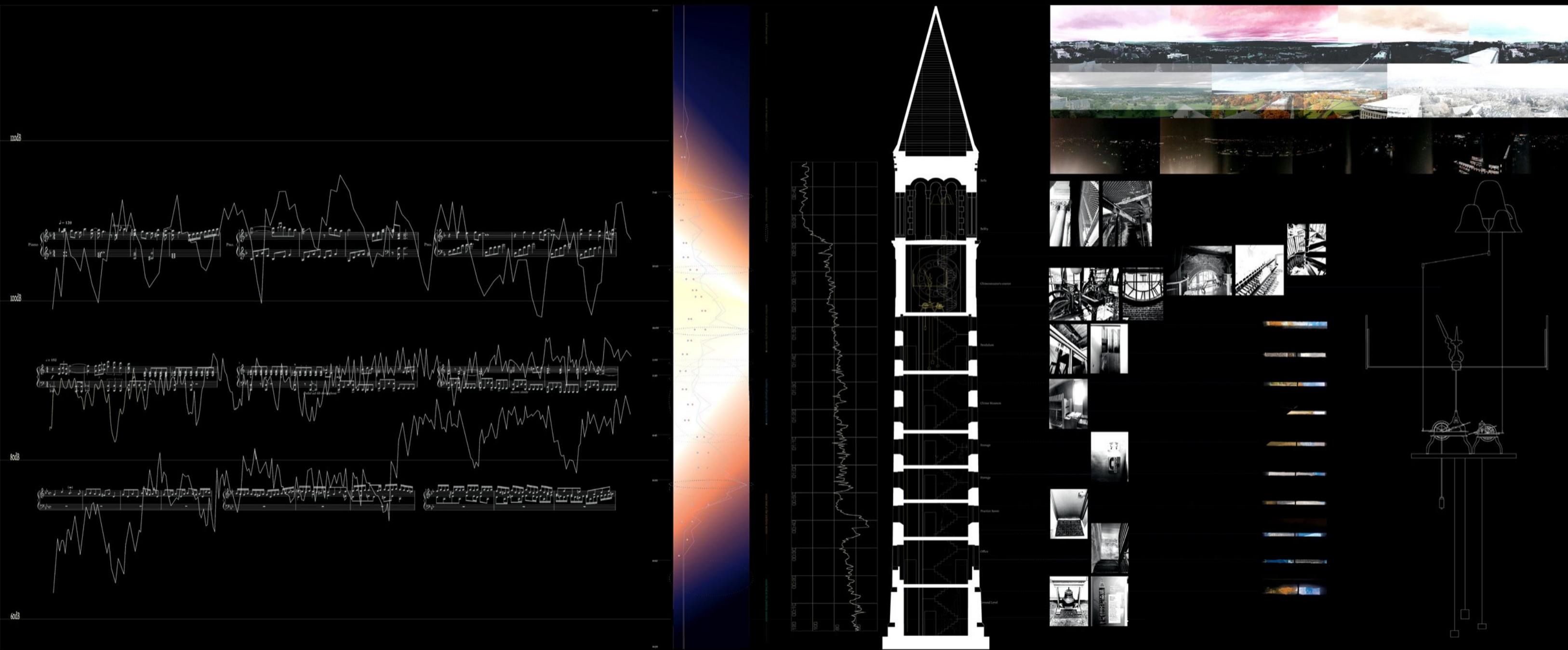
FALL 2018; ARCHITECTURE ELECTIVE; INDIVIDUAL WORK;  
WITH PROFESSOR MARIANNE HANSEN

The McGraw Tower at Cornell is a significant historic architecture that collects panoramic views of Ithaca and hosts the daily chime music. A delicate mechanism is introduced into the clock tower. As the visitor enters the building, the circular curtain of optic light fibers greets them, which captures the colors of the season and daylight into the dark space as the only source of light. The branches of optic light fibers connect to the chime keys.



**SENSATIONS**

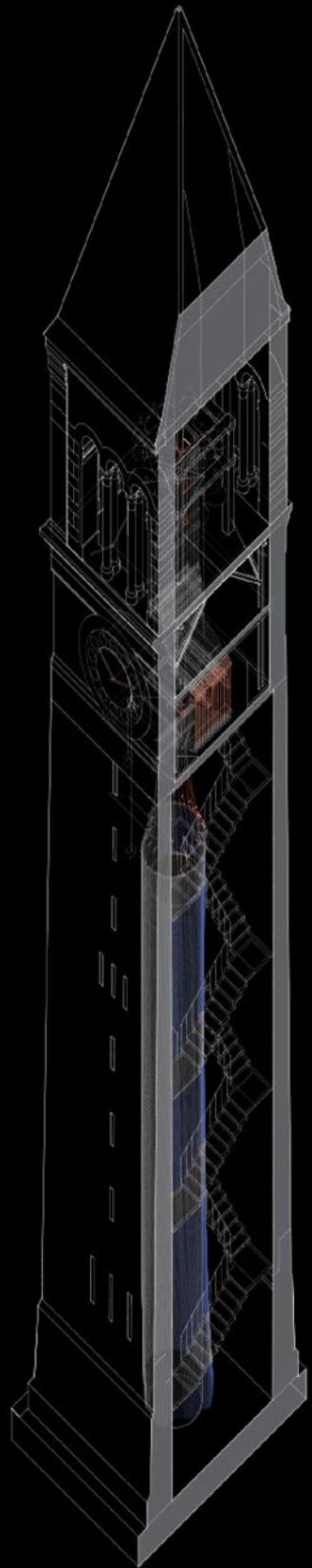
**ABSTRACTION**



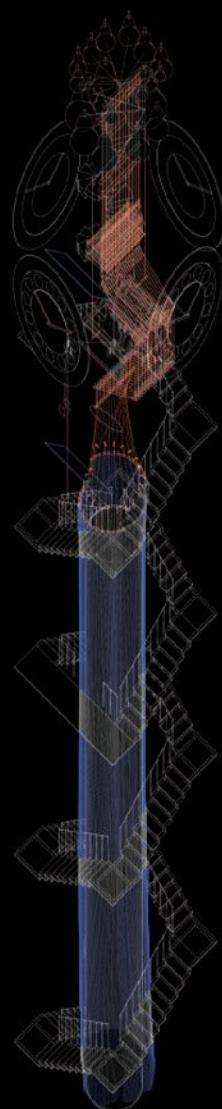
*A passage to the highest elevation of Cornell...*

*A visualization of the rhythms...*

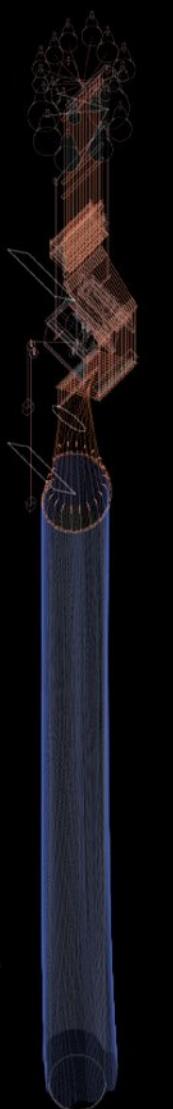
*A dance of waltz between the palettes of nature and the chime...*



Clock Tower New composition



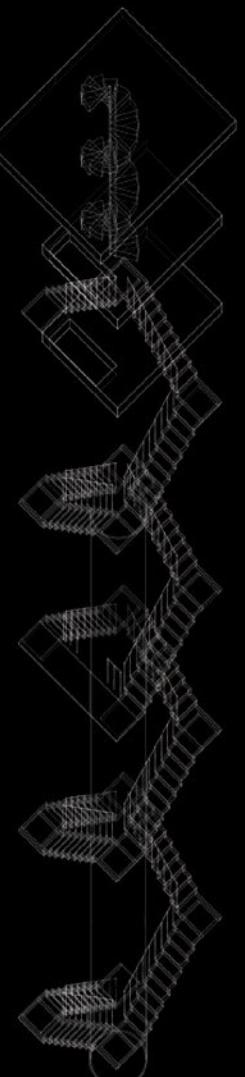
Modified Parts of the Tower



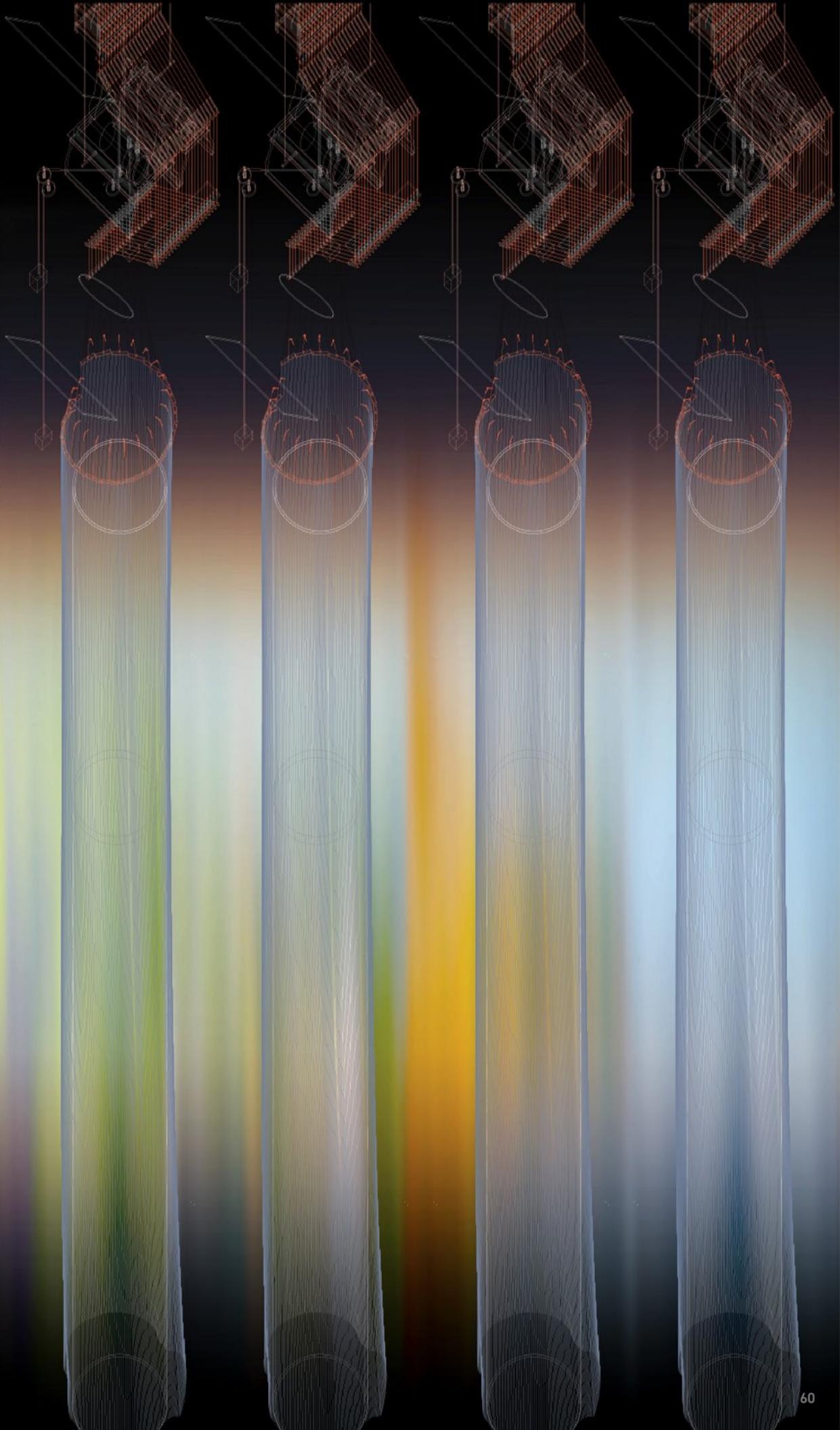
Modified Chime Mechanism



Viewing Mechanism



New Circulation



As the chime masters play 21 keys that ring 21 bells at the top of the tower., the strings of lights will dance to the music scores when the chime master plays the songs. They shall either sit at the bottom of the tower or ascend through the spiral staircase to immerse themselves in the music and light performances. Clock faces shall be transformed into a transparent body to bring down the Cayuga lake view with the periscope-like instrument and revealing the clock mechanism and chime masters' play.

# DYNAMICS OF EARTHWORMS

FALL 2015; CORNELL CORE STUDIO; WITH PROFESSOR JIM WILLIAMSON,  
PROFESSOR LORENA DEL RÍO, TEACHING ASSISTANT ANDREW FU

**ABSTRACTION**

**BIOMIMICRY**



One of the fascinating characteristics of an earthworm is its flexible and segmented body that uses two muscle groups to contract and expand for moving through spaces.

With the earthworm as my instrumental creature, I developed several tools and drawings derived from the earthworm's nature. The main elements are the flexibility and the distortions, which inspired my tool's design and my final architectural proposal. My final project, a museum space inspired by my earthworm instrument, incorporates digging into and excavating out of the group, the substantial distortions of the rooms, and the continuity of architectural language and the context. The experience of moving into and out from the ground and the distorted spaces is one of this design's unique aspects.



# STRUCTURAL MODEL

## TEMPORARY STUDIO AT KYOTO UNIVERSITY

FALL 2016; STRUCTURE II; GROUP PROJECT WITH JING WANG;  
WITH PROFESSOR MARK CRUVELLIER;

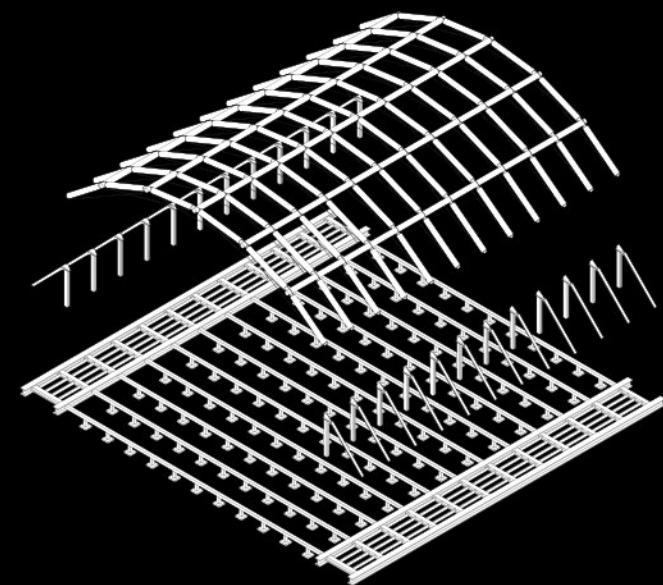
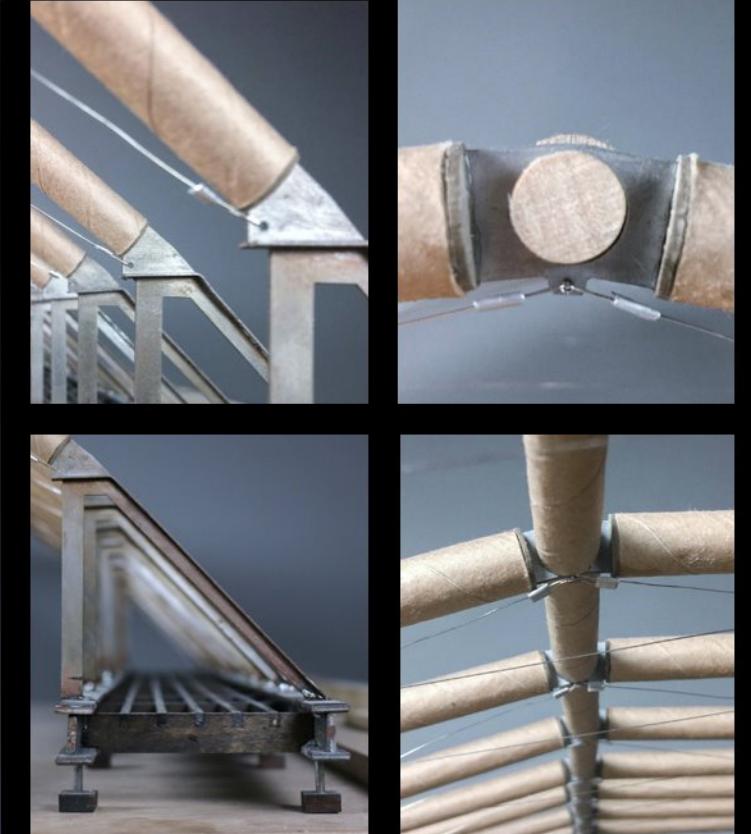
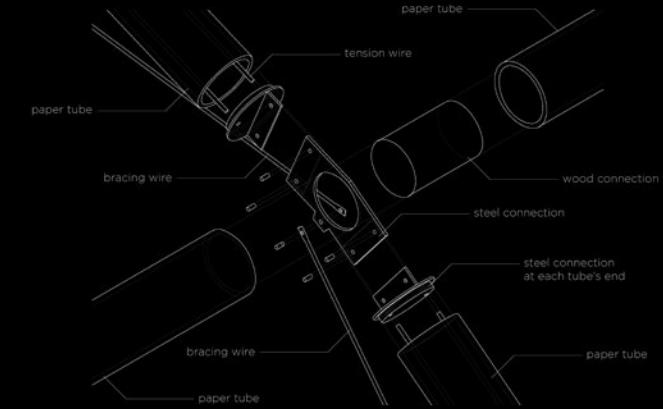
### ANALYSIS

### DETAILS



Fascinated with Shigeru Ban's Temporary Studio's humanitarian concept and material innovation, my group partner and I decided to re-create a 1:200 model of the original structure. Before making the physical model, we analyzed its arch structural form, load-bearing components, and connection details.

The primary materials of this model are paper tubes, metal sheets, basswood boards, and metal wires. Besides structural analysis, my primary responsibilities are making physical models. My tasks included preparing for waterjet, soldering and welding the metal bases, assembling the structural caps of the paper tubes, and building the arches.



# AA SUMMER DLAB 2018

SUMMER 2018; AA VISITING SCHOOL; GROUP PROJECT  
WITH TUTORS: ELIF ERDINE, GIULIO GIANNI, ANGEL LARA MOREIRA,  
ALVARO LOPEZ RODRIGUEZ, YUTAO SONG, ALICAN SUNGUR

**PARAMETRIC**

**MATERIALITY**



The research presented focuses on the geometrical, structural, and material properties within the robotic sheet metal expansion agency.

Our process includes designing cut patterns by scripting in grasshopper, cutting metal sheets with CNC, and programming pushes using robotic arms. We explored the potentials of metal expansion through endless testings for three weeks. Two pieces of expanded metals are attached to create structural depth and stability. Our outcome is an arched canopy consisting of 66 different elements. My main responsibilities includes form finding, site modeling, site analysis, making connection joints, assembling and documentations,



THANK YOU!

BECKY ZIQING XU

JANUARY 2022 • BOSTON

徐子晴

二零二二年 一月 • 波士顿