

# EVALUATING CROSS CULTURAL COURTYARD HOUSING FOR SOCIAL WELL BEING IN MANHATTAN, NEW YORK

A Thesis  
Submitted to the  
Faculty of MIAMI UNIVERSITY  
In partial fulfillment of the requirements for the degree of  
Master of Architecture  
Department of Architecture and Interior Design

by  
**Soniha Nuzrat**

Miami University  
Oxford, OH  
2023

Chair

---

Gerardo Brown-Manrique

Reader

---

John Blake

Reader

---

Jeff Kruth



© 2023

SONIHA NUZRAT

[soniha.tisha@gmail.com](mailto:soniha.tisha@gmail.com)  
All Rights Reserved

## **ACKNOWLEDGMENT**

I would like to express my sincere gratitude and appreciation to everyone who supported and assisted me during my Thesis Project.

Before anything else, I would like to thank my thesis Chair- Gerardo Brown-Manrique, Readers- John Blake and Jeff Kruth for their unwavering guidance, support, and perseverance. Their invaluable insights and knowledge were instrumental in shaping and refining my thesis project ideas.

In addition, I would like to thank the faculty and personnel of the Department of Architecture and Interior Design at Miami University for their support and encouragement throughout my academic career. Their commitment to teaching and research has been an inexhaustible source of motivation for me.

I am appreciative for the unwavering love, support, and encouragement of my husband ASM Shahedur Rahman for the encouragement and being constant source of motivation for me throughout the journey.

Lastly, I would like to thank my mother, father, sister and friends specially Ashrafun Nahar, Arundhuti Dey and Niloofar Mousavi for their encouragement and support during the design process and writing of my thesis.

Again, I would like to extend my deepest appreciation to everyone who has helped me complete this thesis.

ABSTRACT

My inspiration towards working on housing living community emerged from the environment where I grew up in Bangladesh. I lived in a neighborhood where people avoided community places and lived alone. Housing affects both the material and immaterial aspects of urban life, hence it's vital in deciding quality of life. After moving to the U.S., I noticed a lack of community gatherings in housing where I live. Community housing provides an opportunity for some to live a happier life along with other people by sharing common spaces in dwelling and community spaces. Although problems may never be completely avoided, as contrast to the isolated environment of a more conventional neighborhood. Co-living establishes a sense of community through communal kitchens, living areas, and backyards, yet each resident lives in a fully equipped apartment. Community spaces in housing's effects on physical and mental health, as well as quality of life and wellbeing, have been examined in certain papers. (Carrere, J., 2020) However, these articles have not properly analyzed the relation of community gathering spaces and the domestic spaces and also the residents' behavior towards those spaces. The focus of my thesis is to encourage communal living through the exploration of courtyard housing.

My preliminary research included precedent analysis and literature review on the community living and housing design projects to establish a baseline of best practices to alleviate social isolation and loneliness. From the precedent analysis the idea of housing community areas design and the housing units' development will be introduced. My paper will use courtyard patterns to illustrate the relationship between community spaces and residents of co-housing not only horizontally and but also vertically to reduce the mental health issue of people living there. So, my argument is not only the common shared spaces (kitchen, dining, communal hall) can bring people together but also different scaled multi-level courtyards can make the neighborhood lively and happy. I will explore these topics through housing districts in Manhattan, New York, developed during the modernist era. A thorough investigation of the urban grid, open spaces, roadways, and the connectivity of the housing area with the communal spaces will be done at the site, which was selected from the New York City Housing Authority (NYCHA). These investigations would be useful in identifying the housing shortage in Manhattan's East Harlem neighborhood. As a result, these analyses will continue to constitute a rich part of the design intervention of this project.

## TABLE OF CONTENTS

ACKNOWLEDGMENT .....	i
ABSTRACT .....	iii
BACKGROUND .....	01
ANALYZING THE COURTYARD IN HOUSING .....	02
IN MODERN ARCHITECTURE, HOW IS THE CONCEPT OF COURTYARDS USED?.....	05
COURTYARD AND ITS BENEFIT .....	05
THESIS QUESTION .....	07
THESIS STATEMENT .....	08
RESEARCH AIM .....	08
ARGUMENT: HOW DO COURTYARD WILL MAKE DIFFERENCES .....	10
PRECEDENT ANALYSIS .....	11
SITE ANALYSIS .....	13
CONCEPTUAL MASTERPLAN DEVELOPMENT .....	18
PROGRAM DEVELOPMENT .....	22
DESIGN OF ELEVATED URBAN PLATFORM .....	24
PLACE MAKING .....	27
COMMUNITY FACILITIES .....	33
RETROFITTING AND THRESHOLD DESIGN .....	38
DESIGN AND DEVELOPMENT OF NEW HOUSING BLOCK .....	39
CONCLUSION .....	51
APPENDIX	
Board 01 .....	a
Board 02 .....	b
Board 03 .....	c
Board 04 .....	d
Board 05 .....	e
Board 06 .....	f
Board 07 .....	g
BIBLIOGRAPHY .....	i
LIST OF FIGURES .....	j

# EVALUATING CROSS CULTURAL COURTYARD HOUSING FOR SOCIAL WELL BEING IN MANHATTAN, NEW YORK

## BACKGROUND

The idea of this thesis proposal came to my mind from a childhood inspiration. While visiting my grand mom's house in childhood I used to love the houses and courtyards how people used to sit around and use that. My understanding of the necessity was hazy at the moment. My undergrad thesis focused on low-cost housing, and that experience piqued my interest in housing initiatives even further. To present it as my thesis, I need a clear picture of the concept behind it. Every time there is a population increase, there is a need for more housing. The clusters of homes and courtyards, on the other hand, provide me a good notion for a design thesis.

Housing is a well-known socioeconomic predictor of health. Home cost, steadiness, feature, and sensitive attachment to housing, as well as the cultural and psychosocial aspects of neighborhoods, all influence health outcomes. (Krieger and Donna 2002)<sup>1</sup> While the evidence on the negative impacts of housing on health and wellbeing has been examined, little has been done to assess the health benefits of housing arrangements in which people live together under a community on purpose. When compared to residents living in solitary arrangements, finding demonstrates that shared housing arrangements minimize loneliness and boost subjective wellbeing among the elderly. (Krieger 2002, Bonnefoy 2007, Ana, Jordi, 2014)<sup>1,2</sup> People are getting more dependent on the work spaces rather than houses. The houses are just for sleeping. This idea broke a lot in the time of Covid. People need houses which will merge with nature and create social bonding with other residents. Eventually, they have to live and function in that space. In my opinion, having the social interaction in the neighborhood where they live can make them feel happy and better physical and mental health.

The rapid urbanization (Fig. 1) and the increase of housing is getting higher day by day and to meet the density housing demand is very high globally. People feel comfortable living in private houses with all sorts of amenities of their own. However, the rate of population growth indicates that we may soon be in trouble. Housing demand ascended for a variety of reasons, including population increase, land use, food production, and carbon emissions. But, aside from them, the most significant factor, in my opinion, is mental health of residents. A piece of land — not so very big, with a garden and, near the house, a spring that never fails, and a bit of wood to round it off.' 'This Is What I Prayed for' Wrote by The Roman Poet Horace.

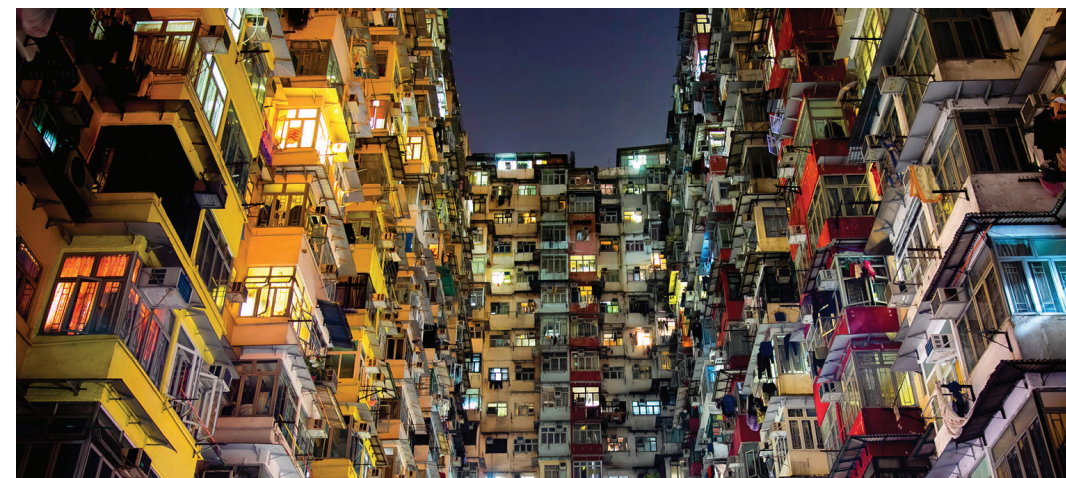


Fig. 1: Rapid Urbanization

Source: <https://www.ccn.com/hong-kongs-housing-market-skyrockets-but-developers-are-panicking/>

<sup>1</sup> Krieger, James and Donna L. 2002, Higgins, Housing and Health: Time Again for Public Health Action, *Am J Public Health*. 92(5): 758–768.

<sup>2</sup> Ana M Novoa <sup>1</sup>, Jordi Bosch <sup>2</sup>, Fernando Díaz <sup>3</sup>, Davide Malmusi <sup>4</sup>, Mercè Darnell <sup>3</sup>, Carme Trilla <sup>3</sup>, 2014, Impact of the crisis on the relationship between housing and health. Policies for good practice to reduce inequalities in health related to housing conditions, *Gac Sanit. SESPAS*: 28:44–50.

As mentioned before the idea of courtyard was always my interest to work with. The activities in the courtyard have many benefits to describe. That inner court can bring sunlight physically to the house and mentally to the mind. Courtyards have been a prevalent design feature in many regions of the world for thousands of years, especially in homes. When it comes to day-to-day activities, the courtyard serves as both a gathering spot for residents and an escape. (Edwards 2006)<sup>3</sup> courtyards can be used as inner garden of a housing for residents uses. Courtyards can provide different advantages such as gathering spaces, social interaction space for adults, play space for children. The courtyards can be used as daily chore spaces according to its size and location. Jo Williams has compiled an excellent analysis of relevant literature of design variables that hearten social contact of residential settings. To present, finding demonstrates that cohousing reduces senior isolation, improves residents' quality of life, and improves physical and psychological health. (Glass 2013)<sup>4</sup>

After coming to U.S. I was bit shocked to notice that people don't interact much in their common courtyard spaces of the housings. The only purpose it serves is for greeneries. This influenced me to work more with this courtyard concept in the co-housing. To improve the mental health with the help of courtyard in a co-housing is the main goal of this thesis paper. The research will be conducted to incorporate the courtyard concept in a more intense way with the co-housing concept.

## ANALYZING THE COURTYARD IN HOUSING

The courtyard is a traditional architectural feature that helped to determine the climatic, physical, and psychological ambiance in the courtyard dwelling. The oldest type of dwelling is courtyard housing. Observed at higher levels of courtyards, which form a cross-world pattern, can be found in ancient civilizations dating back 5000 years, from the Egyptian metropolis of Kahun before 2,000 BCE. (Oliver 2003)<sup>5</sup> The features of courtyard dwelling are affected by environmental conditions and lifestyle of a group of people in a certain place; for example, courtyards ( Fig. 02) can be used as an inside garden or as the house's central point. Due to influence of Spanish colonialism, the courtyard first appeared on the West Coast in the modern era, in Southern California. Another viewpoint claims that the cause for the many architectural styles in Los Angeles is due to the impact of the cinema set and film business. (Stefanos, Roger & James 1996)<sup>6</sup>



Fig. 2: Courtyard Feature in a housing of New York City

Source: <https://nyc.urbanize.city/post/innovation-qns-development-gets-planning-commission-sign-astoria-queens>

Courtyard design varies in different countries according to the climate and tradition. The philosophy of courtyard was to engage human activity in outdoor areas. The working space outside the house depends on the spaces size and design. the variation of size indicates different activity in courtyards. In the domestic setting courtyard houses the space allows women to be by themselves in Asian countries like Bangladesh, India. In Bangladesh women use the courtyards for cooking, sewing. The children play on the small courtyards around their mother and the father use the large courtyards for meeting purpose. Though it's common in rural setting but the concept is used in the urban context housings. There are many benefits of courtyard in the housing areas. such as- social benefits, psychological benefits, cultural benefits, architectural benefits. Since Marcel Breuer, Duncan, 1973, noted that in 1956, the binuclear court had transformed into wide, slender terraced house in the country, the courtyard style has expanded from the West Coast to the East Coast of the United States. (Das 2006)<sup>7</sup>

The Roman atrium house, like many ancient Mediterranean dwellings, has a tendency toward a layout that emphasizes a central courtyard. It is possible that the Romans drew architectural influence from the Greeks, as well. Rather than a continuous sequence of influence, Roman architecture responded to the various streams of impact that dominate the Mediterranean. There could be a decorative landscape, fountains, artwork, or a practical kitchen in the middle of the peristyle (or a combination of these elements). The peristyle's size and layout can vary greatly depending on size of the home.

7 Das, N. 2006. Courtyards houses of Kolkata: Bioclimatic, typological and socio-cultural study. Kansas State University.



Fig. 3: House Pattern. Image Courtesy of Fabiola Morcillo

Source: <https://www.archdaily.com/787926/1989-architectural-space-through-illustration>

3 Edwards Brian ,2006, Courtyard housing: past, present and future: Taylor & Francis.

4 Glass Anne P., 2013, Lessons Learned From a New Elder Cohousing Community, Journal of Housing For the Elderly, 27:4, 348-368, DOI: 10.1080/02763893.2013.813426

5 Oliver, P., 2003, Dwelling: The House across the world. Oxford: Phaidon Press Ltd

6 Stefanos, P., Roger, S., & James, T., 1996, Courtyard Housing in Los Angles: A Typological Analysis.



## IN MODERN ARCHITECTURE, HOW IS THE CONCEPT OF COURTYARDS USED?

This principle of courtyard has been widely utilized in modern architecture. Aside from providing light and ventilation, courtyards have begun to add value to the home. They provide a barrier between places, bringing nature into the home and adding aesthetic value. The housing blocks designed with a courtyard inside can create significant changes in space. The light and air circulation can make the living spaces interactive. The courtyard spaces can gather people of the housing formally and informally. The small courts in between the houses will be used for the visual and physical interaction of adults and children. The visual connectivity through the glass facades towards the courtyard can make people feel engaged with other people. The impact of courtyard is not only the use of it but also as an open pocket in rigid urban forms.

## COURTYARD AND ITS BENEFIT

Over time, several welfares of the courtyard were highlighted by researchers as they defined courtyard social and ecological functions in the courtyard house's environment. There are psychological, cultural, religious, economic, climatic, and architectural advantages to these changes. (Abass, Fatma & Ismail, Lokman & Solla, Mohmed 2016)<sup>8</sup>. During the day, Courtyard serves as an extension of the kitchen, and at night, it transforms into a living space for entertaining visitors. All family members should have a place to gather and be encouraged to act as a unit. When the court is visibly separated, for example, by screen or enclosed entrances. Throughout the night, when the weather is suitable for outdoor movement, a place to sleep. Enclosure features provide acoustical isolation and act as a sound barrier between the courtroom and the surrounding area.

Architects should incorporate courtyard characteristics into the building's design as a way of promoting healing. Some examples of these characteristics include trees and flowers, water, and a wind tower. Other examples include pavement, pavement colors, and shaded areas. The mental health can be recovered by the help of this openness of the housing and create social interaction in between the households. The idea of courtyard must be included in the housing areas to make it more playful. In many cases, multiple courtyards are utilized. Typically, this is done to separate the internal and external areas of the home.

Symbolically and religiously, the courtyard holds great significance. People have always been drawn to the house's central courtyard, which is both open to the sky and completely enclosed by the house's outside walls. One of the most important features in any home is its courtyard, which serves as a gathering place for family and friends, as well as a place of sanctuary from the outside world. (Blaser 1985)<sup>9</sup> Courtyards are typically located in the middle of buildings and dwellings, linking various spaces and purposes. With its center location surrounded by varied landscape and tree components, courtyards hold significant social and professional value.

Human evolution (Fig. 4) occurred in a natural environment, mainly in sensory world. Elements of ancestral habitats in built environment results in positive effects and relaxed physiological and psychological states.



Fig 4: Human Evolution and Triggers

<sup>8</sup> Abass, Fatma & Ismail, Lokman & Solla, Mohmed. 2016. A review of courtyard house: History evolution forms, and functions. Journal of Engineering and Applied Sciences. 11. 2557-2563.

<sup>9</sup> Blaser, W. 1985. Atrium: Five Thousand Years of Open Courtyards. New York: Wept and Co. AG, Basel.



Evolution of housing (Fig. 5) started since people felt the need for housing and other community amenities nearby, the need for shelter encouraged the development of communities. A cluster formation surrounded by courtyards eventually developed, but tower blocks eventually began to fill the internal spaces.

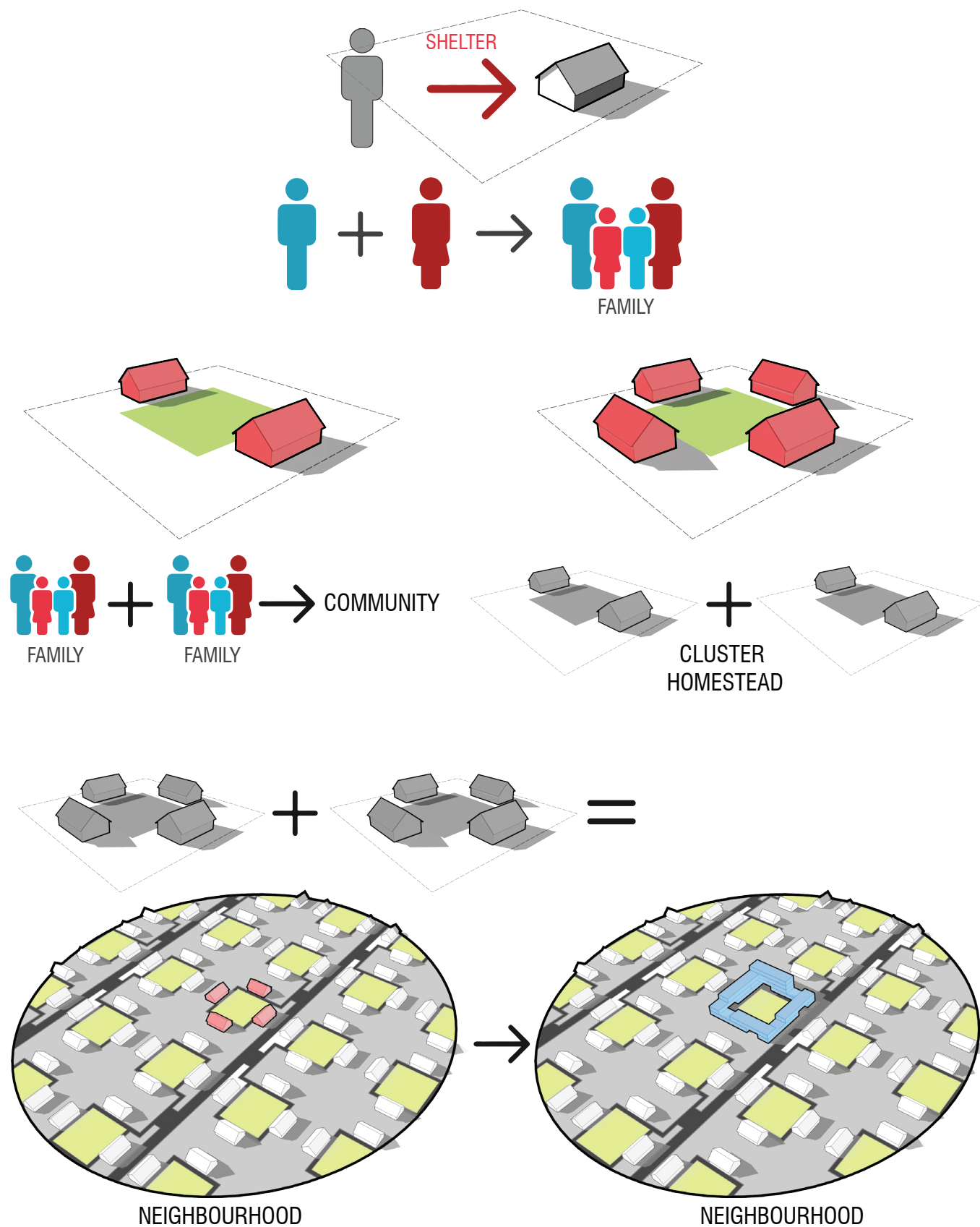


Fig 5: Evolution of housing from the early age



## THESIS QUESTION

How can we incorporate courtyards or open interactive spaces in housing areas or neighborhood to improve the interactions of the residents living there and are those spaces only dedicated to the residents?

So, what's the real scenario? Is it the green courtyard with people and activity we imagine with butterflies, flowers and people? But the reality is something else we see. The gated courts, limited access due to safety and security. Why can't we get some free spaces to get engaged and see other people?

## THESIS STATEMENT

In urban context, community housings should incorporate public spaces and courtyard areas with activities to improve the overall well-being of the residents and foster a sense of belonging in the community.

## RESEARCH AIM

My research aimed to enhance social interaction among the residents and create a sense of community by designing public spaces and courtyard areas which can help improve the overall well-being of the residents and foster a sense of belonging in the community. The addition of the urban platform and the multi-layered courtyard spaces can improve the housing for the residents' physical and mental health. The community's amenities, open green spaces, play areas, and venues for cultural events can give the area life and make it more vibrant.



Source: <https://www.pinterest.com/pin/143974519317309582/>



Source: <https://www.yellowtrace.com.au/courtyard-house-glebe-joe-agi-us-cox-architecture-alterations-and-additions/>

## ARGUMENT: HOW DO COURTYARD WILL MAKE DIFFERENCES

The form and size of courtyard and the space layout in the adjacent spaces with dwelling units will make the difference. The layers of different courts in the different floors of the housing will bring the gathering spaces in the housing. These interactive courts will vary the location. The large spaces will be used for community events and programs. The small courts or spaces inside the houses will be shared and used for vegetation and interaction in various ways. It'll be the part of housing and useful for women and children in their daily lives. The courts will not be typical open spaces but will be that necessary space of a house to be used frequently.

Source: <https://www.pinterest.com/irrelephantsims/oasis-springs/riad/>

# PRECEDENT



Image Source: <https://www.janvanderveken.be/work/flemish-building-fund/>

## PRECEDENT ANALYSIS

Precedent is the main idea of analyzing this thesis. Taking the case studies and utilizing the key points from them will be the main aim. In the precedent analysis I've figured out their important points which I can utilize in my thesis further such as- community interaction spaces, layered courtyard spaces, energy savings etc.

Before developing the design process I've looked into several precedents those were helpful to make the narrative bolder and strong. The precedents from Bangladesh- Ruplal house old historic building with courtyard spaces blended with the indoor and outdoor spaces, Rizia Porompura- their multi layered courtyard approach to connect families, Twin parks northwest the courtyard having the spaces for residents, the small courtyard spaces of the Valley of MVRDV, Staggered formal approach of the Via Verde the green way in New York, the Robin Hood Gardens by peter Smithson inspired me to work on the gathering spaces and the new housing design.



FIG 6. TWIN PARKS NORTHWEST, THE COURTYARD  
Prentice & Chan, Ohlhausen



FIG 7. RUPLAL HOUSE, Old Dhaka, Bangladesh



FIG 8. RIZIA POROMPORA, Cox's Bazar, Bangladesh  
Ar. Ahsanul Huq

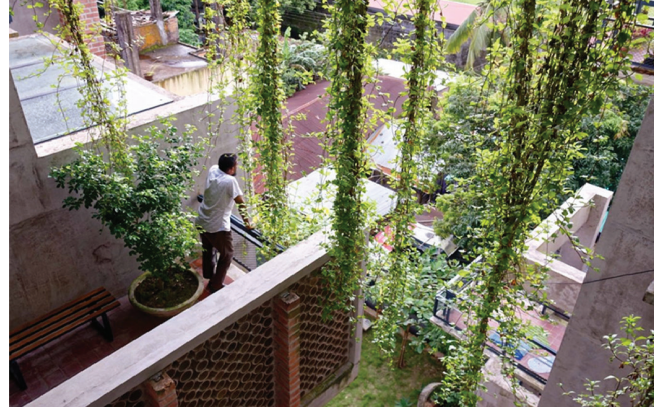


FIG 9. RIZIA POROMPORA, Cox's Bazar, Bangladesh  
Ar. Ahsanul Huq



FIG 10. VALLEY, Amsterdam, Netherlands  
MVRDV



FIG 11. VALLEY, Amsterdam, Netherlands  
MVRDV

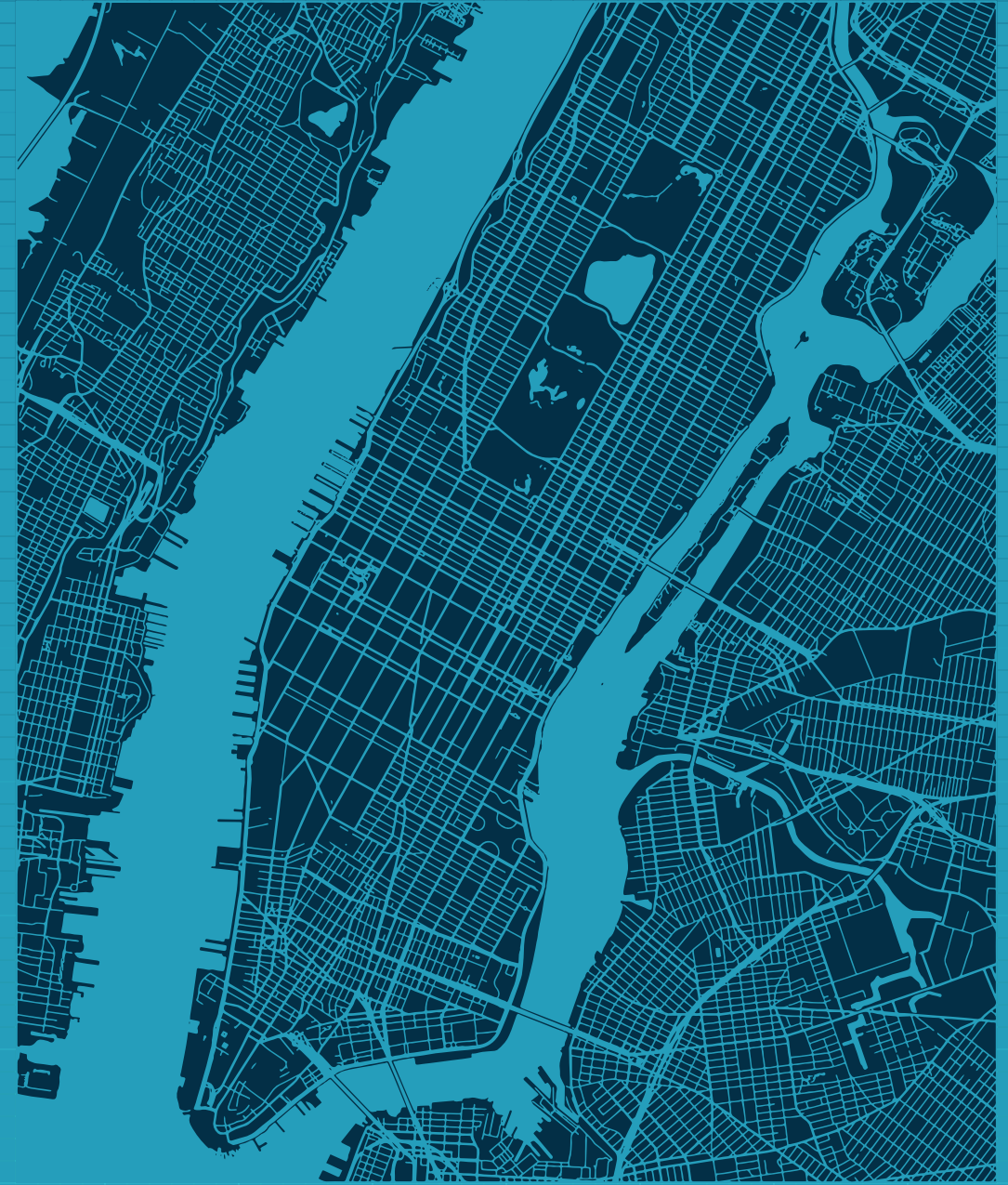


FIG 12. ROBIN HOOD GARDENS, London, UK  
Alison and Peter Smithson



FIG 13. VIA VERDE – THE GREEN WAY, New York, NY, USA  
Dattner Architects

# S I T E



Manhattan map, New York  
Image Source: [https://stock.adobe.com/search?k=detailed+new+york+city+map&asset\\_id=456217449](https://stock.adobe.com/search?k=detailed+new+york+city+map&asset_id=456217449)

# SITE ANALYSIS

East river houses was created as a part of the New York City Housing Authority (NYCHA) mid- 20th Century construction program. The housing complex has difficulties with maintenance and upkeep recently, along with safety and security. In order to increase the quality of life for inhabitants, NYCHA has put in place a number of initiatives such as community engagement programs, better security measures, and building system repairs and upgrades. ("Private Developers to Renovate 1,673 NYCHA Public Housing Units in East New York," n.d.) ( Fig 5) The housing courtyards are currently not used by the residents due to safety purpose and can be improved with community amenities to develop the social interaction spaces.

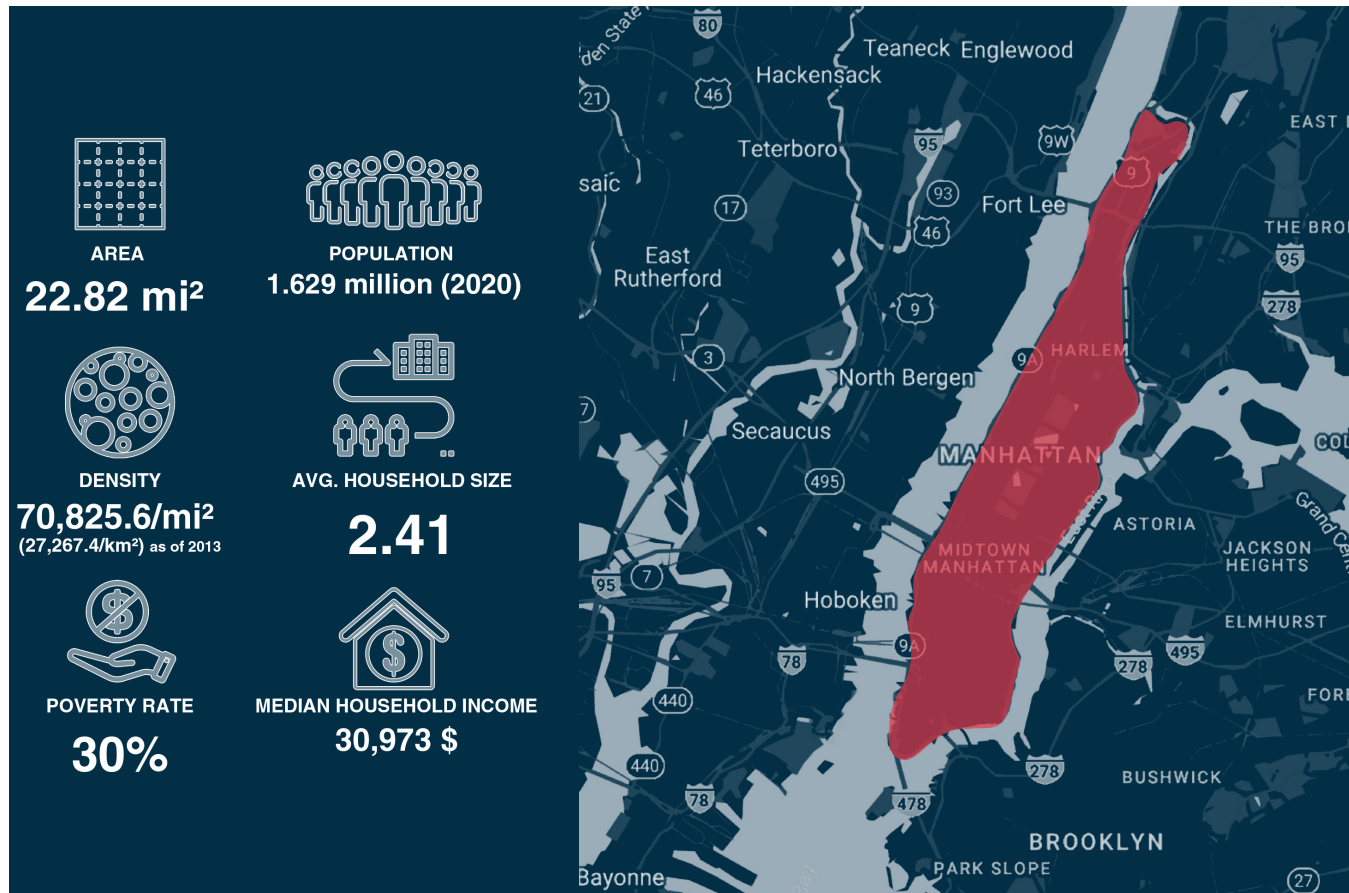


Fig 14: Manhattan demographic

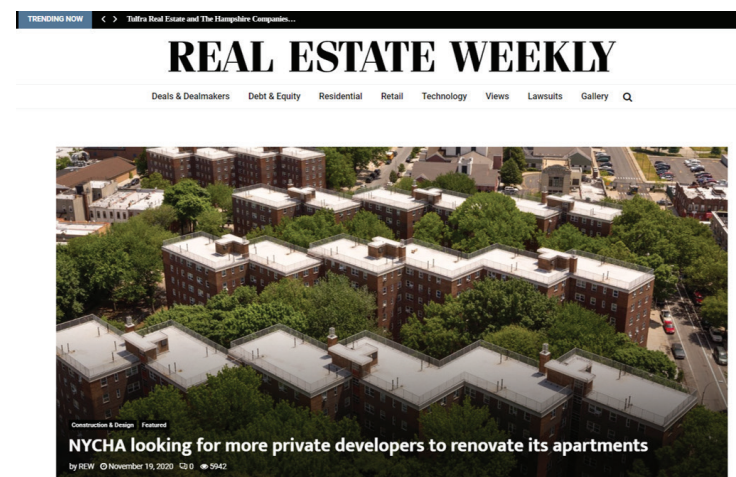


Fig 15: News Article for housing developments of NYCHA

**Archinect** News  
Joshua Homer ~ K-12 Education Renovation, Singl

Private developers to renovate 1,673 NYCHA public housing units in East New York

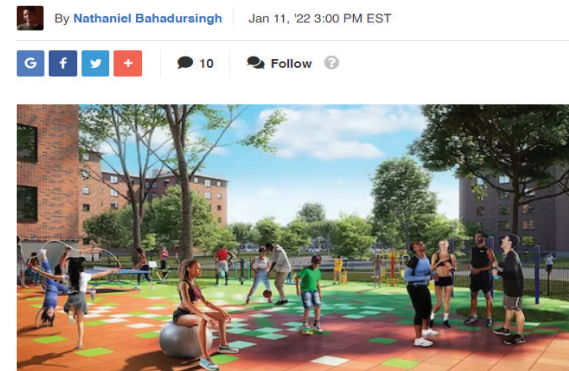
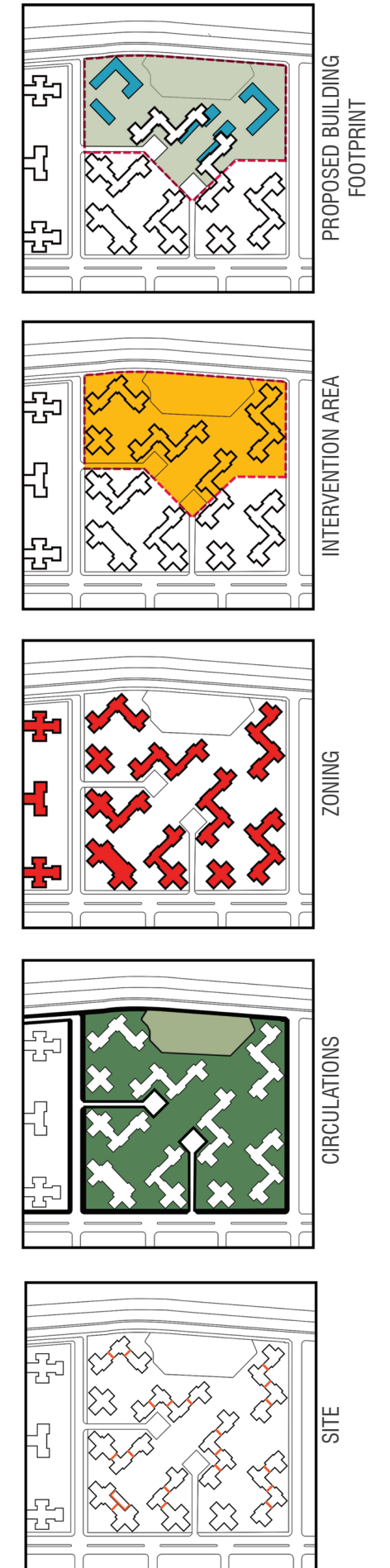


Fig 16: News Article-Private Developers to Renovate NYCHA Public Housing Units in East New York



Fig 17: East River Houses, Manhattan New York



Moving towards the Site Analysis in terms of connectivity to the Harlem River, the main roads connecting the site to the surroundings, the node points and access to the site, utilizing maximum daylight were important (Fig 6) design aspects. The key idea was to connect the river to the people of the housing and other neighborhood as well.



Fig 18. Courtyard Areas EAST RIVER HOUSES, NYC  
Source: Gerardo Brown- Manrique



Fig 19. Aerial View of EAST RIVER HOUSES, NYC

Source: <https://www.nytimes.com/2015/12/09/nyregion/report-details-systemic-failures-in-communication-between-police-and-housing-authority.html>

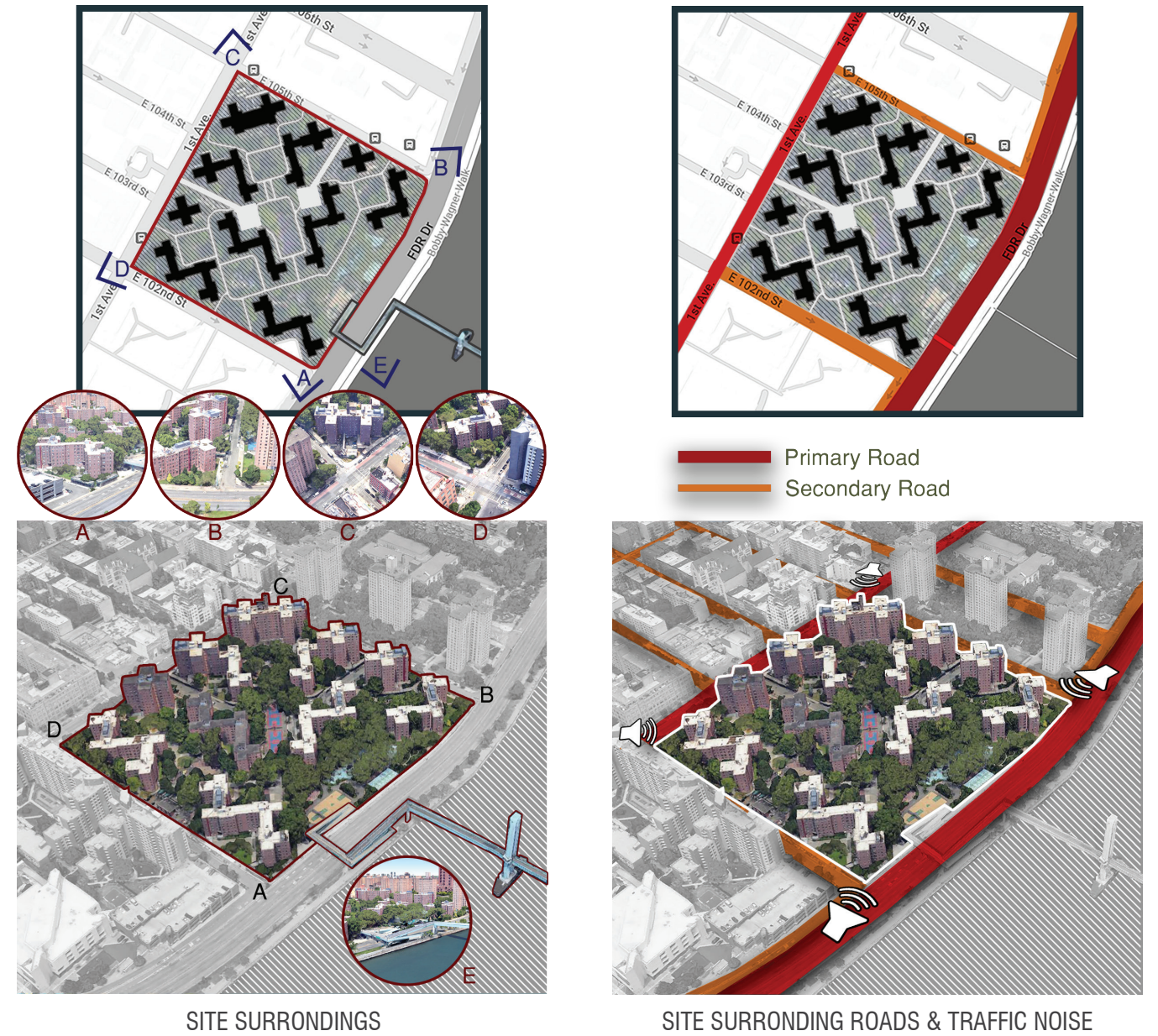


Fig 20: Site Analysis of Surroundings, roads and traffic noise

CONCEPTUAL MASTERPLAN DEVELOPMENT

For the design purpose I've focused on the masterplan development and saw different aspects of the site about the river connectivity, creating public axis into the site, increase the visibility. I've started designing the masterplan with several ideas which includes- creating urban platform in the existing area of the housing center and improving connection to river, design many options for masterplan to observe the possibility and designing two new housing blocks on the south-east side of the site which is near to river. The concept of Fine-grain Low rise high density housing which was proposed by Edvin Stromsten, Ricardo Scofidio, and Felix Martorano. Second place entry to the east Harlem housing competition 1963. I tried to incorporate that fine grain theory in the masterplan development and the housing block development as well by introducing small elements and spaces.

I've fixed idea of the urban platform which is on the 1st floor of the housing can create multilayered spaces with ground floor to other floors residents by having community facilities. I wanted to make the spaces available for the other neighborhood people as well to involve them with the activities.



Fig 22: Masterplan Development- Phase 1

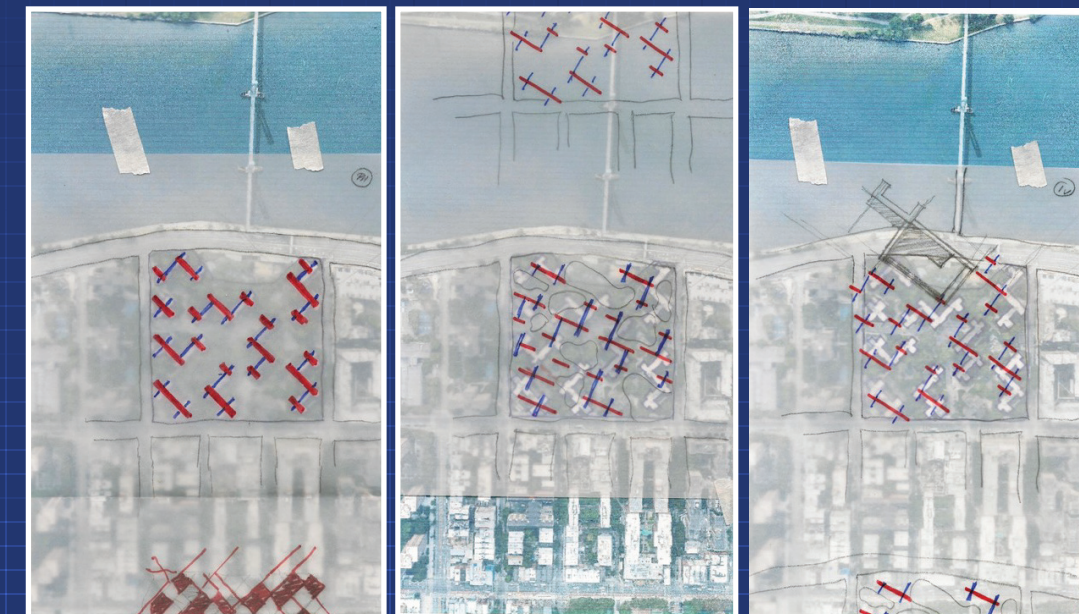
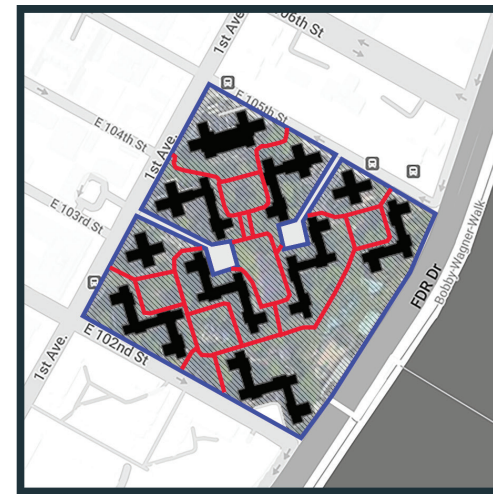
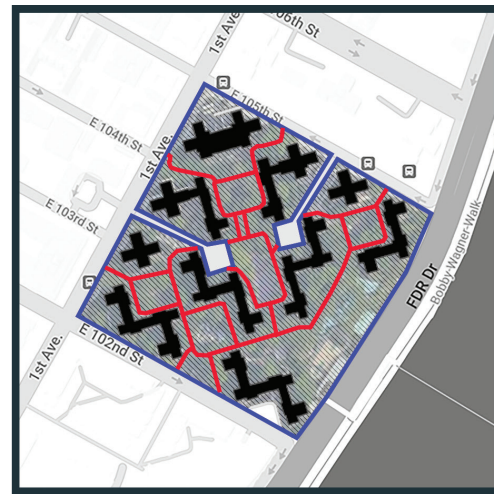
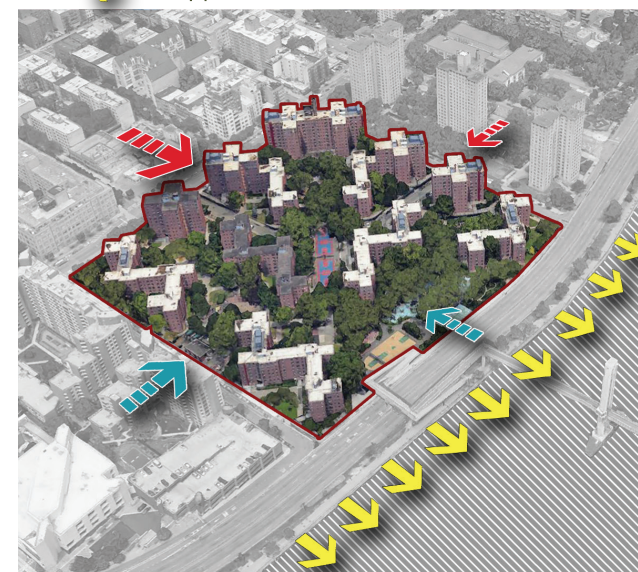


Fig 23: Masterplan Development- Phases (2,3 & 4)



- Primary Pedestrian
- Secondary Pedestrian

- - - Primary Site Approach
- - - Secondary Site Approach
- Approach from the River Side



INTERNAL CONNECTIONS & PEDESTRIAN PATHWAYS

SITE APPROACHES

Fig 21: Site Analysis- Internal connections & pedestrian pathways

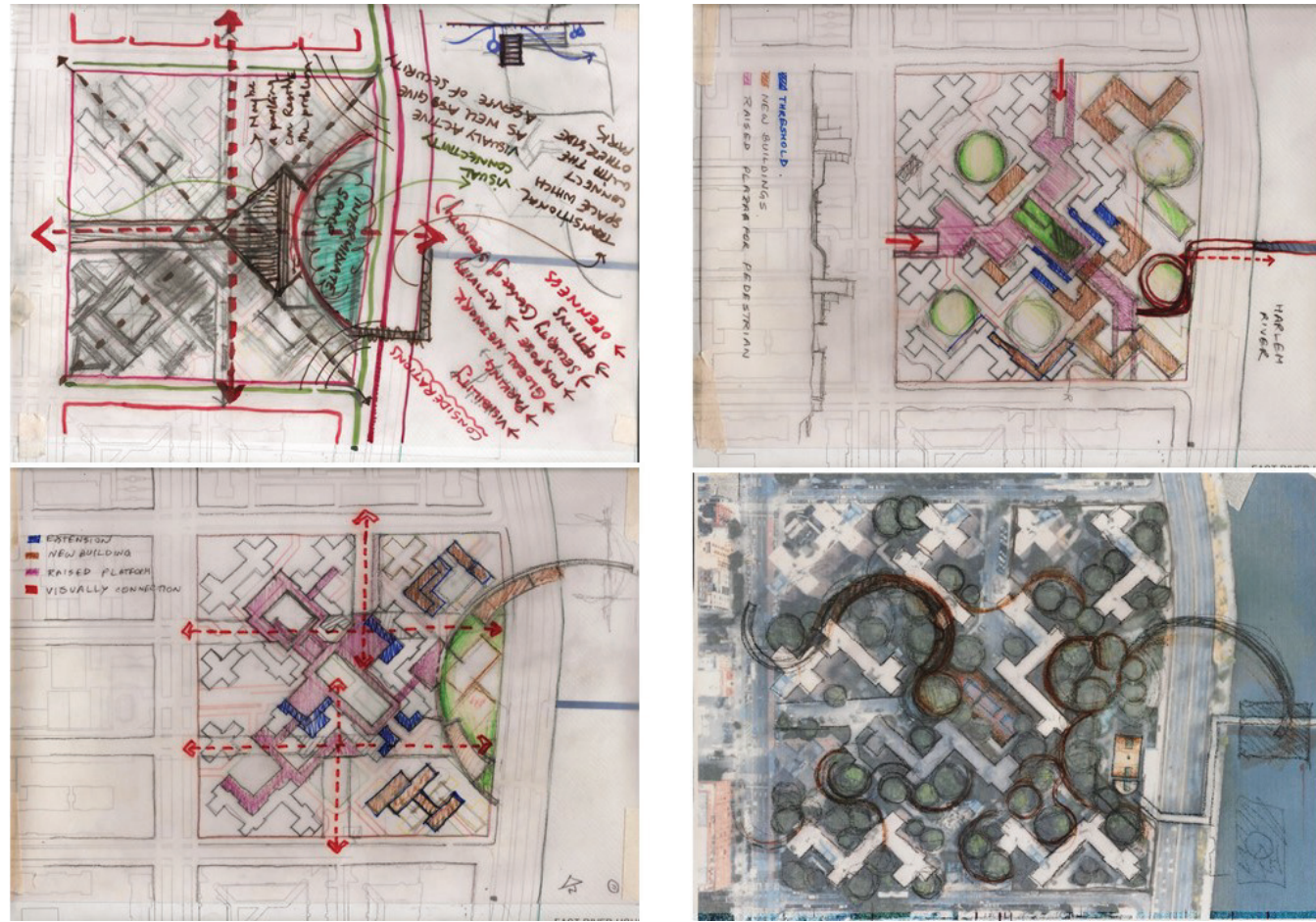


Fig 24: Different ideas of masterplan development

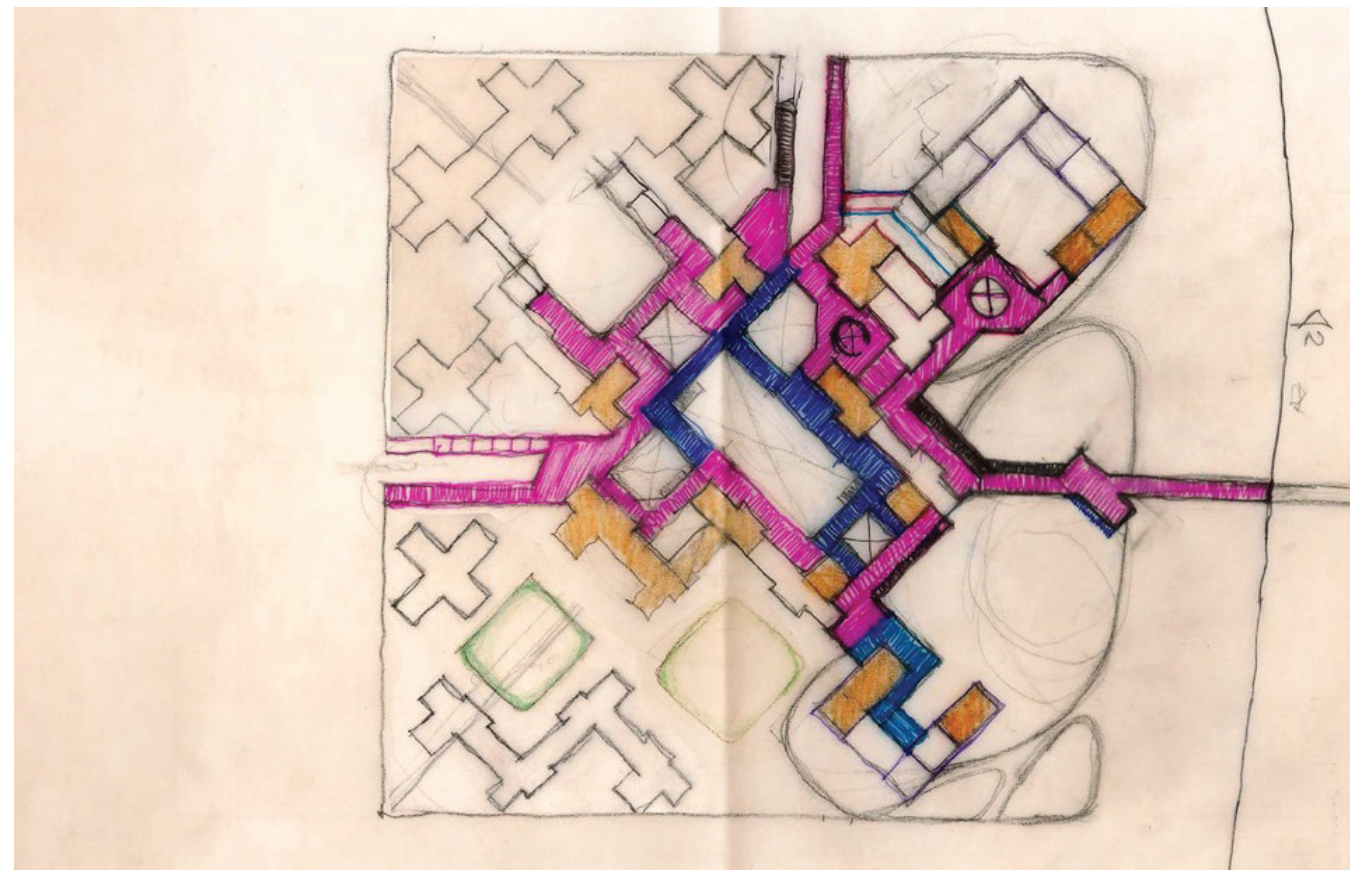
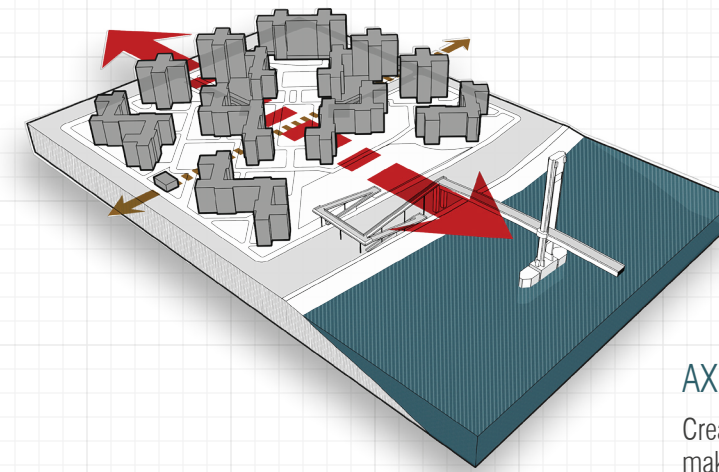


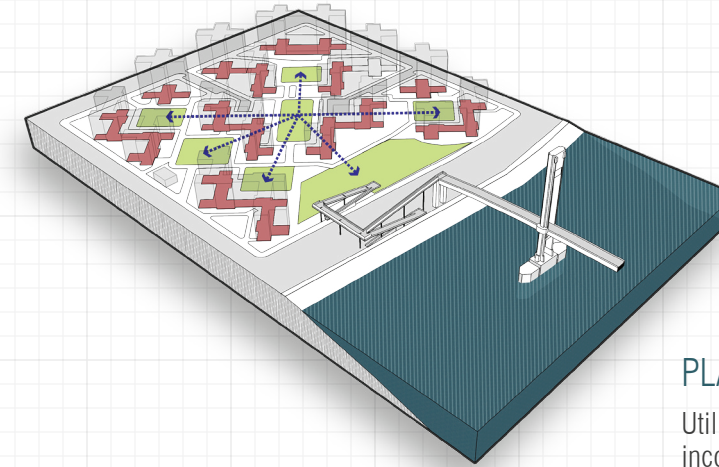
Fig 25: Urban Platform idea in Masterplan Development

## DESIGN CONSIDERATIONS FOR MASTERPLAN



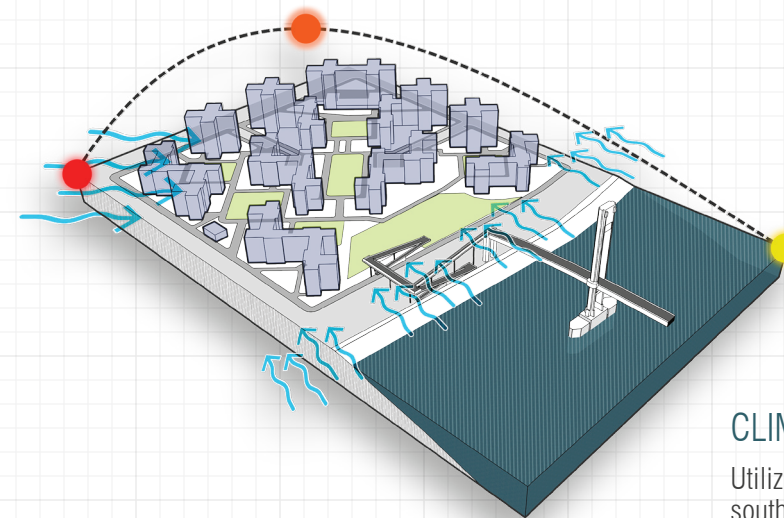
### AXIS

Creating a connection with the river making "Public Spine"



### PLACE MAKING

Utilize and Connect the pocket spaces by incorporating "Community Facilities" to invite people for gathering



### CLIMATE

Utilizing the maximum Daylight from south in the Public housing blocks and the internal courtyards

Fig 26: Design Considerations for Masterplan Development



# PROGRAM DEVELOPMENT

The nearby housing community facilities were observed within 5 minutes walk of the housing and proposed some of the new facilities other than those inside the housing which determines some of them for public and rest are for private residents use. The housing block program in determined according to the previous housing dwelling units' demand and some additional community facilities to make the housing memorable for residents. The connectivity towards the river being proposed through the urban platform which runs over a green park area of the housing. According to NYC open data source, current population in East River Houses: 2204, Manhattan population density- 2020- 72,918/ square mile and according to my site size population should be-1798. (<https://opendata.cityofnewyork.us/data/> ) Density count for design in housing in 2050 prediction- 2500.

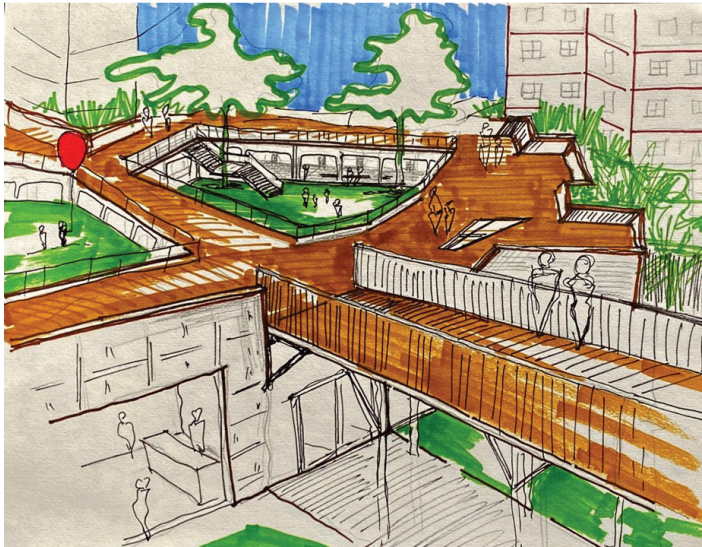


Fig 27: Urban Platform conceptual idea with integrated courtyard in the housing

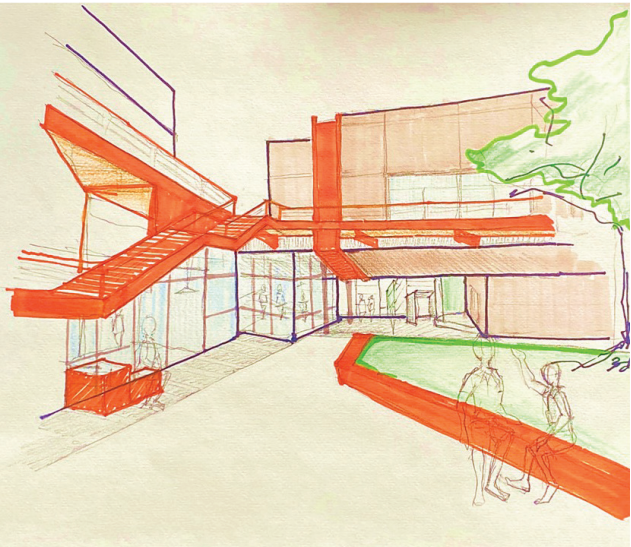


Fig 28: Conceptual idea of community amenities with integrated courtyard



Fig 29: Conceptual idea of community amenities with urban platform



Fig 30: Conceptual idea of community amenities

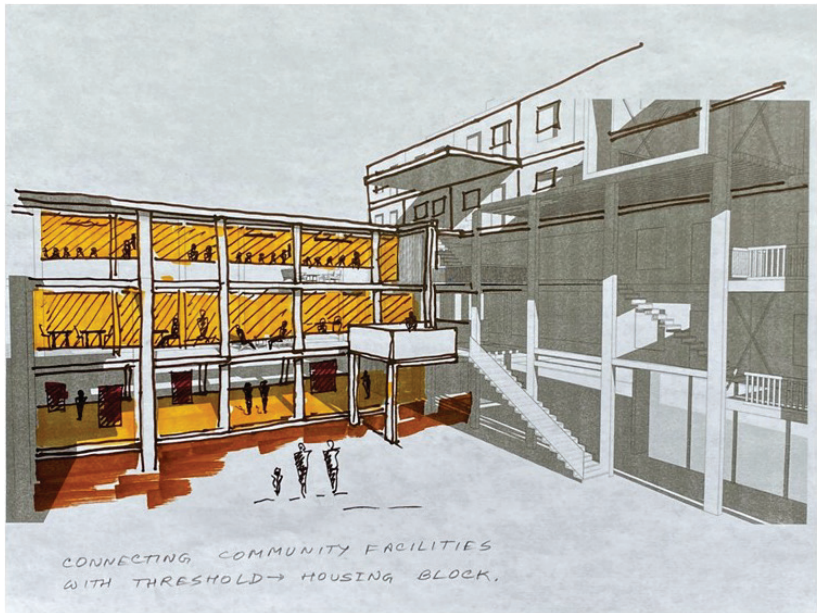


Fig 31: Conceptual idea of community amenities with Existing Housing

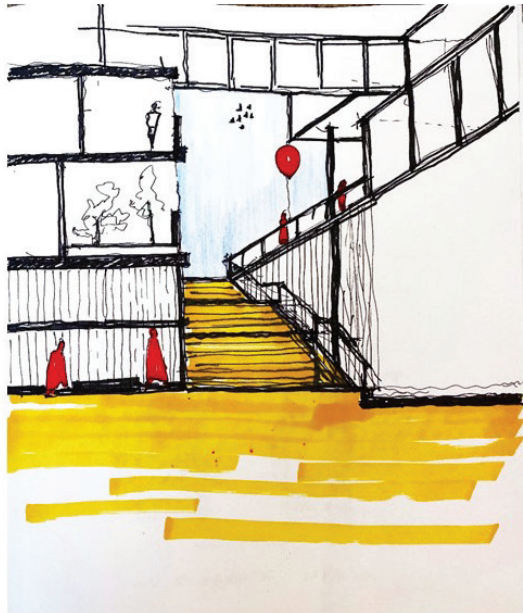
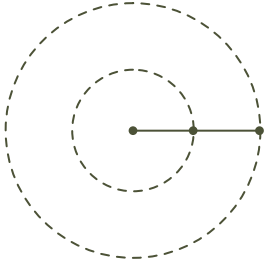


Fig 32: Conceptual idea of community amenities

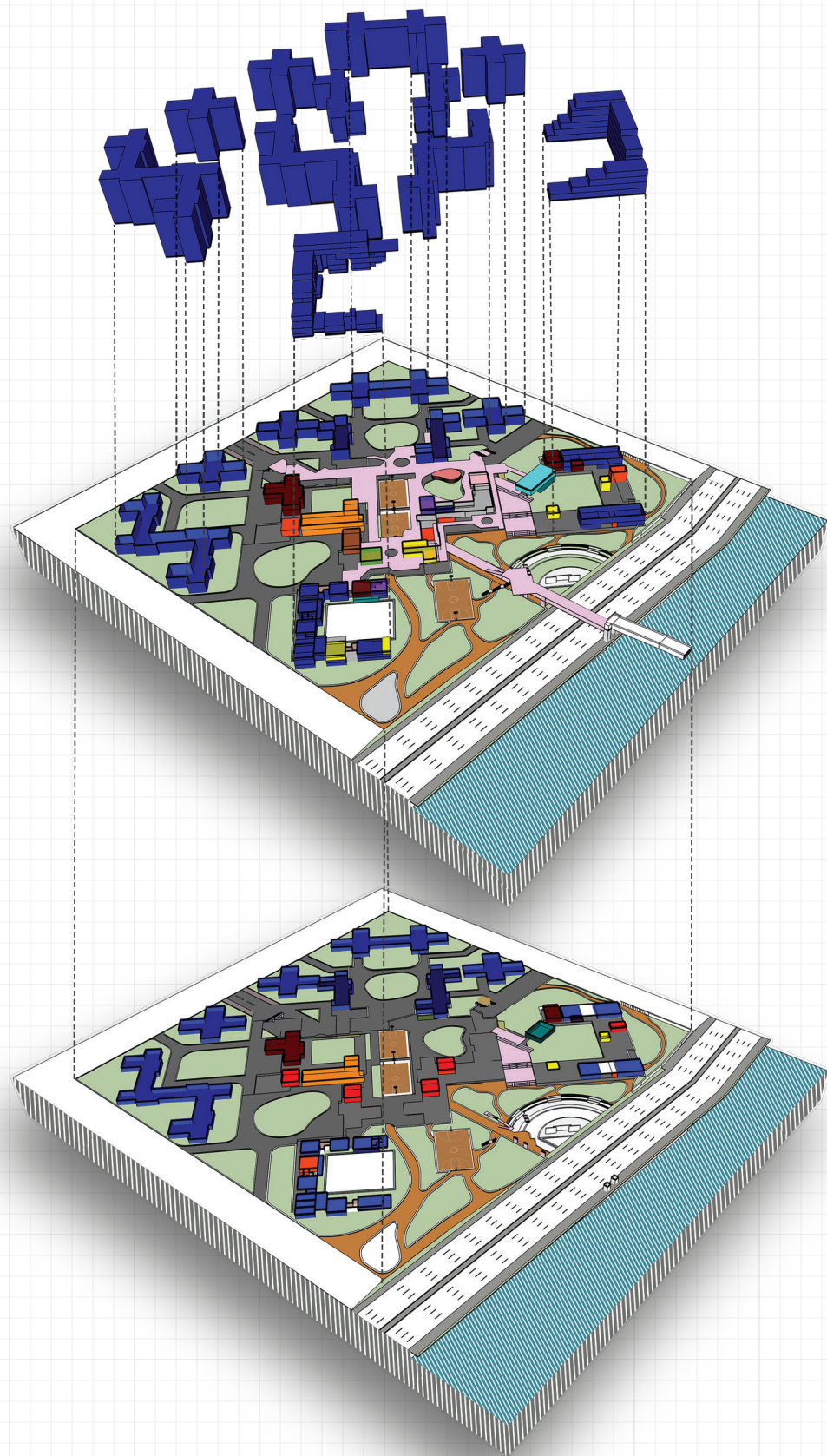


5 min Walking Distance = 0.25 mile  
 10 min Walking Distance = 0.50 mile

-  Administration Building
-  Islamic Center
-  Bus Station
-  Metro Station
-  Medical Facilities
-  Church
-  Education Institute
-  PARK / Playground



Fig 33: 5min Walk Diagram to find Services near the site



- Residence
- Library / Child Reading space
- Utility / Service Room
- Art Gallery
- Cultural Center
- Retail Shop
- Social & Welfare Rm
- Gym/ Workout Space
- Walk Way
- Raised Plaza
- Daycare Cntr.
- Internal Road
- Prayer Room
- Health Rm for Primary AID
- Cafe
- Children Art Space

Fig 34: Exploded Diagram of Program

## DESIGN OF ELEVATED URBAN PLATFORM

The idea of urban platform is defined here in the plan and the axonometric view which integrates the community facilities such as- Library, Children Art museum, Retail shops, Book reading areas, Book café and gathering spaces for basketball courtyard. The upper level platform would create the multilayer connection in between the residents and visitors. The housing courtyards will be vibrant through these spaces included. The entry of the housings will incorporate the raised platform with pedestrian access and the vehicular entries will be specified due to the safety other than the access for the emergency vehicle. The platform will have universal access with ramps and elevators for everyone and the staircases can create dramatic experience for the users. Children can play in the small courtyards when their parents can sit on the benches up on the platform besides the green planter boxes with a book in hand to have eye on them which will remind them of High-line in New York. Different festivals will have in the courtyard spaces to connect people and make the spaces memorable in different seasons.

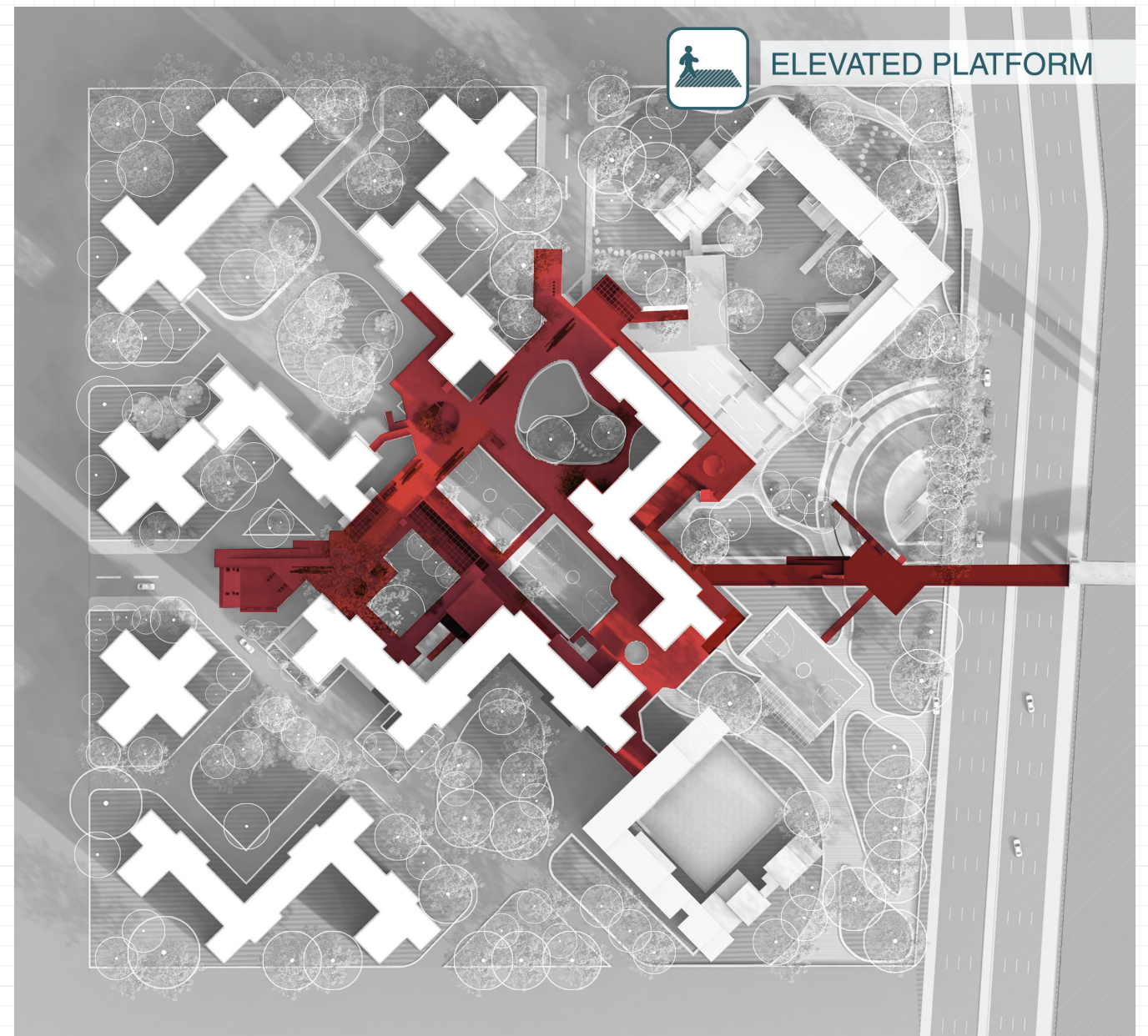


Fig 35: elevated urban platform to connect the whole housing community facilities

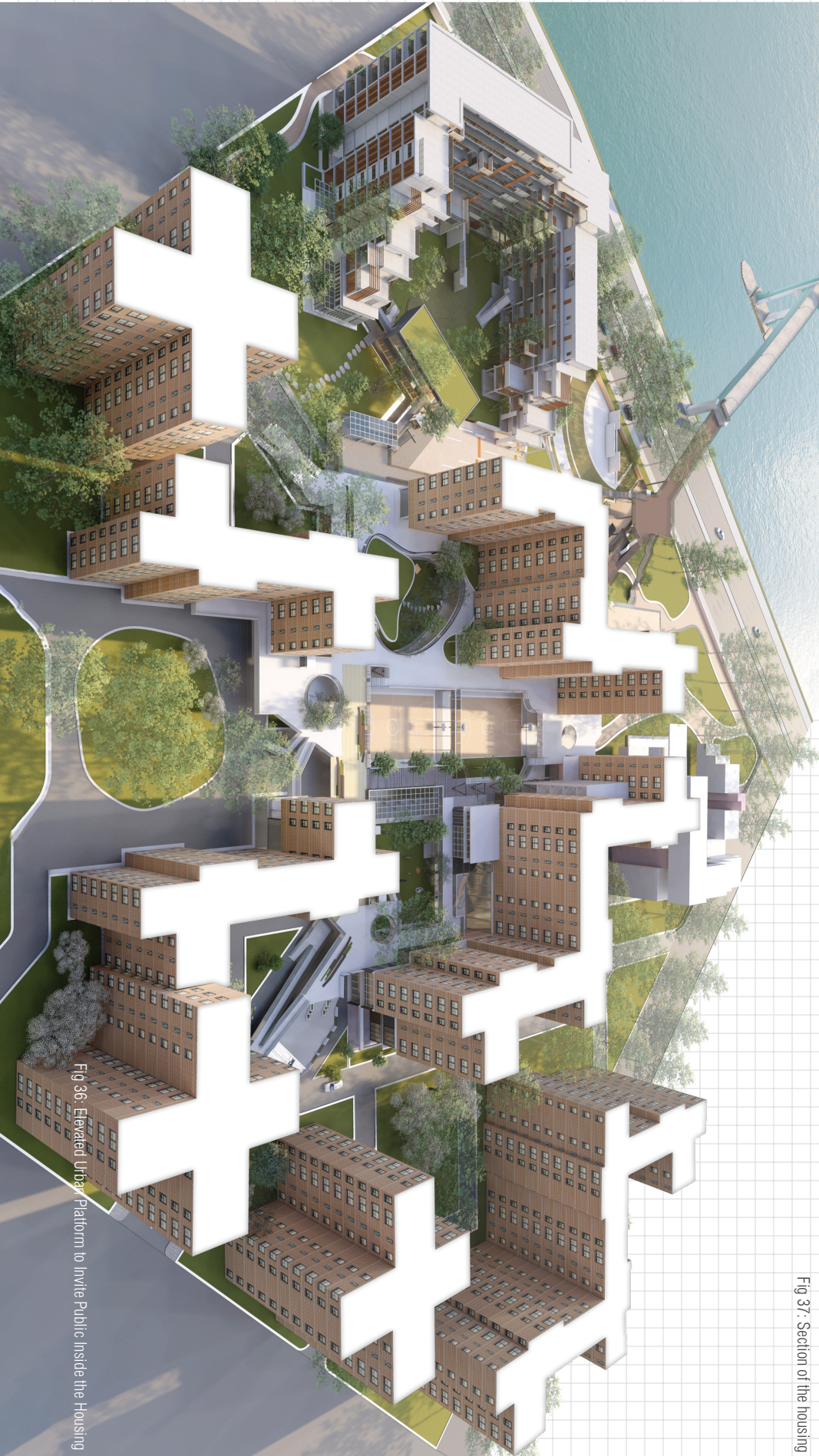


Fig 36: Elevated Ultra-Platform to Invite Public Inside the Housing

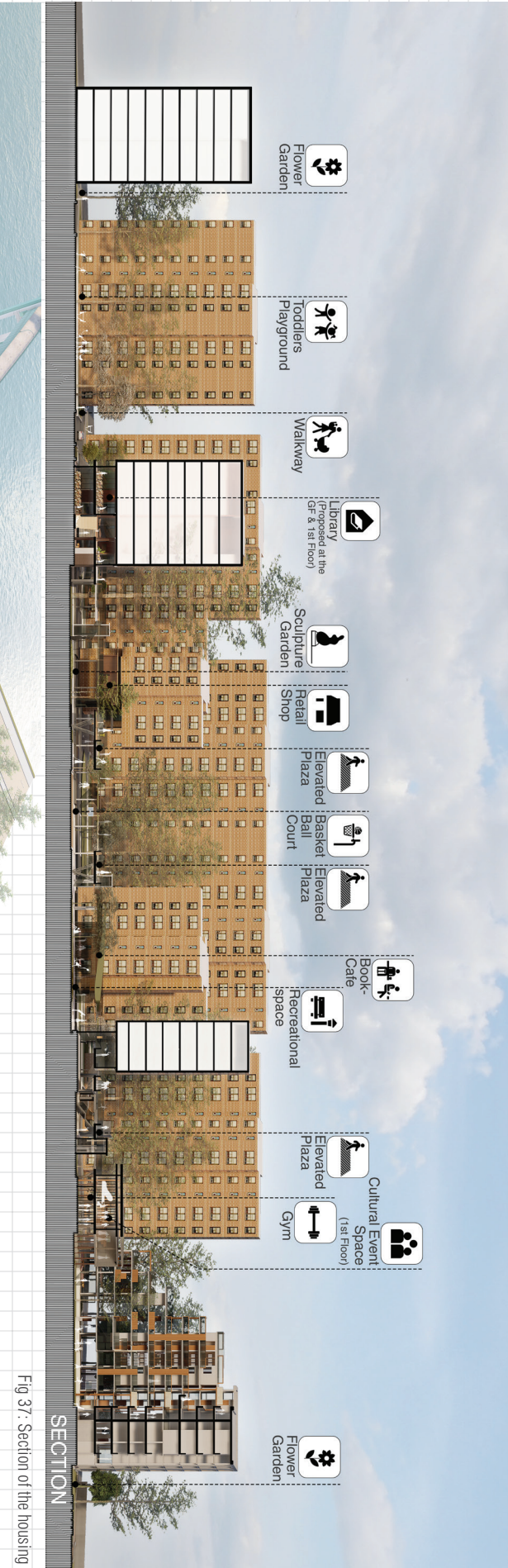


Fig 37: Section of the housing

SECTION

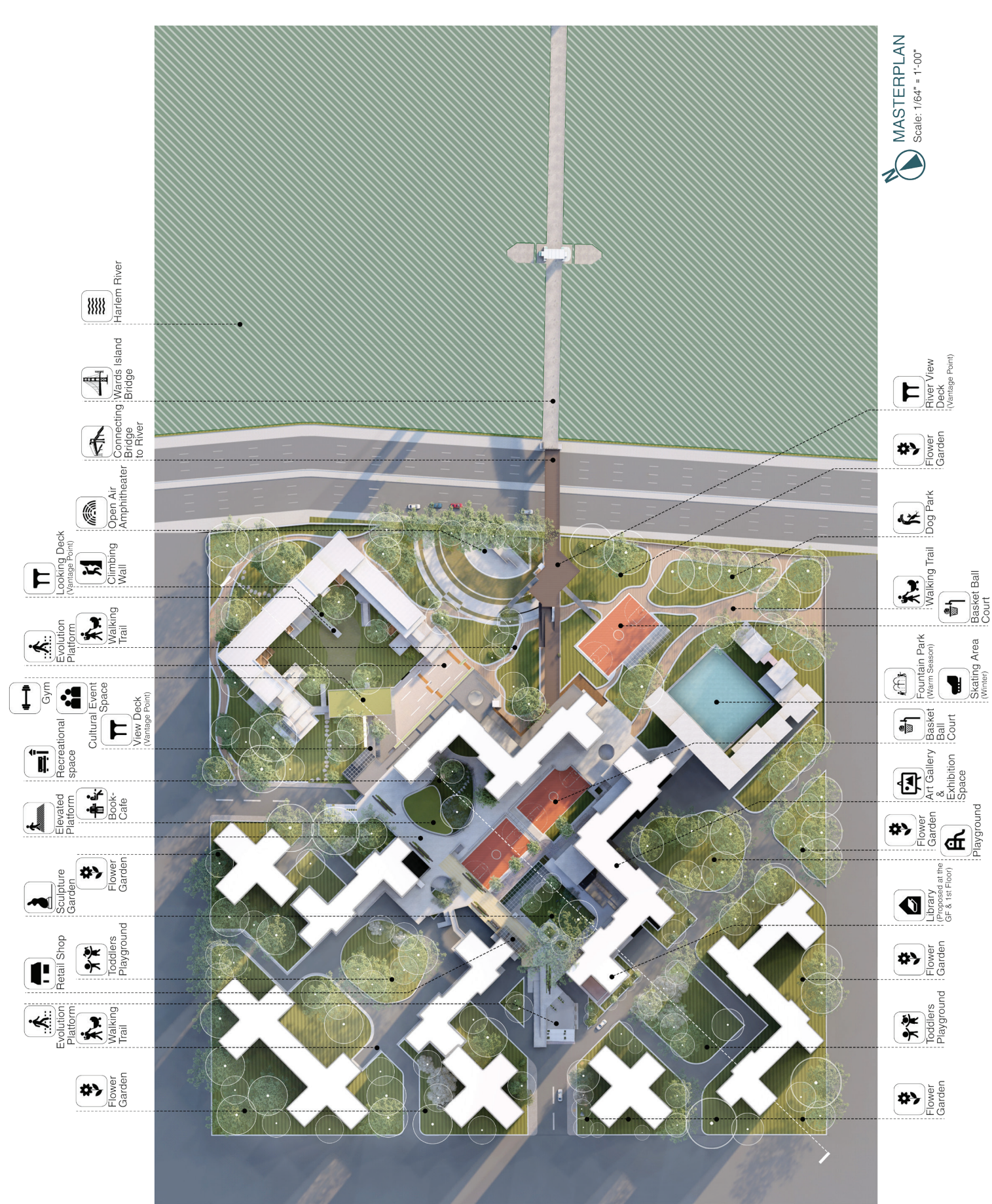
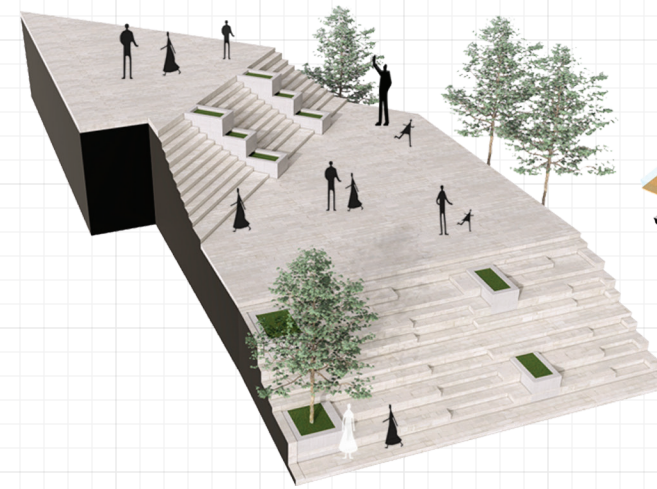
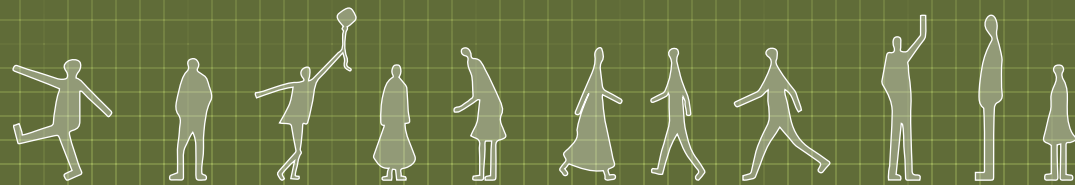
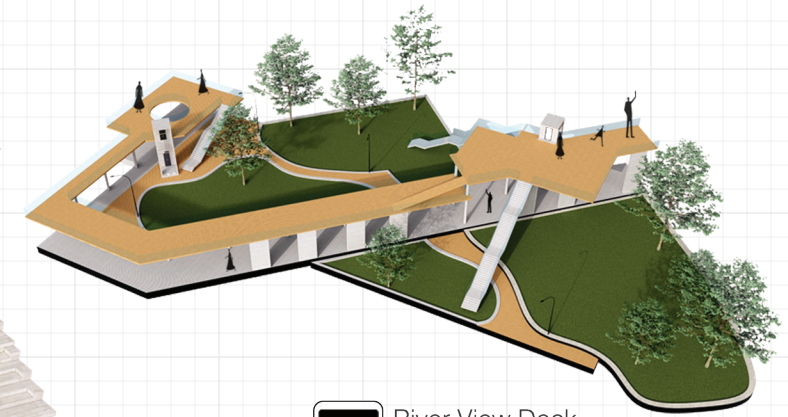


Fig 38: Masterplan Design of Easter River Houses

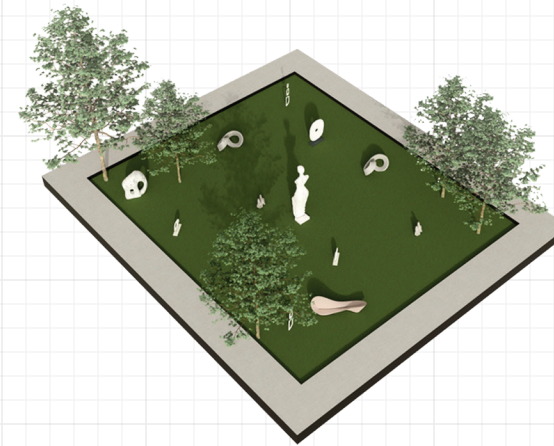
# PLACE MAKING



Evolution Platform  
(Entry Plaza)



River View Deck  
(Vantage Point)



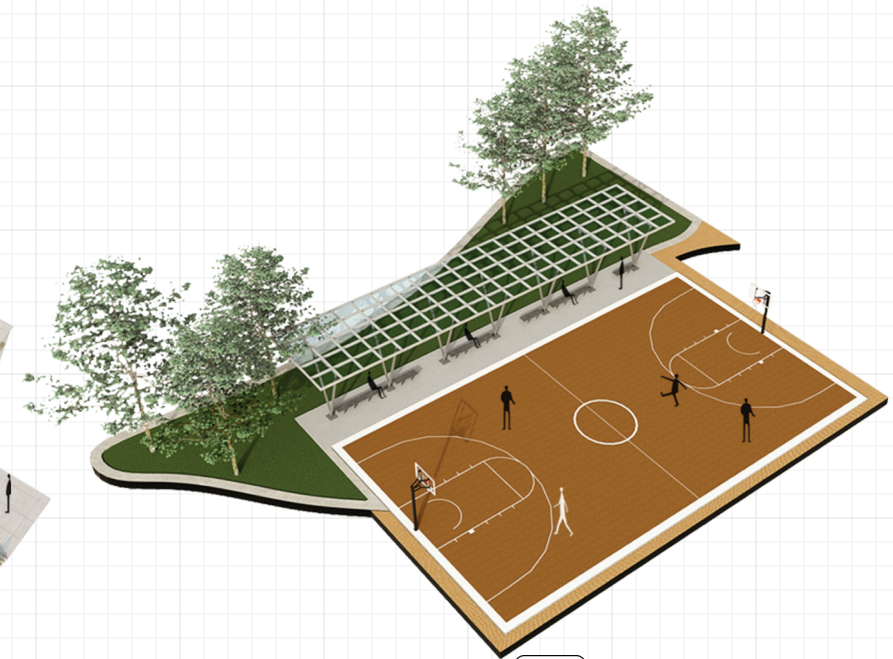
Sculpture Garden



Open Air Amphitheater



Elevated Platform  
(Universal Access)



Basket Ball Court

Fig 39: Place making- Key Zones-1



Fig 40: Place making- Key Zones-2



Fig 41: Book Cafe Space in The Ground Floor of the Housing Connecting to The Courtyard

Fig 42: Elevated Urban Platform to Invite Public Inside the Housing



ELEVATED PLATFORM



Fig 43: Urban Platform and View Towards Basketball Court



Fig44: Basket Ball Court and The Urban Platforms to Engage Residents in Various Levels



Fig 45: View Towards Art Gallery from the Sculpture Garden



Fig 46: View Towards Library from the Entry Point of Housing Area

COMMUNITY  
 FACILITIES

## COMMUNITY FACILITIES

Focusing on the community facilities such as the library and the children art museum in the old housing block will create different experience for public and inside residents. The children art museum will incorporate the NYCHA housing histories by displaying the photographs and models in the permanent gallery and the temporary open gallery would display the works of young artists. The library space is open for all in the day time and will create an Enlightened view at the night time as well.

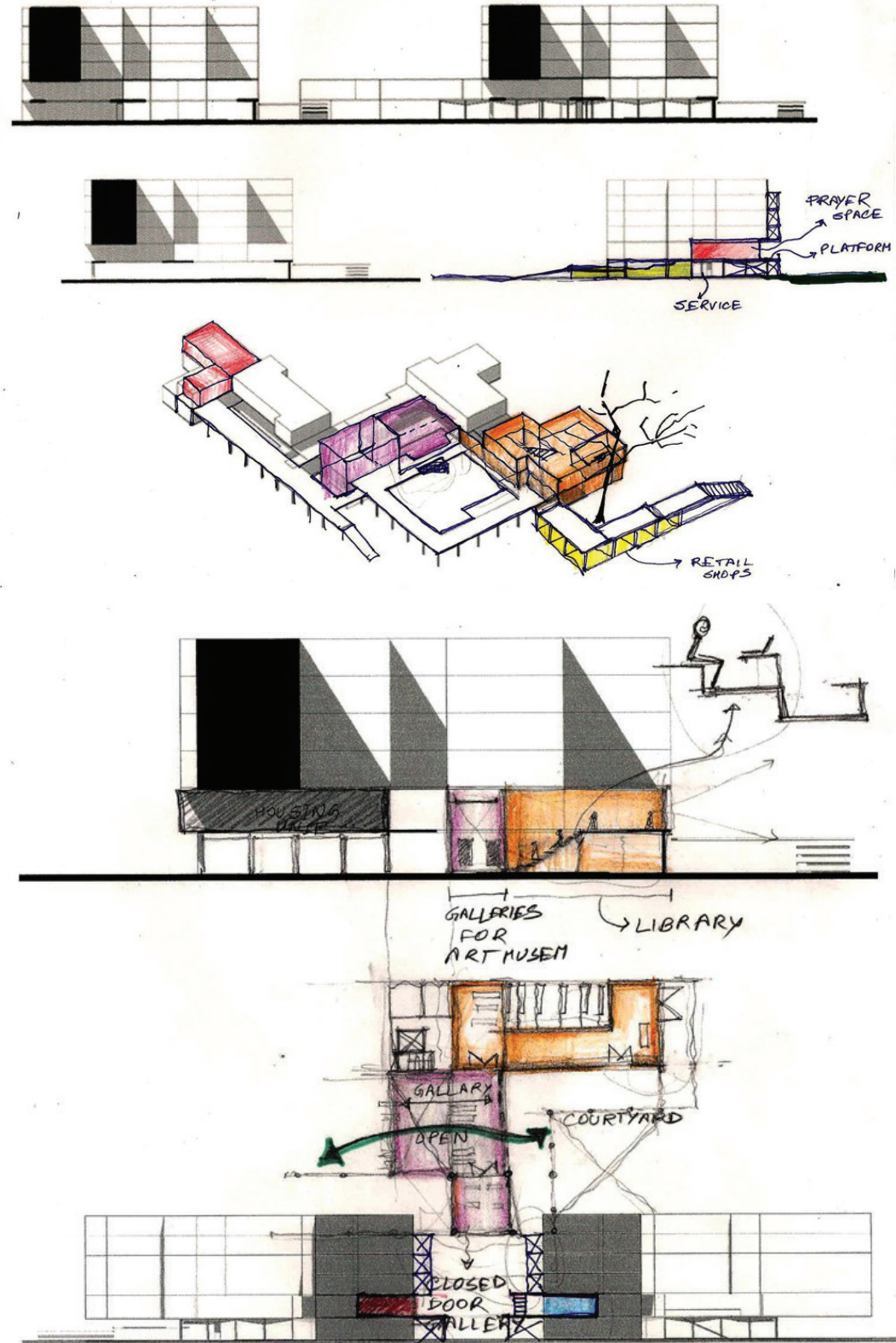


Fig 47: Schematic Design of Library and Art Gallery in the Existing Housing Area Connecting to the Courtyard

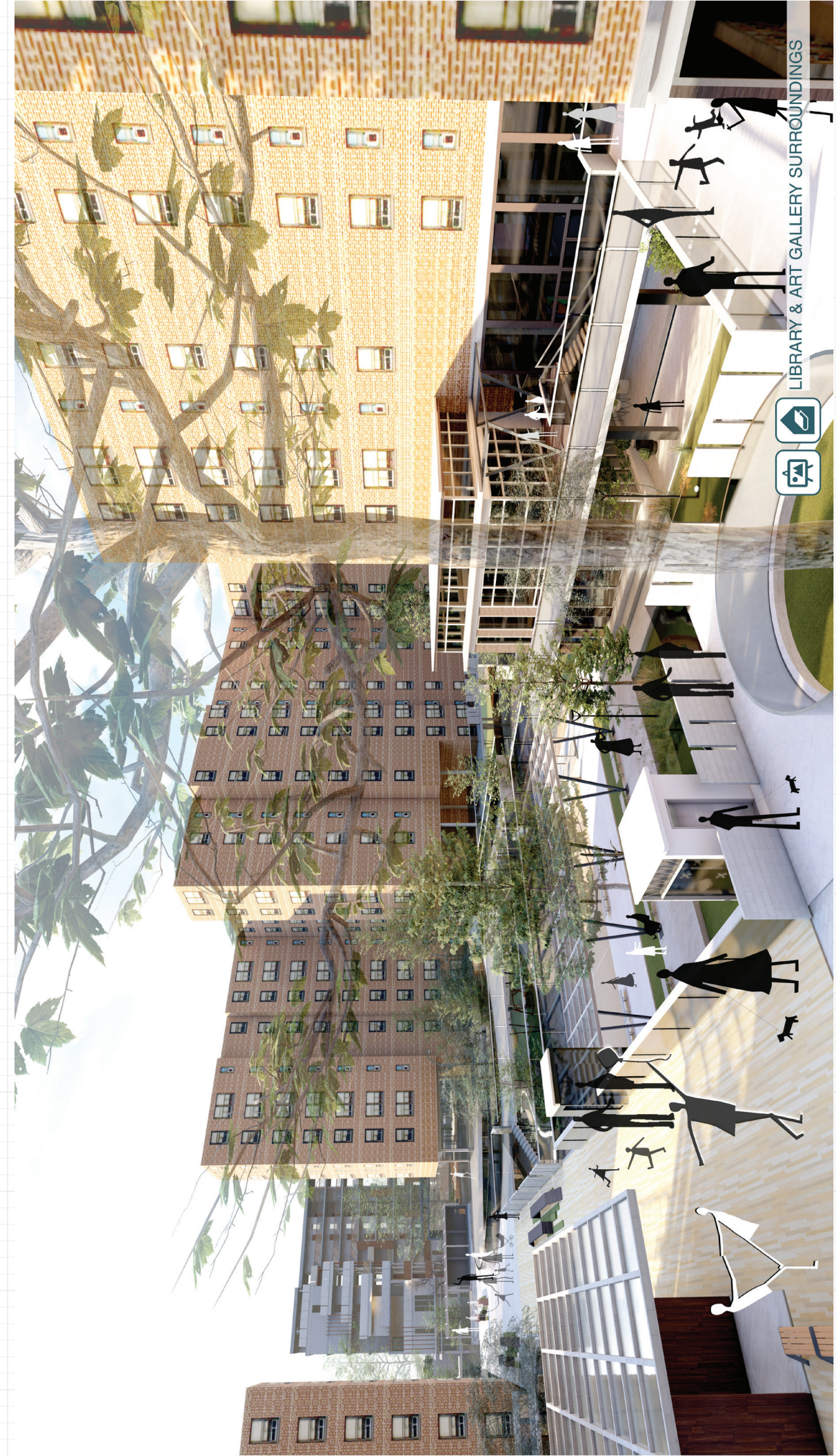
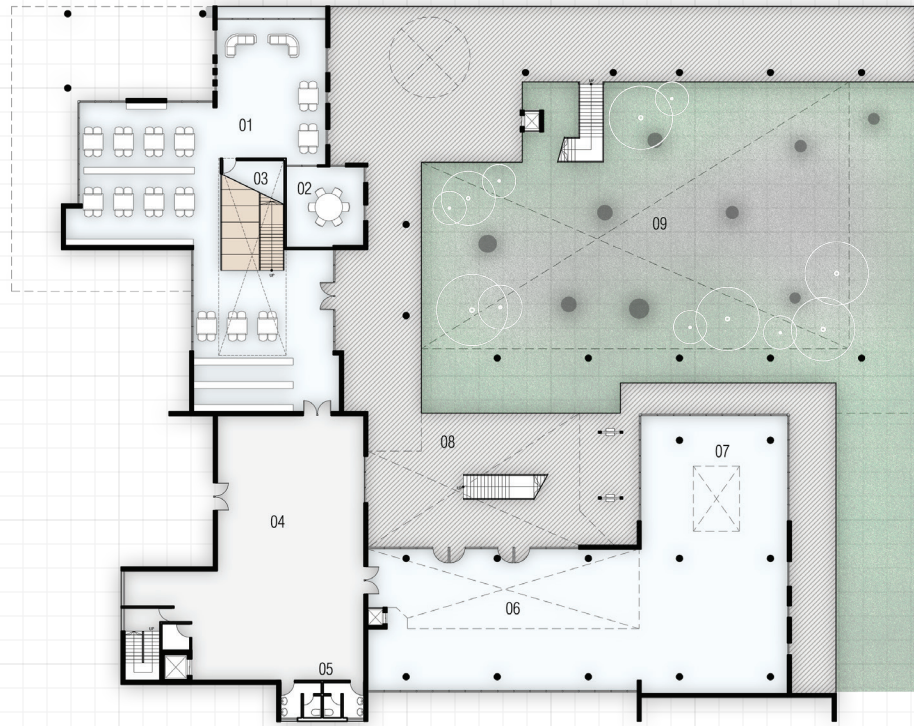


Fig 48: Elevated Urban Platform to Invite Public Inside the Housing





- 01. LIBRARY
- 02. MEETING ROOM
- 03. STORE
- 04. LOBBY & LOUNGE
- 05. TOILET
- 06. CHILDREN ART MUSEUM/  
TEMPORARY GALLERY
- 07. PERMANENT GALLERY
- 08. WALKWAY
- 09. SCULPTURE GARDEN

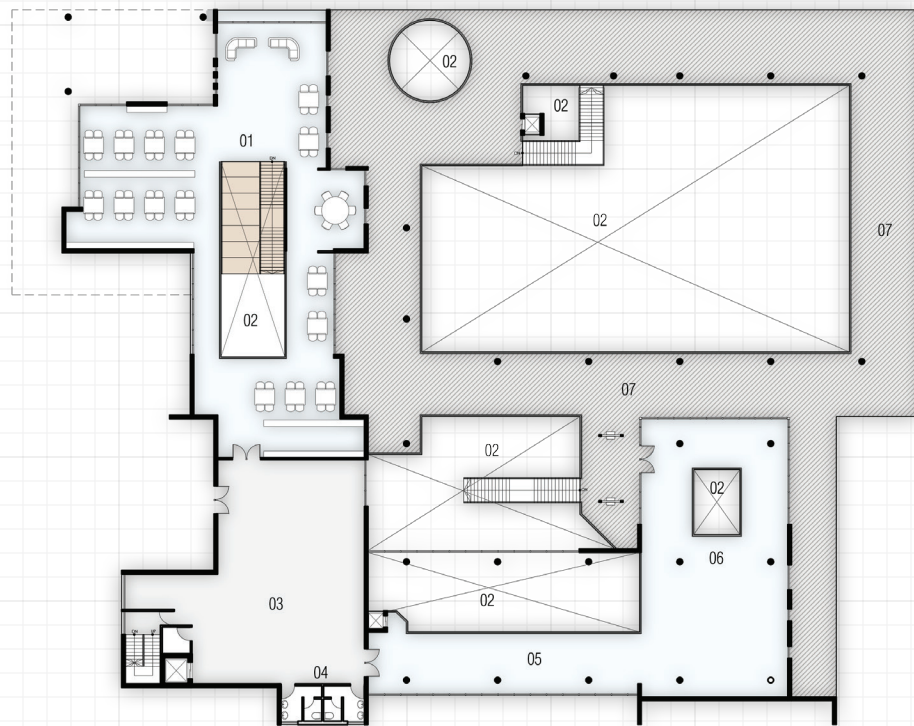
GROUND FLOOR\_LIBRARY & ART GALLERY

Scale: 1" = 1'-00"



LIBRARY (GROUND FLOOR)

Fig 50: Library Space- Ground Floor



- 01. LIBRARY
- 02. VOID
- 03. LOBBY & LOUNGE
- 04. TOILET
- 05. CHILDREN ART MUSEUM/  
TEMPORARY GALLERY
- 06. PERMANENT GALLERY
- 07. ELEVATED PLATFORM

FIRST FLOOR\_LIBRARY & ART GALLERY

Scale: 1" = 1'-00"



ART GALLERY (GROUND FLOOR)

Fig 51: Art Gallery Space- Ground Floor

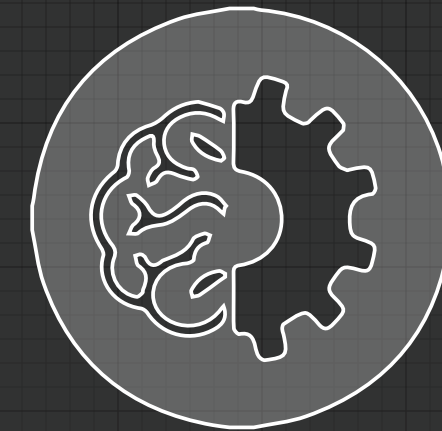
Fig 49: Floor Plans of Library and Art Gallery in the Existing Housing Area Connecting to the Courtyard



Fig 52: Sculpture Garden Space- Ground Floor of the Art Gallery



Fig 53: Library Reading Space- First Floor



# CONCEPTUAL RETROFITTING & THRESHHOLD DESIGN

## RETROFITTING AND THRESHOLD DESIGN

For the old housing blocks I have thought to retrofit some parts of the blocks to include a different layered corridors or balcony spaces which can connect people with the courtyard more and create the interactive spaces in different levels by breaking some of the limits.



Fig 54: Retrofitting of the Extended Balcony Spaces to the Existing Housing block to Connect the Courtyard Spaces



Fig 55: Retrofitting of the Extended Balcony Spaces Elevation

# PROPOSED HOUSING BLOCK



## DESIGN AND DEVELOPMENT OF NEW HOUSING BLOCK

For the housing block development on the east side of the housing, the key concept is to create multi layered courtyard spaces along with the proper housing units for residents. The incorporation of solid void relationship and the distance of the courtyard spaces were key concepts while designing the housing. Also the staggered form is designed to maximize the view towards the river and daylight. Incorporating some community facilities- library, art gallery, day care center, senior center, youth center, cultural event space, basketball courts and galleries, book café space, community gathering rooms and club houses, children book reading spaces in the new housing blocks and connecting them to the urban platform of the old housing blocks will create an amazing relationship of historical buildings with the modern architectural approach.

Not only the center platform but also the staggered housing space will include visually striking experience for the outsiders. The connecting platform will run through the new housing block by passing a eventful cultural mass in the housing and will continue the space towards the landscape merged amphitheater beside the bridge. Additionally, the internal housing court space will have a sand pool for the children to play and use the space and book reading or other activities. The other block of the housing will include a center shallow water fountain which will turn into a skating area for the people of the housing. the dog park, small landscape zones, natural wooden trail in the park space will create the connectivity with the river and the people who are in the platform level.

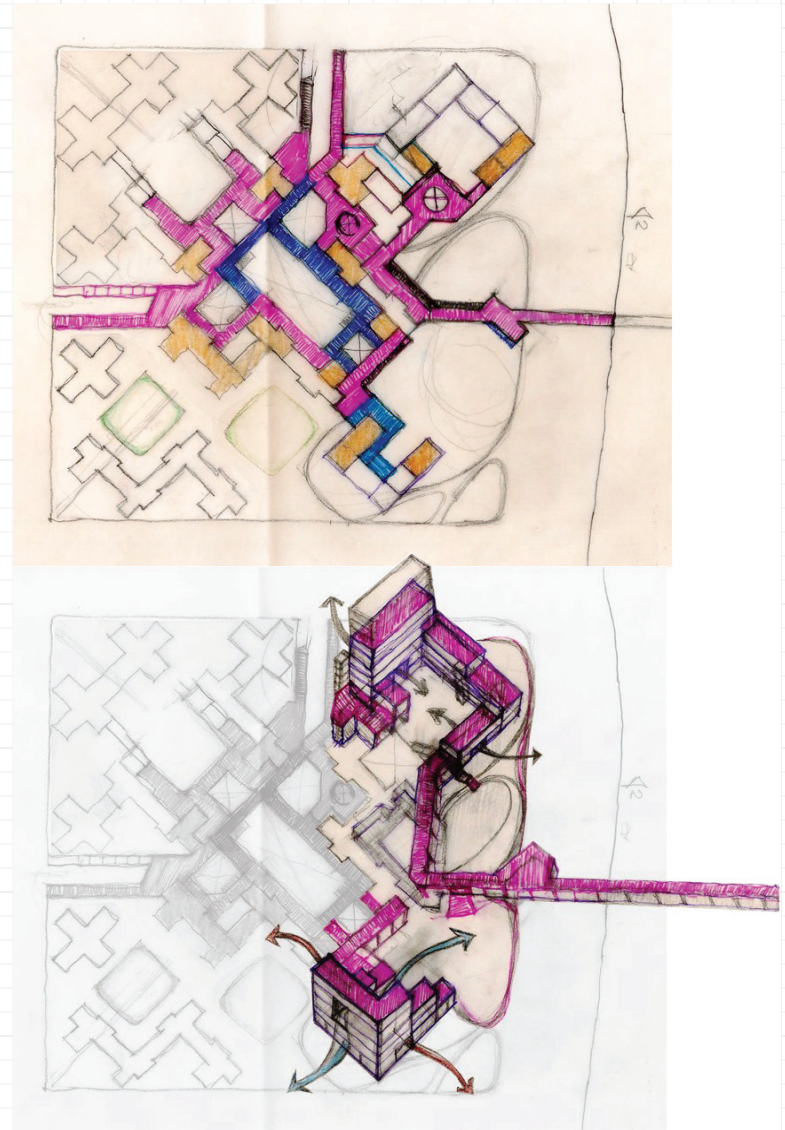


Fig 56: New Housing Block Development On the South East Side of the Housing Site



Fig 57: New Housing Block Development Conceptual Idea

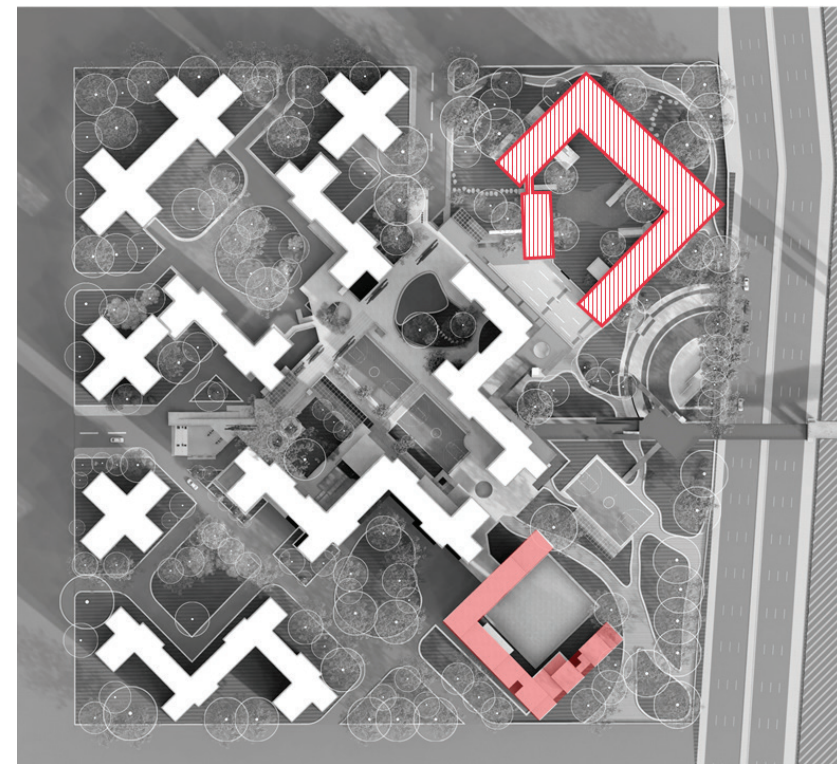


Fig 58: New Housing Block Development

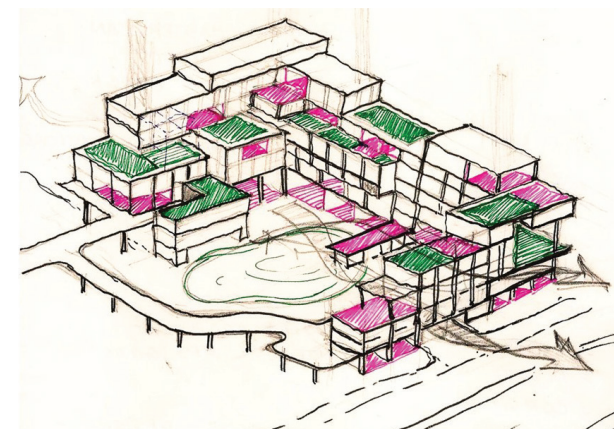
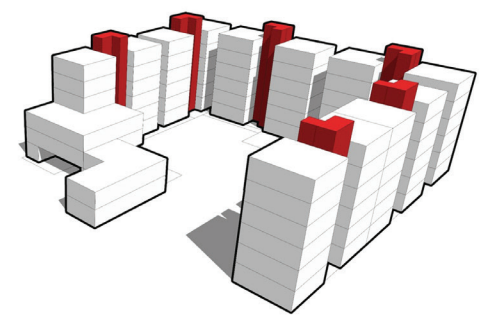
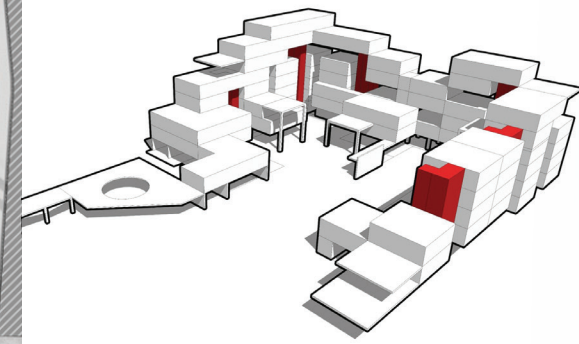


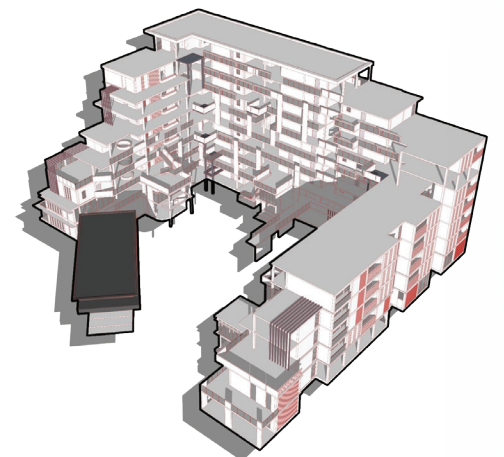
Fig 59: Conceptual Idea of the Housing in Staggered Way to Maximize View Towards River



PHASE 01

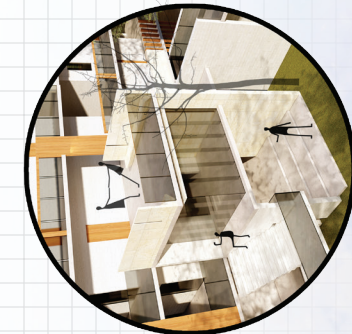


PHASE 02



PHASE 03

Fig 60: New Housing Block Development Phases



### OUTDOOR AREAS

Outdoor areas such as terraces, balconies, offer places to relax, engage in physical activity, and socialize. They can be made to support many different kinds of activities.



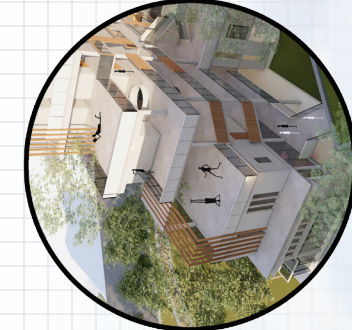
### CIRCULATION SPACES

In housing developments, communal amenities can promote community building in addition to designated gathering places. These facilities may include, among other things, co-working areas, laundry facilities, and circulation spaces as well.



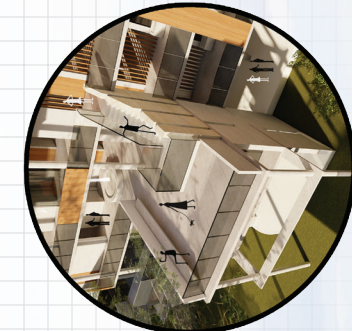
### SOLID VOID RELATIONSHIPS

Solid void relationships are important in housing common shared spaces. Different levels of gathering spaces can help people connect with other people in the community through different outdoor activities in the housing space.



### MULTILAYERED TERRACES

Multilayered terrace spaces in the housing can provide opportunities for physical activity, relaxation, and socialization. They can be designed to accommodate a variety of activities, from picnics and barbecues to outdoor movies.

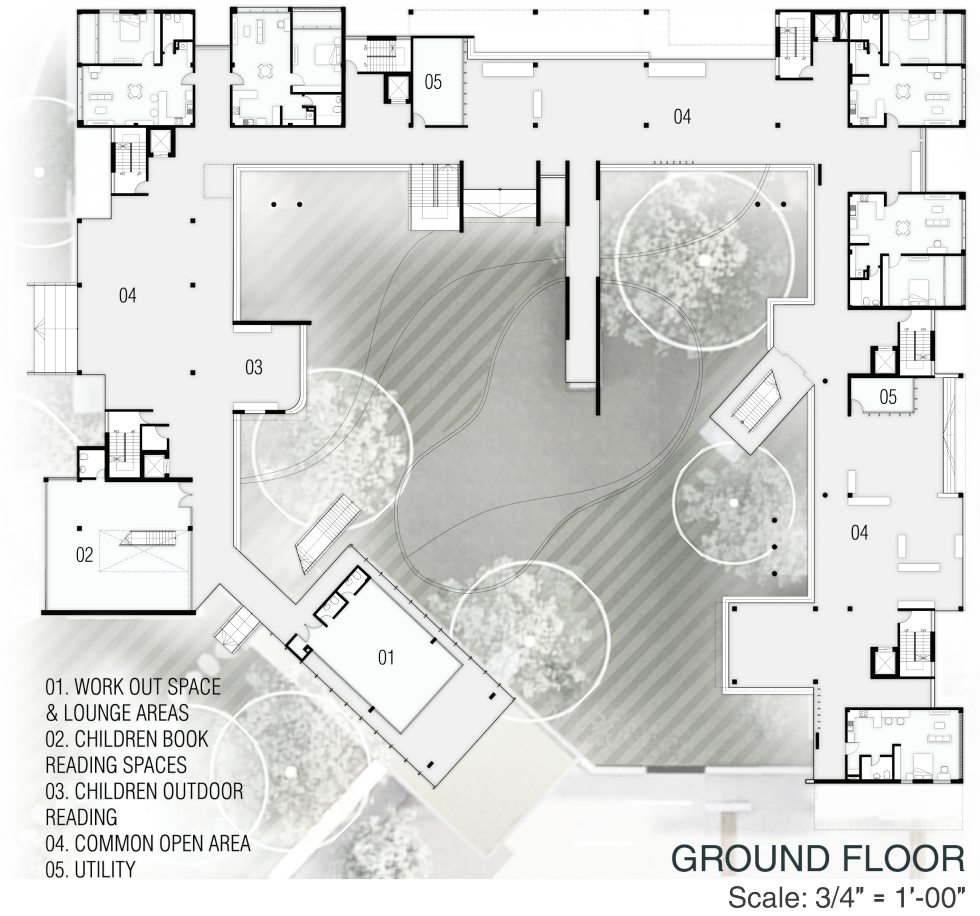


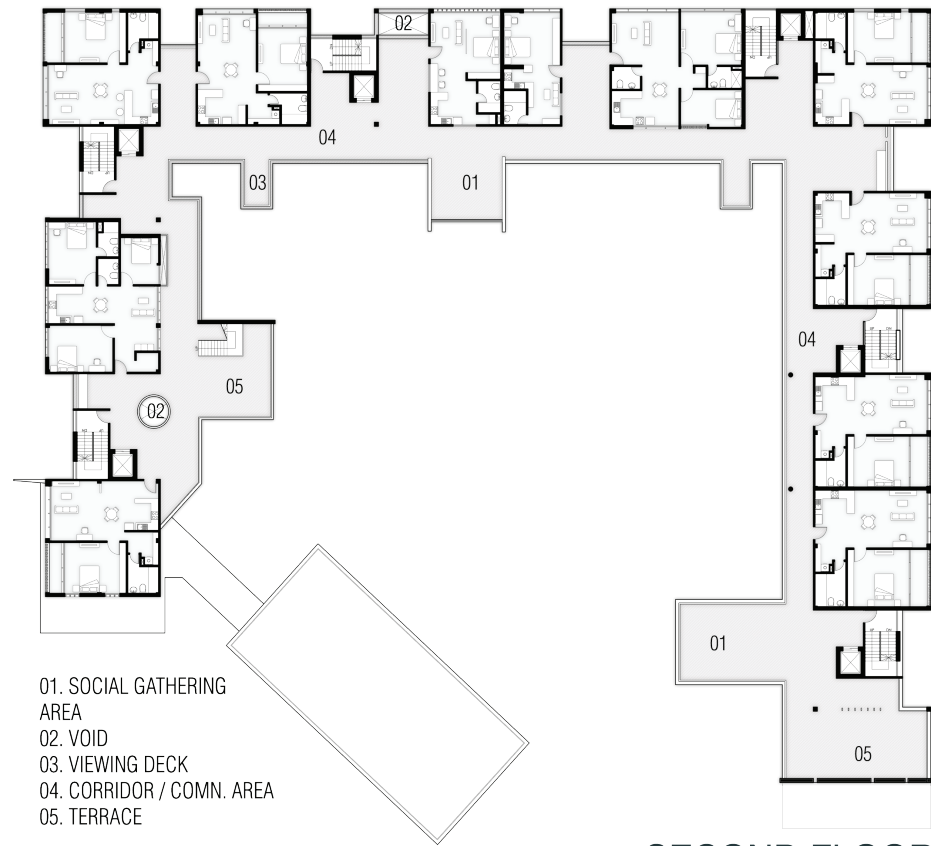
### COMMON AREAS

The community room or clubhouse is a typical gathering place in housing. Events, gatherings, and social interactions can all take place in these areas. They might have features like TV, and game room in addition to areas for exercising and taking care of oneself. Within a housing development, community rooms can serve as a vital hub for establishing social ties and fostering a sense of belonging.



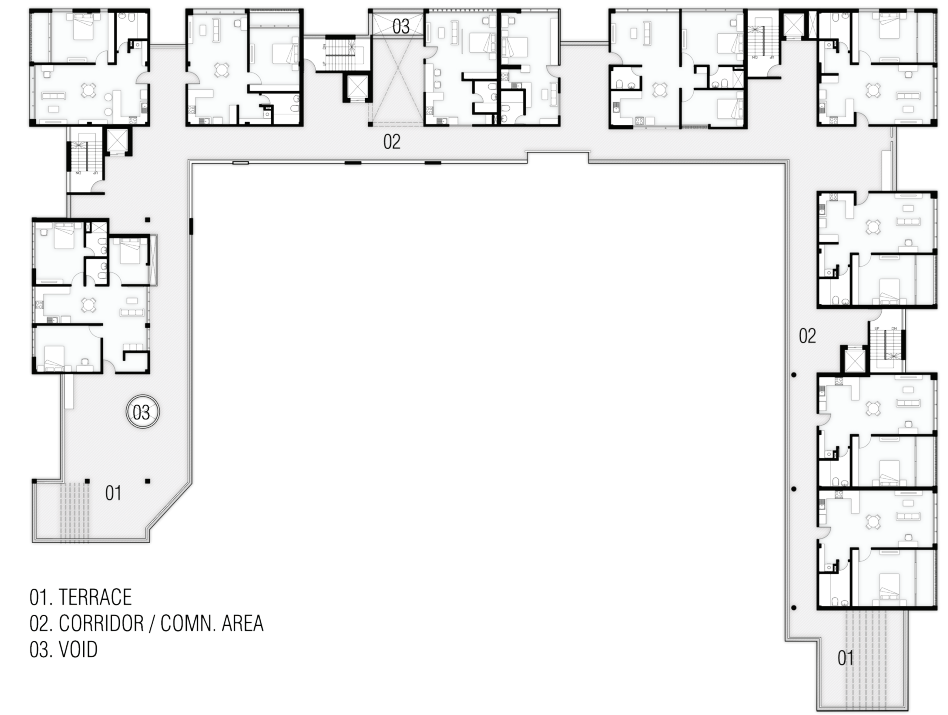
Fig 61. New Housing block and Internal Courtyard spaces





- 01. SOCIAL GATHERING AREA
- 02. VOID
- 03. VIEWING DECK
- 04. CORRIDOR / COMN. AREA
- 05. TERRACE

**SECOND FLOOR**  
Scale: 3/4" = 1'-00"



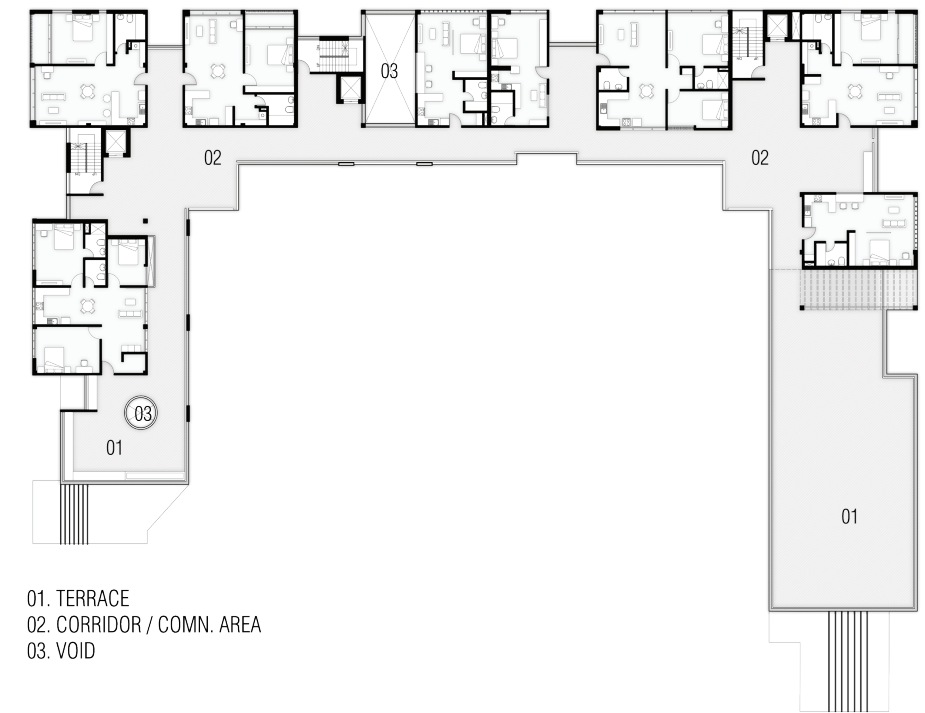
- 01. TERRACE
- 02. CORRIDOR / COMN. AREA
- 03. VOID

**FORTH FLOOR**  
Scale: 3/4" = 1'-00"



- 01. TERRACE
- 02. CORRIDOR / COMN. AREA
- 03. VOID
- 04. SOCIAL WELFARE / GATHERING ROOM
- 05. DECK

**THIRD FLOOR**  
Scale: 3/4" = 1'-00"



- 01. TERRACE
- 02. CORRIDOR / COMN. AREA
- 03. VOID

**FIFTH FLOOR**  
Scale: 3/4" = 1'-00"

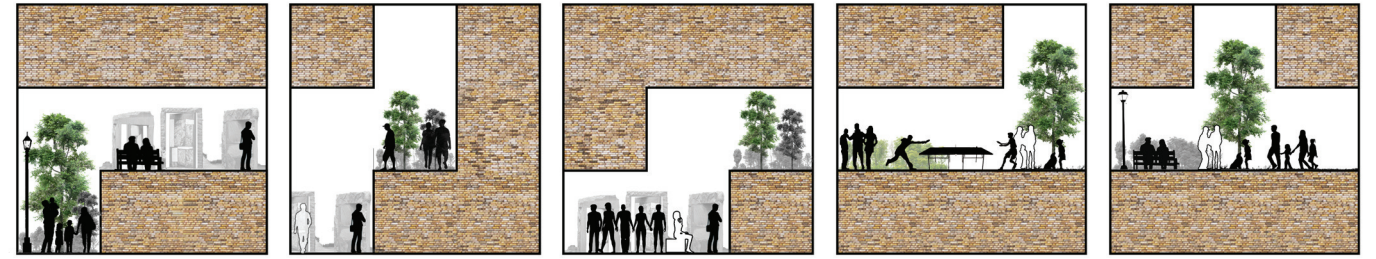
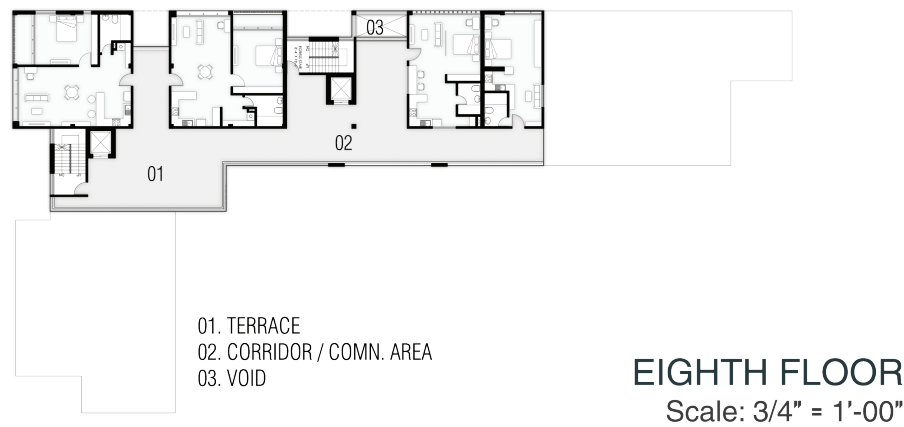
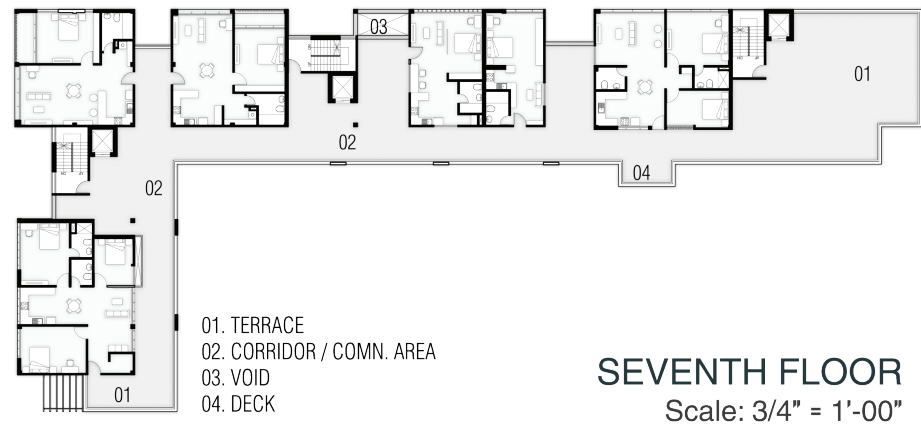
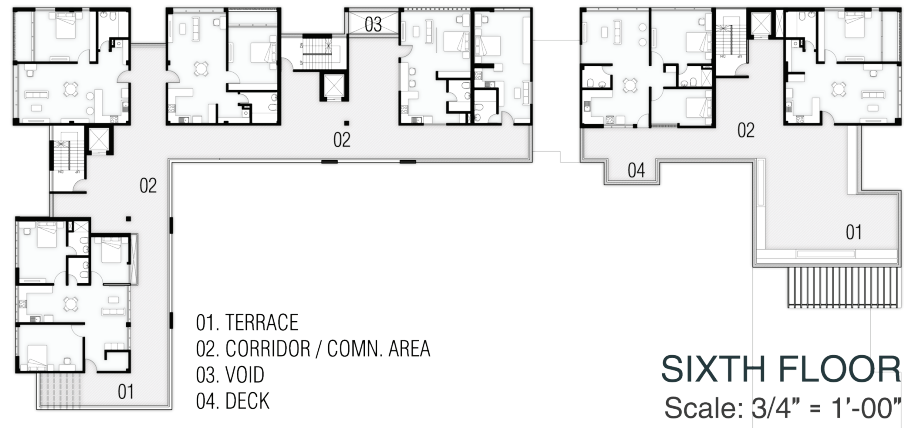


Fig 62: Solid Void Relationship in Multi-Level space of the Housing

The multi-level courtyard spaces will be connected to the housing spaces to engage people in different social activities

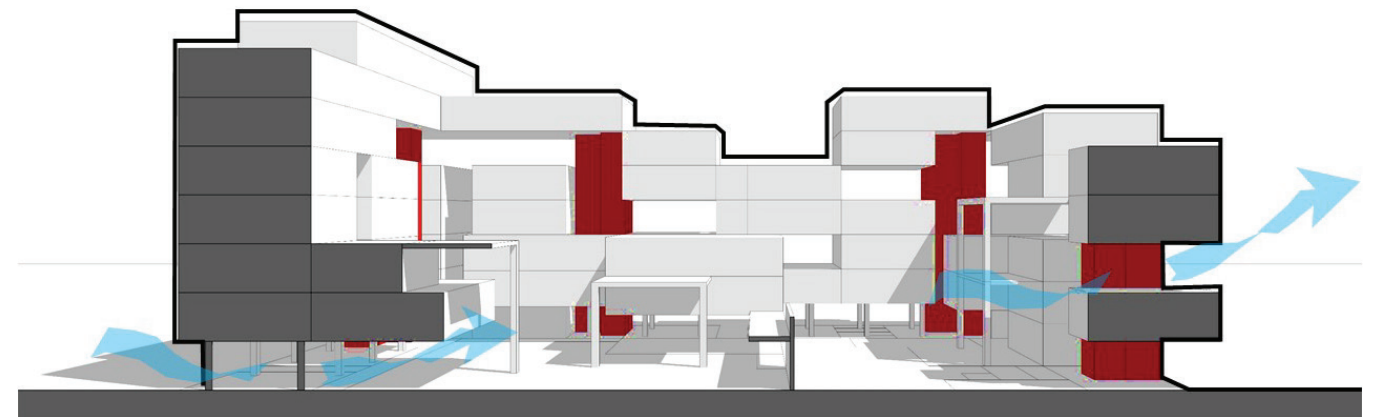


Fig 63: Conceptual Section of the Housing to display Multi-Level space of the Housing

The multi-level courtyard spaces will be connected to the Outdoor spaces and the open spaces will connect to the Harlem river and the maximum daylight will be provided in each unit to ensure healthy lifestyle.





Fig 64. View Towards the Courtyard of the Housing Block



Fig 66. View Towards the Courtyard of the Housing Block from the Amphitheatre



Fig 65. View Towards the Courtyard and the Cultural Event Space of the Housing Block



Fig 67. The Cultural Event Space and the Evolution Plaza View





Fig 68. View Towards the Amphitheatre from the Ground Floor of the Housing



Fig 69. View Towards Harlem River from The Cultural Event Space

The dwelling units are design as- Three-bedroom apartment for families of 1200sft, two-bedroom apartment for couples and families of 1100sft, one-bedroom apartment for couples of 950sft and studio apartment for bachelors or students of 620sft.

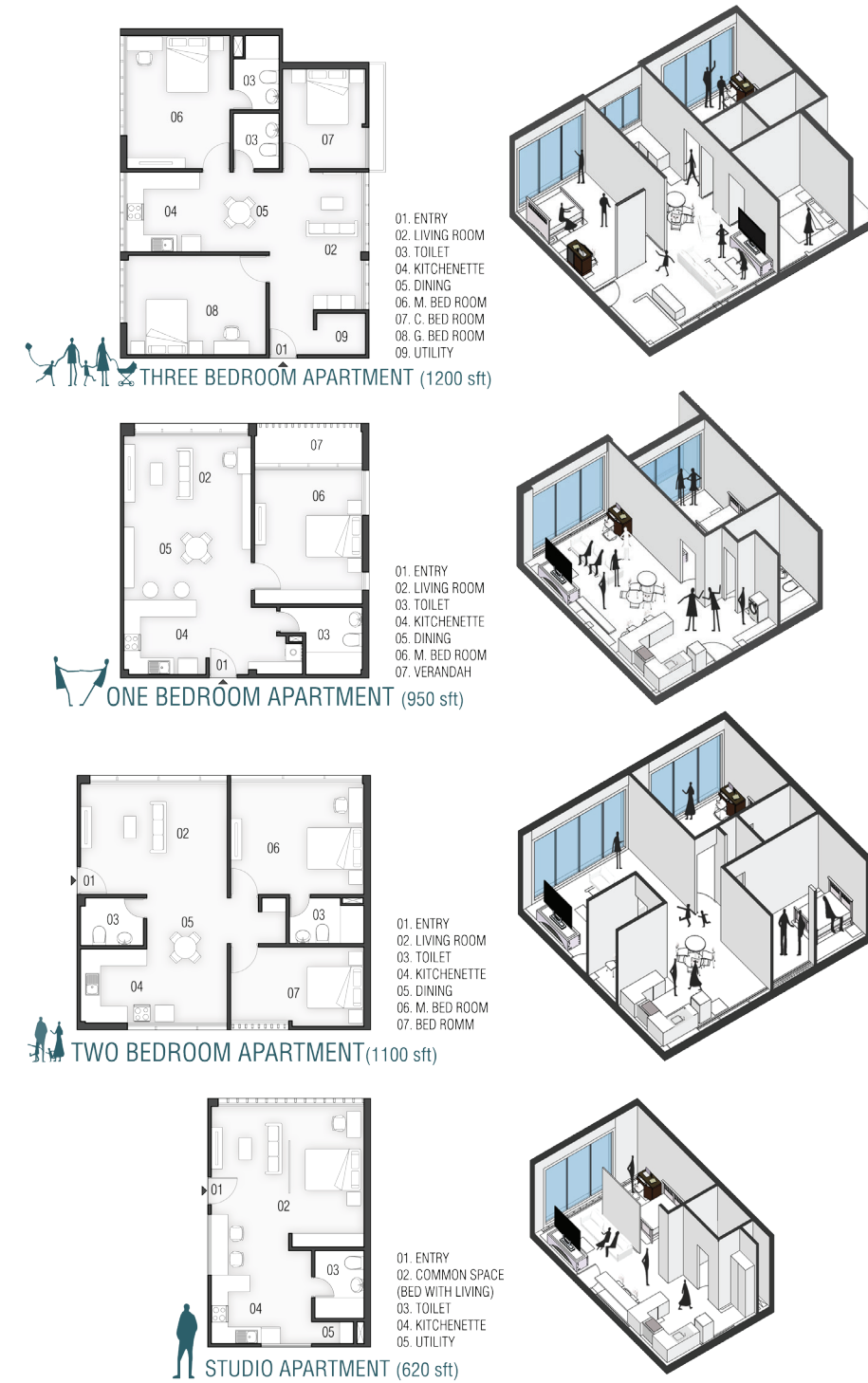


Fig 70. Design of the Dwelling Units of the New Housing Complex

# CONCLUSION

## CONCLUSION

The user has been a primary focus throughout the design process, with careful consideration given to the layout, lighting, and amenities. The consequence is a housing complex that provides a safe and inviting space for residents to call home. In conclusion, courtyard living with shared amenities is a persuasive illustration of how to develop residential communities that foster a sense of community and encourage social interaction. Central courtyard at the middle of the housing and incorporating amenities like playgrounds, gardens and community club houses, this strategy gives a shared space that people may use for relaxing, entertainment, and socializing. The architectural design proposals have been displayed to enhance people's quality of life, strengthen social connections and increase the feeling of safety. A sustainable and human-centered alternative to traditional housing patterns, courtyard living with shared amenities is a terrific way to build vibrant communities.



Fig 71. Axonometric View of The Proposed East River Houses

# A P P E N D I X

## PRESENTATION BOARD

# EVALUATING CROSS CULTURAL COURTYARD HOUSING FOR SOCIAL WELL BEING IN MANHATTAN, NEW YORK

Soniha Nuzrat

BOARD 01

## PROJECT BRIEF

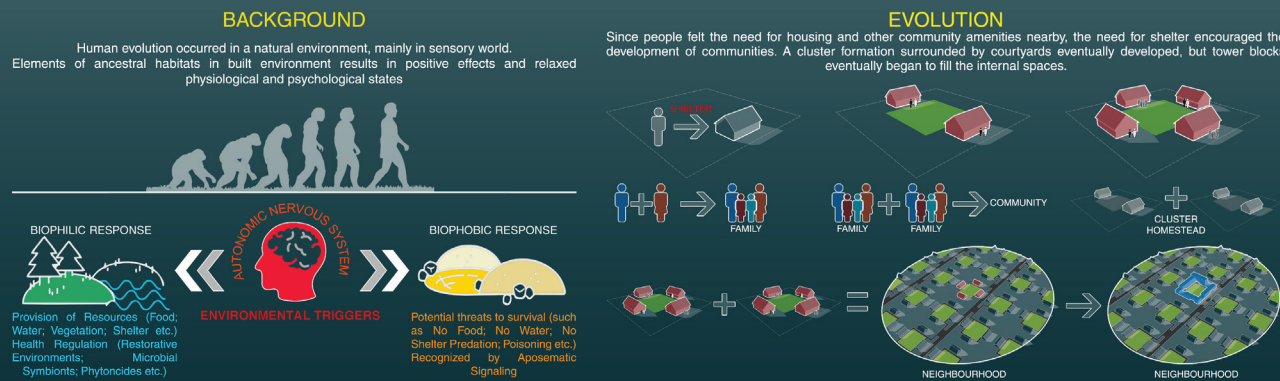
The research aimed to enhance social interaction among the residents and create a sense of community by designing public spaces and courtyard areas. This approach can help improve the overall well-being of the residents and foster a sense of belonging in the community. The project found that incorporating public spaces into the housing design can improve social interaction among residents and create a sense of community. Additionally, the availability of courtyard spaces for residents increased their satisfaction with their living environment. The addition of the urban platform and the multi-layered courtyard spaces can improve the housing for the residents' physical and mental well-being. The community's amenities, open green spaces, play areas, and venues for cultural events can give the area life and make it more vibrant. Furthermore, these features can also attract more people to the area, increasing social interaction and creating a sense of community. This can lead to a more sustainable and thriving neighborhood in the long run.

'A PIECE OF LAND — NOT SO VERY BIG, WITH A GARDEN AND, NEAR THE HOUSE, A SPRING THAT NEVER FAILS, AND A BIT OF WOOD TO ROUND IT OFF: THOSE WORDS WERE SET DOWN MORE THAN 2000 YEARS AGO, AROUND 30 B.C.

'THIS IS WHAT I PRAYED FOR'  
WROTE THE ROMAN POET HORACE

## THESIS QUESTION:

HOW CAN WE INCORPORATE COURTYARDS OR OPEN INTERACTIVE SPACES IN HOUSING AREAS OR NEIGHBORHOOD TO IMPROVE THE INTERACTIONS OF THE RESIDENTS THERE?



**DEMOGRAPHY**

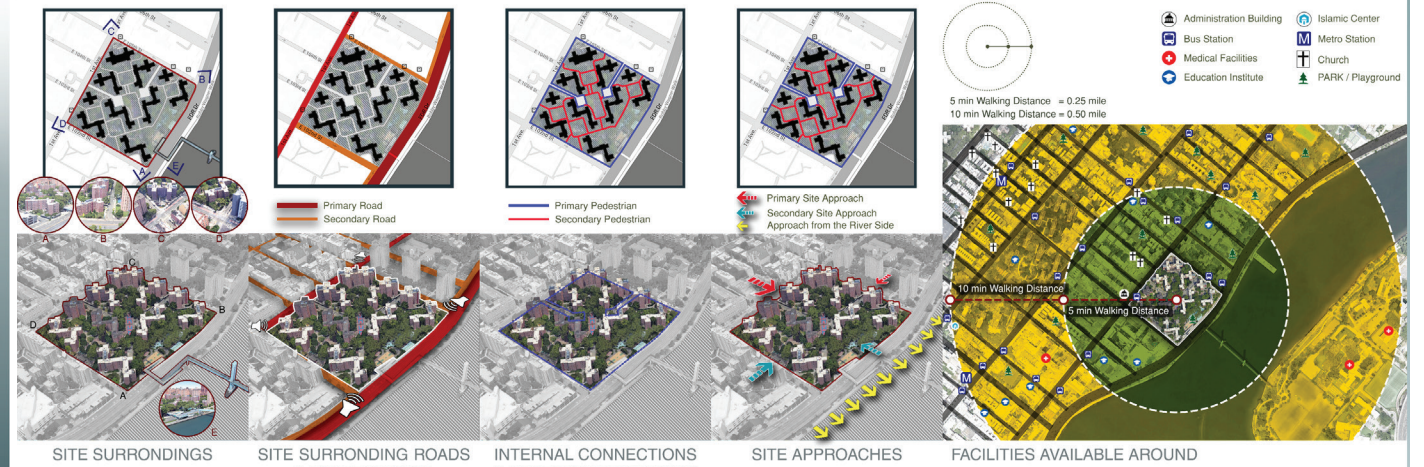
- AREA: 22.82 mi<sup>2</sup>
- POPULATION: 1.629 million (2020)
- DENSITY: 70,825 6/mi<sup>2</sup> (27,287 6/km<sup>2</sup>)
- AVG. HOUSEHOLD SIZE: 2.41
- POVERTY RATE: 30%
- MEDIAN HOUSEHOLD INCOME: 30,973 \$

**PRECEDENTS**

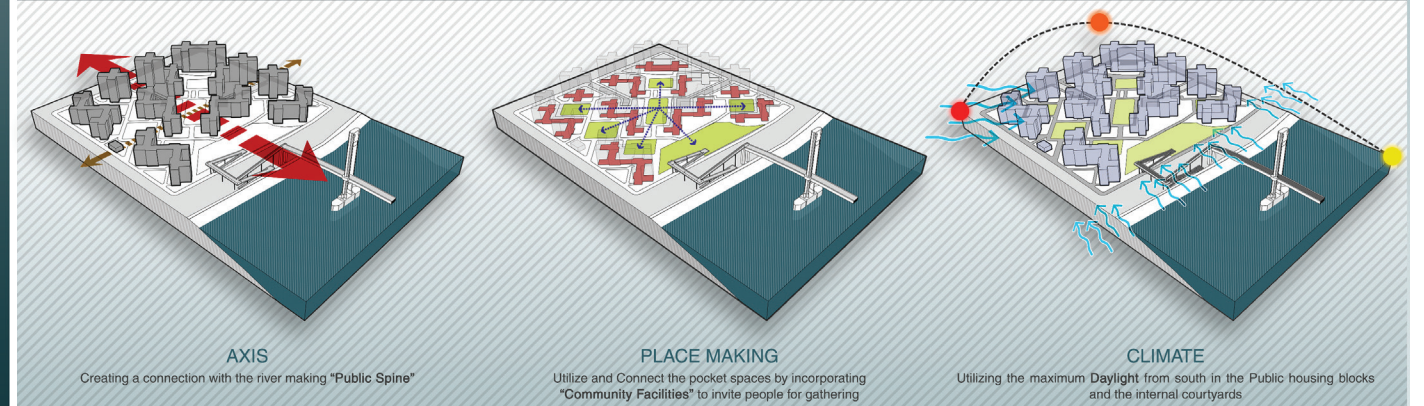
- VIA VERDE – THE GREEN WAY, New York, NY, USA, Dattner Architects
- TWIN PARKS NORTHWEST, THE COURTYARD, New York, NY, USA, Prentice & Chan, Ohlhausen
- VALLEY, Amsterdam, Netherlands, MVRDV
- ROBIN HOOD GARDENS, London, UK, Alison and Peter Smithson
- RIZIA POROMPORA COX'S BAZAR, Bangladesh, Ahsanul Huq
- RUPAL HOUSE, Old Dhaka, Bangladesh



## SITE ANALYSIS



## DESIGN CONSIDERATIONS



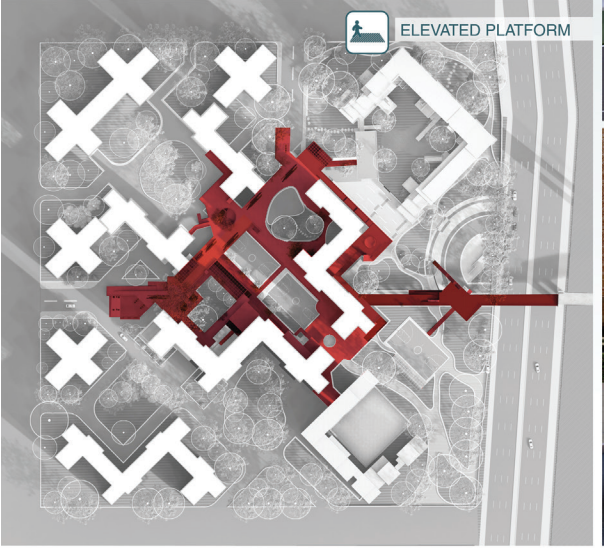
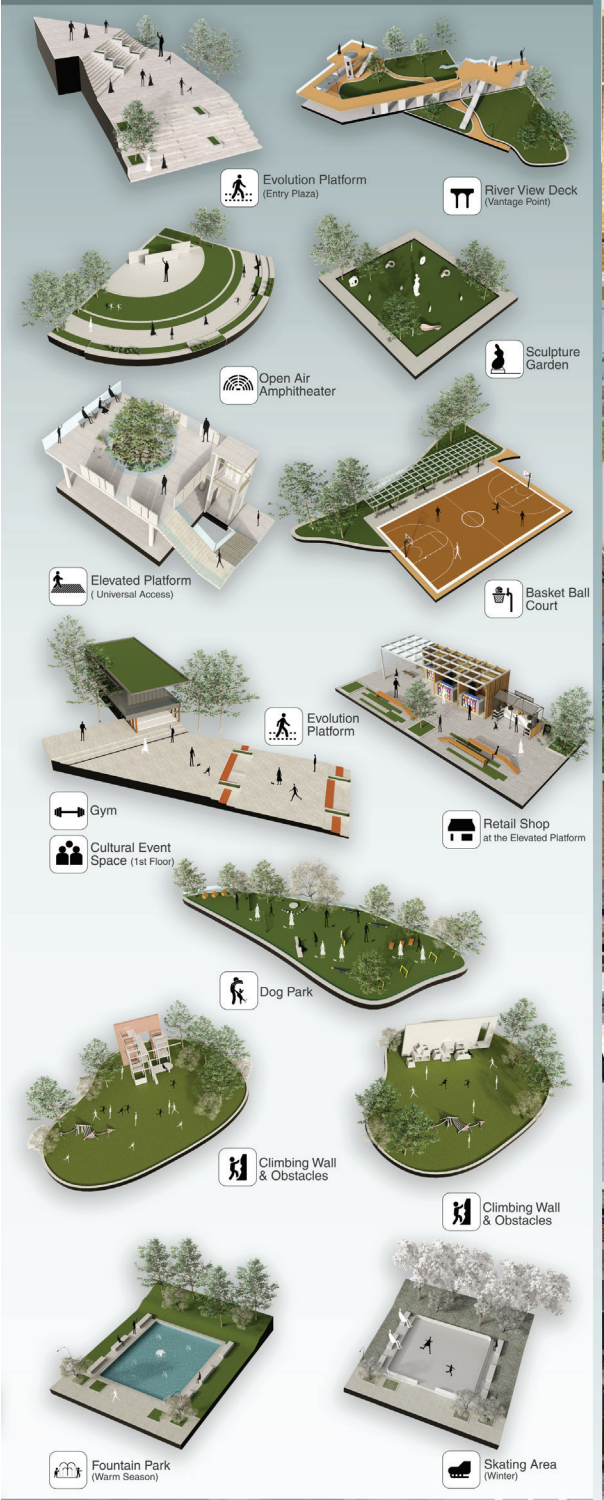
BOARD 02

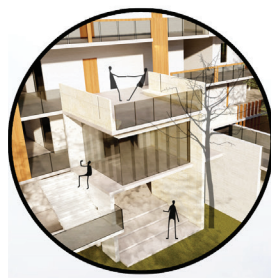


- Flower Garden
- Evolution Platform (Entry Plaza)
- Retail Shop
- Sculpture Garden
- Elevated Platform
- Recreational space
- Gym
- Evolution Platform
- Looking Deck (Vantage Point)
- Connecting Bridge to River
- Harlem River
- Book-Cafe
- Cultural Event Space
- View Deck (Vantage Point)
- Walking Trail
- Climbing Wall
- Open Air Amphitheater
- Wards Island Bridge
- Wards Island Bridge
- Harlem River
- BOOK CAFE



- Flower Garden
- Toddlers Playground
- Flower Garden
- Library (Proposed at the GF & 1st Floor)
- Flower Garden
- Art Gallery & Exhibition Space
- Basket Ball Court
- Fountain Park (Warm Season)
- Walking Trail
- Dog Park
- Flower Garden
- River View Deck (Vantage Point)
- Playground
- Skating Area (Winter)
- Basket Ball Court
- Basket Ball Court
- Flower Garden
- Library (Proposed at the GF & 1st Floor)
- Sculpture Garden
- Retail Shop
- Elevated Plaza
- Basket Ball Court
- Elevated Plaza
- Recreational space
- Book-Cafe
- Cultural Event Space (1st Floor)
- Elevated Plaza
- Gym
- Flower Garden





OUTDOOR AREAS

Outdoor areas such as terraces, balconies offer places to relax, engage in physical activity, and socialize. They can be made to support many different kinds of activities.



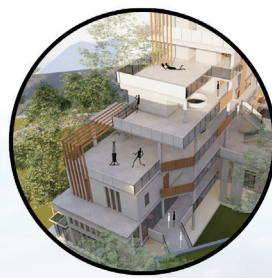
CIRCULATION SPACES

In housing developments, communal amenities promote community building in addition to designated gathering places. These facilities may include, among other things, co-working areas, laundry facilities, and circulation spaces as well.



SOLID VOID RELATIONSHIPS

Solid void relationships are important in the housing common shared spaces. Different levels of gathering spaces can help people to connect with other people in the community through different outdoor activities in the housing space.



MULTILAYERED TERRACES

Multilayered terrace spaces in the housing can provide opportunities for physical activity, relaxation, and socialization. They can be designed to accommodate a variety of activities, from picnics and barbecues to outdoor movies.



COMMON AREAS

The community room or clubhouse is a typical gathering place in housing. Events, gatherings, and social interactions can all take place in these areas. They might have features like TV, and game room in addition to areas for exercising and taking care of oneself. Within a housing development, community rooms can serve as a vital hub for establishing social ties and fostering a sense of belonging.



HOUSING COMPLEX



EVOLUTION PLAZA



HOUSING COMPLEX



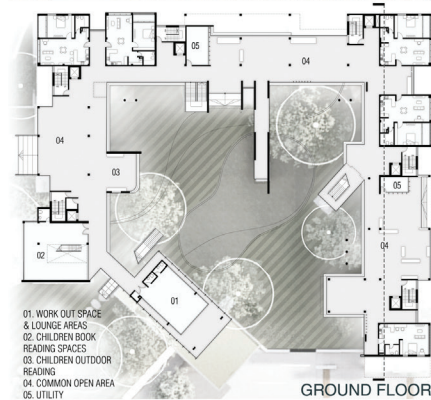
CULTURAL EVENT SPACE



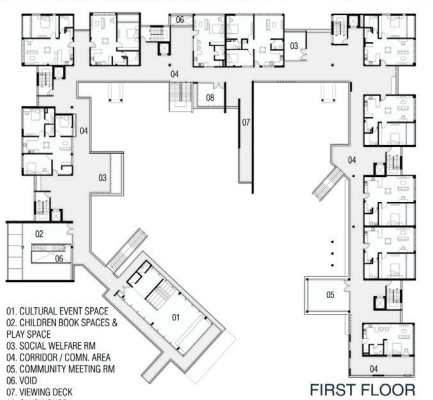
EVOLUTION PLAZA



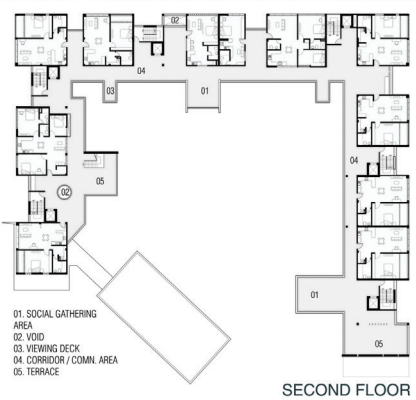
GATHERING SPACE



GROUND FLOOR Scale: 3/4" = 1'-00"



FIRST FLOOR Scale: 3/4" = 1'-00"



SECOND FLOOR Scale: 3/4" = 1'-00"



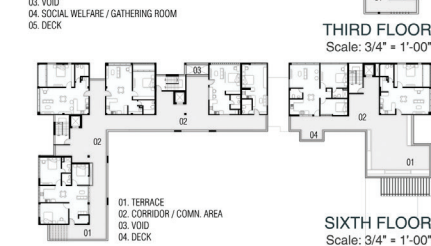
THIRD FLOOR Scale: 3/4" = 1'-00"



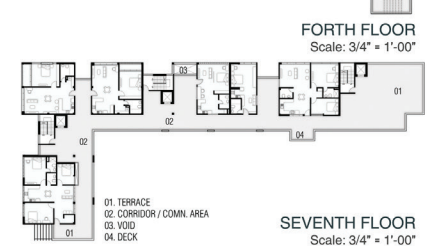
FORTH FLOOR Scale: 3/4" = 1'-00"



FIFTH FLOOR Scale: 3/4" = 1'-00"



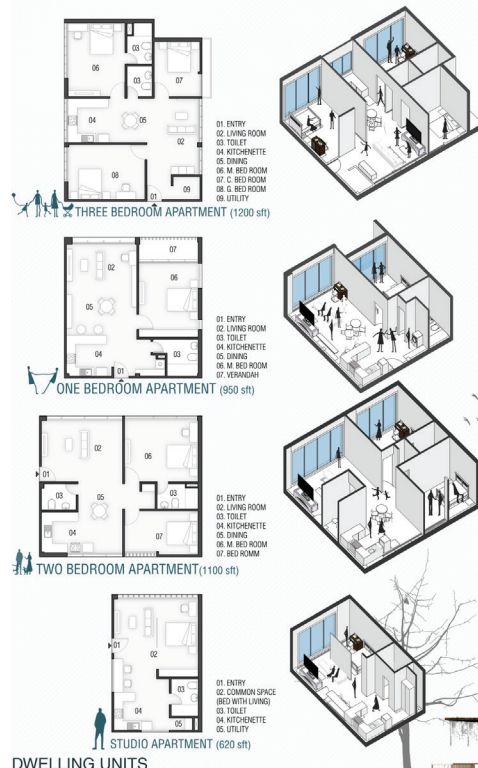
SIXTH FLOOR Scale: 3/4" = 1'-00"



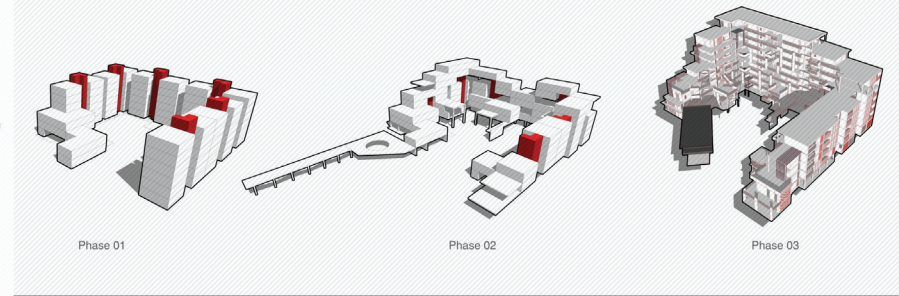
SEVENTH FLOOR Scale: 3/4" = 1'-00"



EIGHTH FLOOR Scale: 3/4" = 1'-00"



DWELLING UNITS



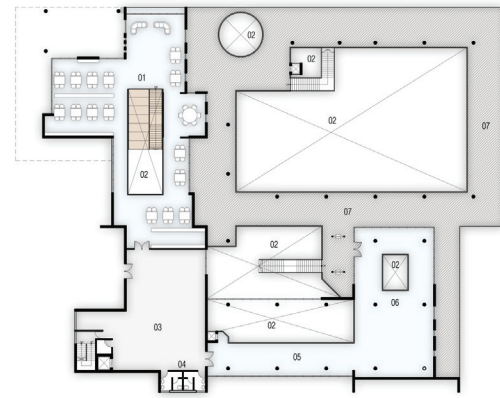
MASSING DEVELOPMENT



SECTION



GROUND FLOOR\_LIBRARY & ART GALLERY  
Scale: 1" = 1'-00"



FIRST FLOOR\_LIBRARY & ART GALLERY  
Scale: 1" = 1'-00"



## BIBLIOGRAPHY

- Krieger, James and Donna L. 2002, Higgins, Housing and Health: Time Again for Public Health Action, Am J Public Health. 92(5): 758–768.
- Ana M Novoa 1, Jordi Bosch 2, Fernando Díaz 3, Davide Malmusi 4, Mercè Darnell 3, Carme Trilla 3, 2014, Impact of the crisis on the relationship between housing and health. Policies for good practice to reduce inequalities in health related to housing conditions, Gac Sanit. SESPAS: 28:44–50.
- Edwards Brian ,2006, Courtyard housing: past, present and future: Taylor & Francis.
- Glass Anne P., 2013, Lessons Learned From a New Elder Cohousing Community, Journal of Housing For the Elderly, 27:4, 348-368, DOI: 10.1080/02763893.2013.813426
- Oliver, P., 2003, Dwelling: The House across the world. Oxford: Phaidon Press Ltd
- Stefanos, P., Roger, S., & James, T., 1996, Courtyard Housing in Los Angles: A Typological Analysis.
- Das, N. 2006. Courtyards houses of Kolkata: Bioclimatic, typological and socio-cultural study. Kansas State University.
- Abass, Fatma & Ismail, Lokman & Solla, Mohmed. 2016. A review of courtyard house: History evolution forms, and functions. Journal of Engineering and Applied Sciences. 11. 2557-2563.
- Blaser, W. 1985,. Atrium: Five Thousand Years of Open Courtyards. New York: Wepf and Co. AG, Basel.
- “Private Developers to Renovate 1,673 NYCHA Public Housing Units in East New York.” n.d. Archinect. <https://archinect.com/news/article/150293975/private-developers-to-renovate-1-673-nycha-public-housing-units-in-east-new-york>.

## LIST OF FIGURES

• Fig. 1: Rapid Urbanization .....	01
• Fig. 2: Courtyard Feature in a housing of New York City .....	02
• Fig. 3: House Pattern. Image Courtesy of Fabiola Morcillo.....	03
• Fig 4: Human Evolution and Triggers .....	05
• Fig 5: Evolution of housing from the early age.....	06
• Fig 6. TWIN PARKS NORTHWEST, THE COURTYARD Prentice & Chan, Ohlhausen .....	12
• FIG 7. RUPLAL HOUSE, Old Dhaka, Bangladesh .....	12
• FIG 8. RIZIA POROMPORA, Cox’s Bazar, Bangladesh .....	12
• FIG 9. RIZIA POROMPORA, Cox’s Bazar, Bangladesh .....	12
• FIG 10. VALLEY, Amsterdam, Netherlands MVRDV .....	12
• FIG 11. VALLEY, Amsterdam, Netherlands MVRDV .....	12
• FIG 12. Robin Hood Gardens, London, UK Alison and Peter Smithson .....	12
• FIG 13. Via Verde – The Green Way, New York, NY, USA Dattner Architects .....	12
• Fig 14: Manhattan demographic .....	13
• Fig 15: News Article for housing developments of NYCHA .....	13
• Fig 16: News Article-Private Developers to Renovate 1,673 NYCHA Public Housing Units in East New York ..	13
• Fig 17. East River Houses, Manhattan New York .....	14
• Fig 18. Courtyard Areas EAST RIVER HOUSES, NYC .....	15
• Fig 19. Aerial View of EAST RIVER HOUSES, NYC .....	15
• Fig 20: Site Analysis of Surroundings, roads and traffic noise .....	16
• Fig 21: Site Analysis- Internal connections & pedestrian pathways .....	17
• Fig 22: Masterplan Development- Phase 1 .....	18
• Fig 23: Masterplan Development- Phases (2,3 & 4).....	18
• Fig 24: Different ideas of masterplan development .....	19
• Fig 25: Urban Platform idea in Masterplan Development .....	19
• Fig 26: Design Considerations for Masterplan Development .....	20
• Fig 27: Urban Platform conceptual idea with integrated courtyard in the housing .....	21
• Fig 28: Conceptual idea of community amenities with integrated courtyard .....	21
• Fig 29: Conceptual idea of community amenities with urban platform .....	21
• Fig 30: Conceptual idea of community amenities .....	21
• Fig 31: Conceptual idea of community amenities with Existing Housing .....	21
• Fig 32: Conceptual idea of community amenities .....	21
• Fig 33: 5 min Walk Diagram to find Services near the site .....	22
• Fig 34: Exploded Diagram of Program .....	23
• Fig 35: Elevated Urban Platform to Connect the Whole Housing Community Facilities .....	24
• Fig 36: Elevated Urban Platform to Invite Public Inside the Housing .....	25
• Fig 37: Section of the housing .....	25
• Fig 38: Masterplan Design of Easter River Houses .....	26



- Fig 39: Place making- Key Zones-1 ..... 27
- Fig 40: Place making- Key Zones-2 ..... 28
- Fig 41: Book Cafe Space in The Ground Floor of the Housing Connecting to The Courtyard ..... 29
- Fig 42: Elevated Urban Platform to Invite Public Inside the Housing ..... 30
- Fig 43: Urban Platform and View Towards Basketball Court ..... 31
- Fig 44: Basket Ball Court and The Urban Platforms to Engage Residents in Various Levels ..... 31
- Fig 45: View Towards Art Gallery from the Sculpture Garden ..... 32
- Fig 46: View Towards Library from the Entry Point of Housing Area ..... 32
- Fig 47: Schematic Design of Library and Art Gallery in the Existing Housing Area Connecting to the Courtyard ..... 33
- Fig 48: Elevated Urban Platform to Invite Public Inside the Housing ..... 34
- Fig 49: Floor Plans of Library and Art Gallery in the Existing Housing Area Connecting to the Courtyard ..... 35
- Fig 50: Library Space- Ground Floor ..... 36
- Fig 51: Art Gallery Space- Ground Floor ..... 36
- Fig 52: Sculpture Garden Space- Ground Floor of the Art Gallery ..... 37
- Fig 53: Library Reading Space- First Floor ..... 37
- Fig 54: Retrofitting of the Extended Balcony Spaces to the Existing Housing block to Connect the Courtyard Spaces..... 38
- Fig 55: Retrofitting of the Extended Balcony Spaces Elevation ..... 38
- Fig 56: New Housing Block Development On the South East Side of the Housing Site ..... 39
- Fig 57: New Housing Block Development Conceptual Idea ..... 40
- Fig 58: New Housing Block Development ..... 40
- Fig 59: Conceptual Idea of the Housing in Staggered Way to Maximize View Towards River ..... 40
- Fig 60: New Housing Block Development Phases ..... 40
- Fig 61. New Housing block and Internal Courtyard spaces ..... 41
- Fig 62: Solid Void Relationship in Multi-Level space of the Housing ..... 46
- Fig 63: Conceptual Section of the Housing to display Multi-Level space of the Housing ..... 46
- Fig 64. View Towards the Courtyard of the Housing Block ..... 47
- Fig 65. View Towards the Courtyard and the Cultural Event Space of the Housing Block ..... 47
- Fig 66. View Towards the Courtyard of the Housing Block from the Amphitheatre ..... 48
- Fig 67. The Cultural Event Space and the Evolution Plaza View ..... 48
- Fig 68. View Towards the Amphitheatre from the Ground Floor of the Housing ..... 49
- Fig 69. View Towards Harlem River from The Cultural Event Space ..... 49
- Fig 70. Design of the Dwelling Units of the New Housing Complex ..... 50
- Fig 71. Axonometric View of the Proposed East River Houses ..... 51



© 2023

**SONIHA NUZRAT**

soniha.tisha@gmail.com  
All Rights Reserved