

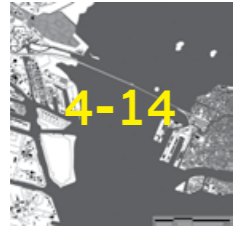
PORTFOLIO

UNSW
MASTER OF URBAN DEVELOPMENT AND DESIGN

LI DAN

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PROJECTS



WATER CITY - VENICE



WESTCONNEX - BARDWELL VALLEY PARK



NEW YORK - PORT AUTHORITY BUS TERMINAL

URBAN DEVELOPMENT AND DESIGN INFRASTRUCTURE & CITY

01



VENICE

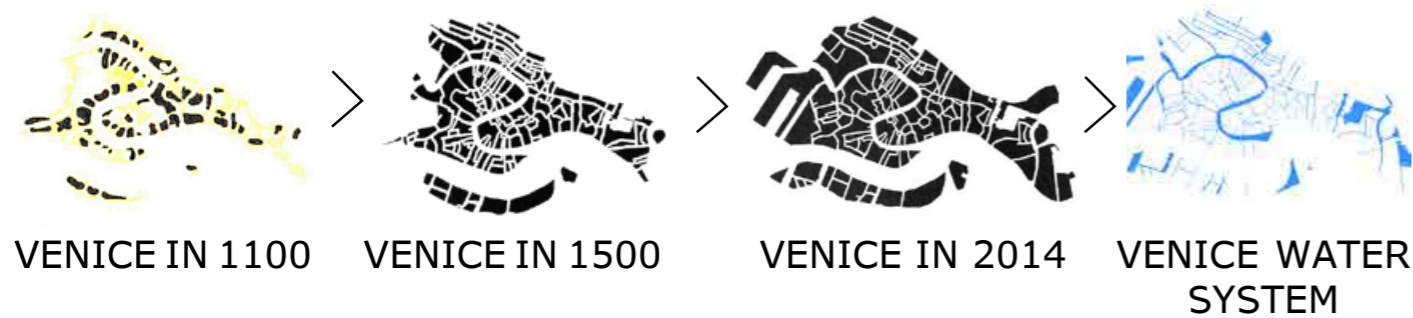
INSULA MARITTIMA

WATER CITY - VENICE

Group work by Li Dan, Fang Yuan, Ju Huangchenqi

BACKGROUND AND INTRODUCTION

To protect the world heritage listed historic city of Venice, cruise ships will be relocated to Porto Marghera on the mainland at Mestre. This creates the opportunity to redevelop the extensive hard land areas of the Porto Marittima south of the transport entry to Venice of Santa Lucia and the Piazzale Roma, as a new, mixed use community.



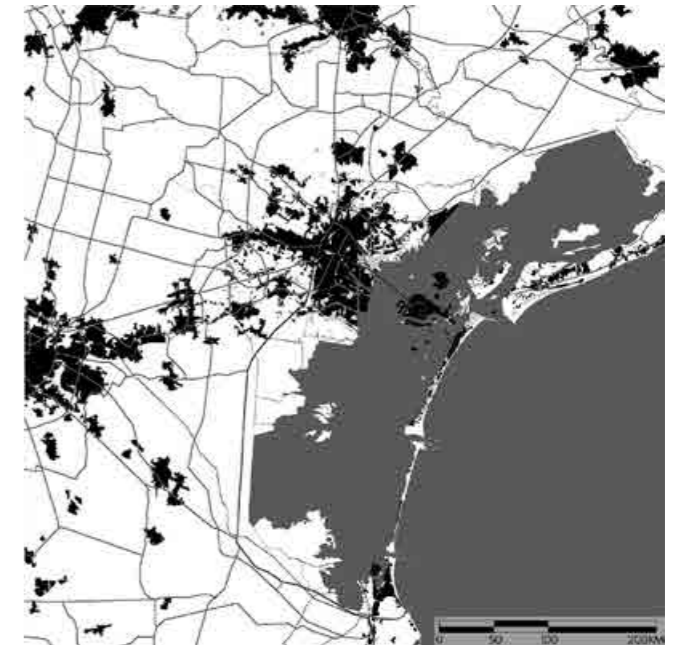
EXISTING SITUATION

These are the photos of the object site conditions. All these places are used for car parking and for cruise ships terminals. This site is used as a large transport station for the vast number of tourist and residents who require parking space.

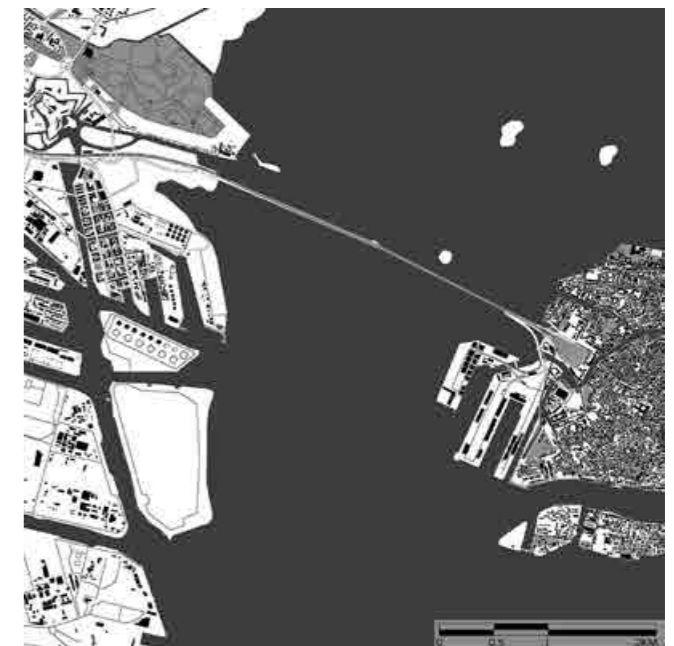
There has been a lack of organisation and consistent planning in the area.



Urban Region
This image shows the relationship of Venice historical centre and mainland city centre.



Urban District
The urban morphology study through this drawing shows the building type and city density.

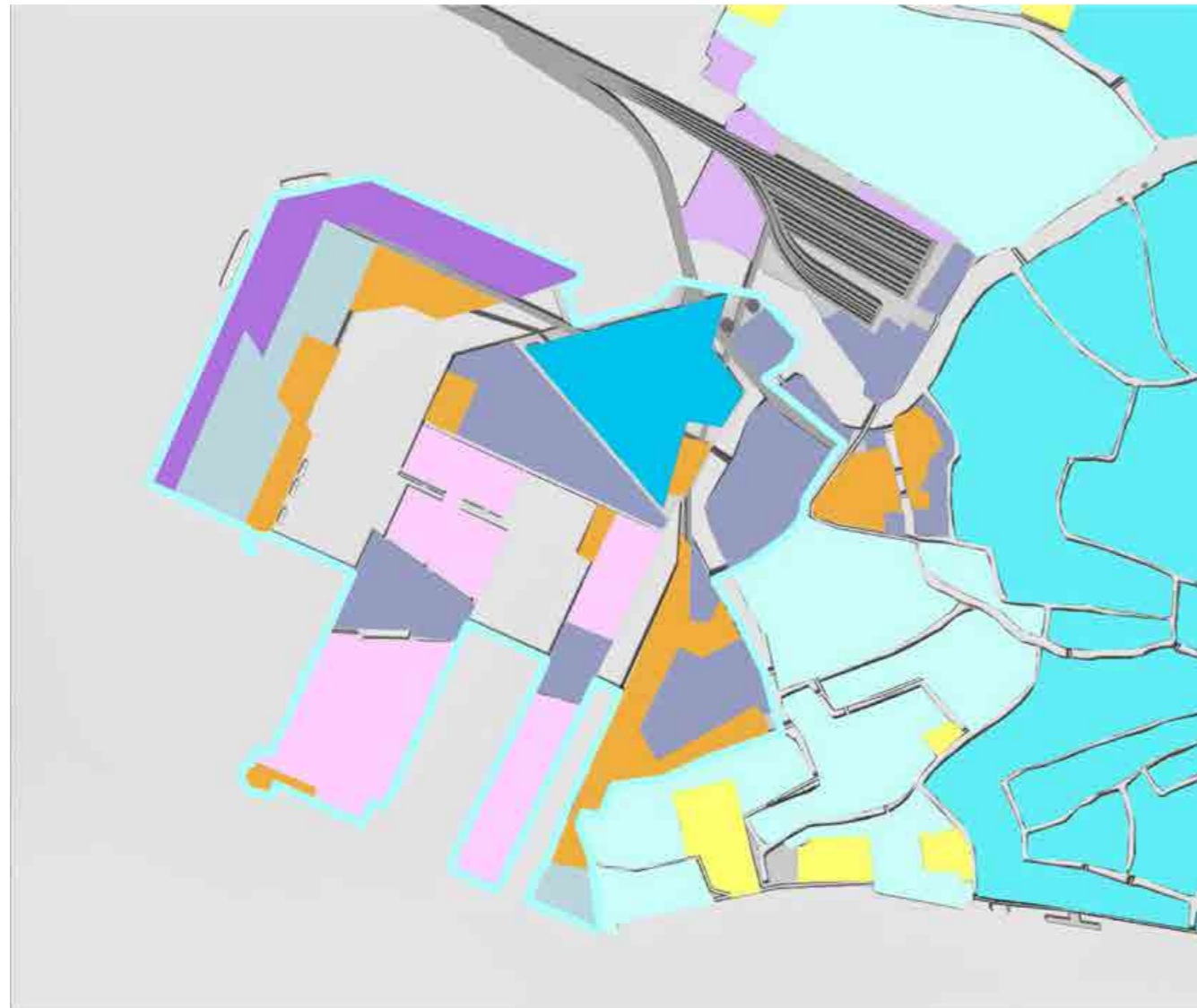


Urban Block
The limited site chosen for these drawing analyse the buildings, roads and water crosses around the objective site.

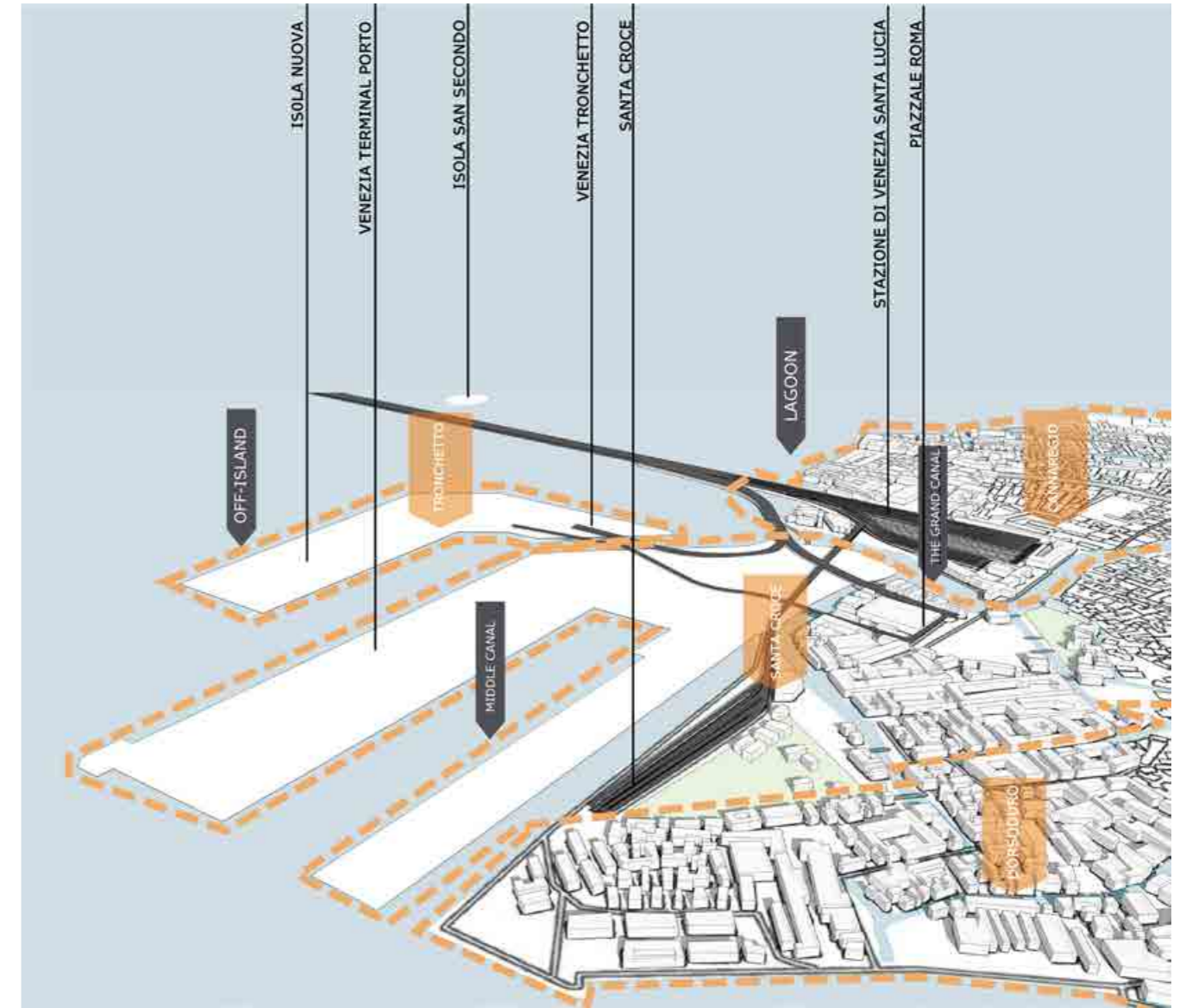


ISSUES

Local Venetians have been leaving the historic centre of Venice due to the frequent flooding events and the historic building maintenance cost. The major use of our site is as a parking area for the people who drive into the historic city leaving their vehicles behind. Our site is part of an organised process for transporting large groups of tourists and local people. Poor planning in this location contributes to a lack of available parking spaces, as a consequence, with the increased tourist numbers and the development of relevant tourism businesses, the number of employees who live outside the historic city would face even longer distances commuting everyday.



- SITE EDGE
- WORKING WATERFRONT
- BUSINESS PARK
- COMMERCIAL CORE
- GENERAL RESIDENTIAL
- GENERAL INDUSTRIAL
- MIXED USE
- ENVIRONMENTAL CONVERSATION
- INFRASTRUCTURE
- NEIGHBOURHOOD CENTRE
- LOCAL CENTRE



Existing building type

VISION

The proposal for our site would be to provide abundant housing to maintain the Venetian living style for the residential area. Furthermore, we will add a new alternative transport system for commuting. Each of the stages in our project will propose a sponge street design for dealing with the flooding issue. The shape of these sponge streets would look similar to the original waterways in Venice, however, the green space and materials will leak easily ensuring a form of deceleration for the storm surge. The mixed use land plan for this project proposal will provide an incentive to for Venetians to move back to the historic city and it will stimulate the cultural activity of this old town, ensuring that it remains a vital hub for the art, culture and commerce of the region.



Bird view looking Lagoon to Venice historic centre



Bird view looking Santa Croce to northwest



URBAN DESIGN FRAMEWORK



Section A-A'

STRATEGIES

This master plan includes residential, commercial, and ultimately functional public green spaces and sports areas. The commercial area provides needed retail for residents and visitors. This half of the functional area will continue to be used as a port of discharge. The other half will be a tourist distributing centre, it could include hotels, water bus stations and Fiera buildings. The residential area will have two kinds of building style, both traditional and modern. The public space includes a green area, aesthetic landscape and a sports area which could separate the residential, commercial and functional areas. To enhance the convenience of transportation for tourists and local people, a new transit line should be created. This project will provide a light rail line from the Marco Polo Airport to the historic centre, it will have a circle line linking each island and the terminal, situated at the Piazzale Roma. The proposal is to design a ring shape light rail around the project site before establishing 6 stations on each island respectively.

Because the current function of our site is as a working port, there is the necessary requirement for the port area in our proposal, which will be at the very outside island's edge. This port edge will provide the facilities for cargo boats to supply the daily necessities for the historic centre. It will ban cruise ships from anchoring at this port and will set up a cruise ship terminal on the other side instead. When the tourists alight, they can directly take the light rail to the historic centre. Beside the port, it will propose the establishment of a functional building -fair. It could provide more activity for the existing business exchange and stimulate cultural communication in Venice.

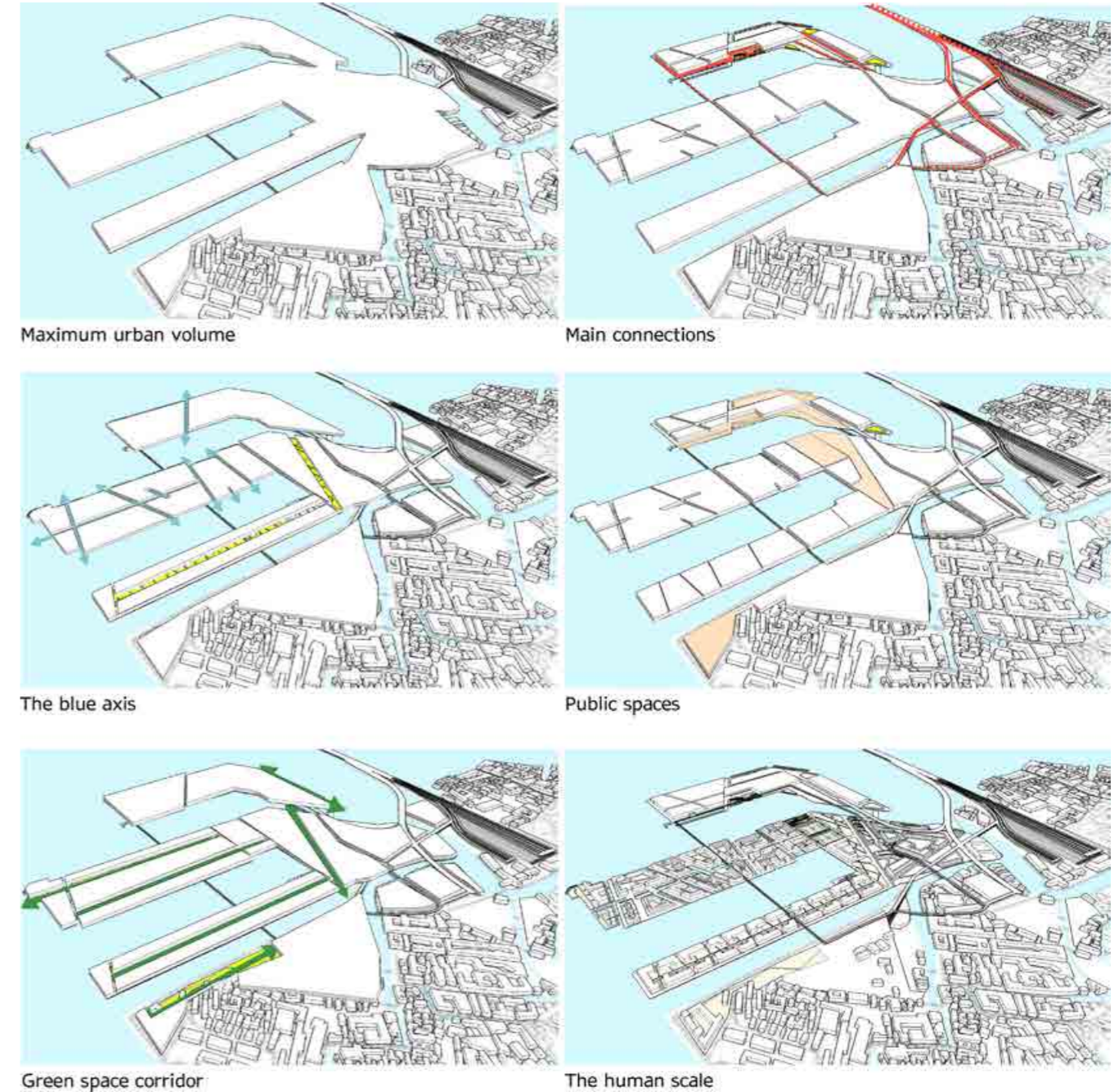
The proposed residential areas will provide for 5,000 people. Because of the flooding issue in Venice, local people tend to move to the other side which is quite far away from their working place. We will offer an abundance of residential housing on our site, coupled with the sponge street design, in order to resolve the flooding issue efficiently. Furthermore, we will provide some resilient areas at the waterfront to deal with the flooding issue.

The sponge street is designed to combine with the new waterways across our site; it would maintain the current living style of modern Venice.

The circle light rail line will travel across our site. People living there have an easy way to go to home and to their working place and the commercial area of the inner Venetian island. This convenient way to access the commercial area has the potential to increase the business development in Venice.

FEASIBILITY

Overall Project Site: 72.3111 ha
 Total Gross Floor Area: 731,706 sq m
 Residential Gross Floor Area: 292,712 sq m
 Number of Dwelling Units: 3560 units
 Residential Population: 9150
 Commercial GFA (including Retail): 138,232 sq m
 Cultural institutions GFA: 300762 sq m



DESIGN CONCEPT



PERSPECTIVES



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SYDNEY

BARDWELL VALLEY PARK

WESTCONNEX - BARDWELL VALLEY PARK

Group work by Li Dan, Wu Di, Ding Shitao, Ma Danni

BACKGROUND AND INTRODUCTION

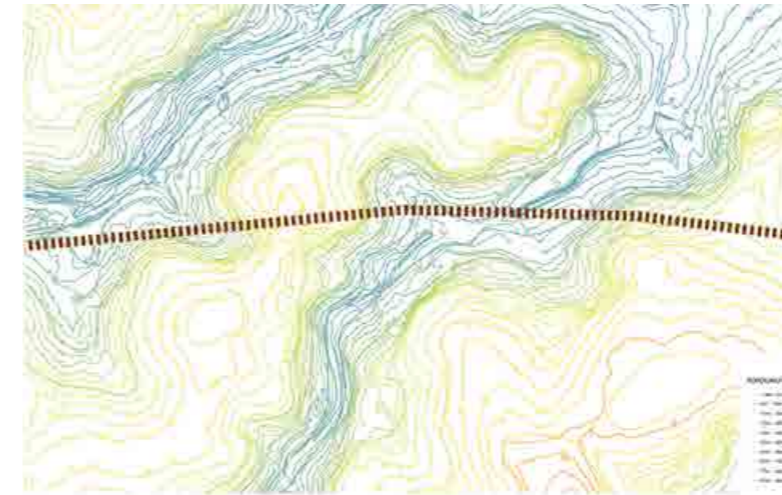
The site of our study area is located in Rockdale - northwest of Sydney. Although there are three metro stations nearby, it still has large area outside the scope of 10-min walking distance of these stations. This area is a typically rural place, besides far away from city, the density of this area is extremely low. It contains majority of townhouses and vast of green space. However, these green space occupies a large part of the land, which mostly belongs to nature reserve and business private land. There is a valley across this study area from the northeast to the southwest and a river is passing by. The hypothetical new M5 railway passes through this study area, mainly across the Bardwell Valley Golf Course. And the precinct of detailed design includes the golf park and part of its surrounding area.

ISSUES

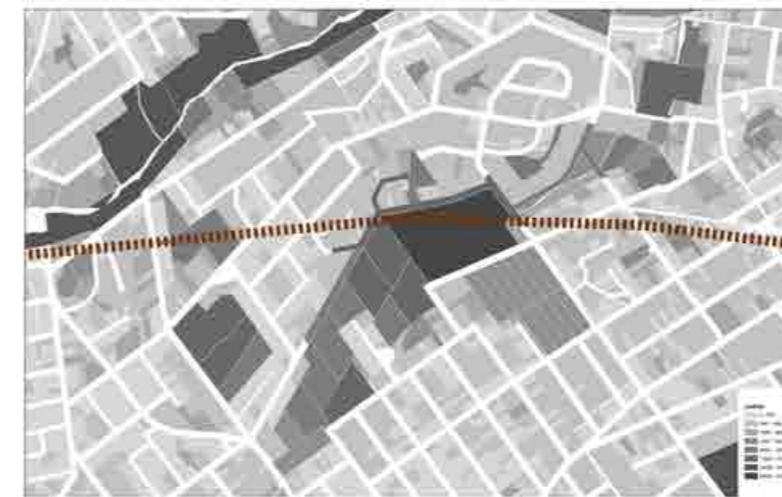
Because of the vast area of green space in the core of the study area, the topography is variety and complexity. In addition, most of these green space is the private business land and the natural reserve. Therefore, there still lacks of enough public open green space to serve residents in this area. The three metro stations are nearby, Bexley north station, Bardwell park station and Arncillf station,. However, service range of 10-min walking distance doesn't coverage the precinct. Despite the coverage gap, the private business green land becomes a barrier to the connectivity of this area. Because its location is far away from city, people who living here mostly rely on vehicles to commute. It leads to poor development of the pedestrian and cycling route networks. The major building type of this area is the townhouse, and its building height is mostly 2 to 3 storeys. It creates a very low density dwelling area with poor number of facilities to serve.



EXISTING SITE CONDITION PROPOSED STATIONS



Contour



Plot Structure



Built Type



Bardwell Valley Golf Club



The Topography and Housings



Private Green Space



Pedestrian and Motor Way

DESIGN CONCEPT

Organic Principle

Private Ownership

Unconnected Road Network

Poor Facilities

Nature Built Form

Market of Australia Golf Courses: 50% Financial distress

Bardwell Valley Golf Club hasn't turned a profit in five years

Increasing Connectivity

A Call for Transformation

Golf Course	Transformation
Eastlakes Golf Club	Houses or apartments
Gordon Golf Club	Playgrounds/Picnic areas/ Walking and cycling trails
Strathfield Golf Club	Units and townhouses
Botany Golf Club	Sporting fields
Moore Park Golf Course	Parkland for community

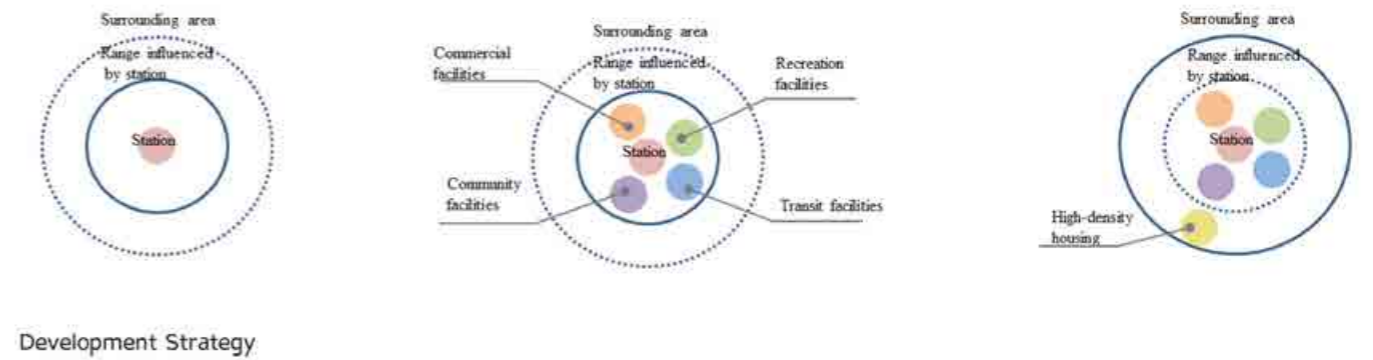
Examples of Golf course transformation

Community Services

Concept



URBAN DESIGN FRAMEWORK

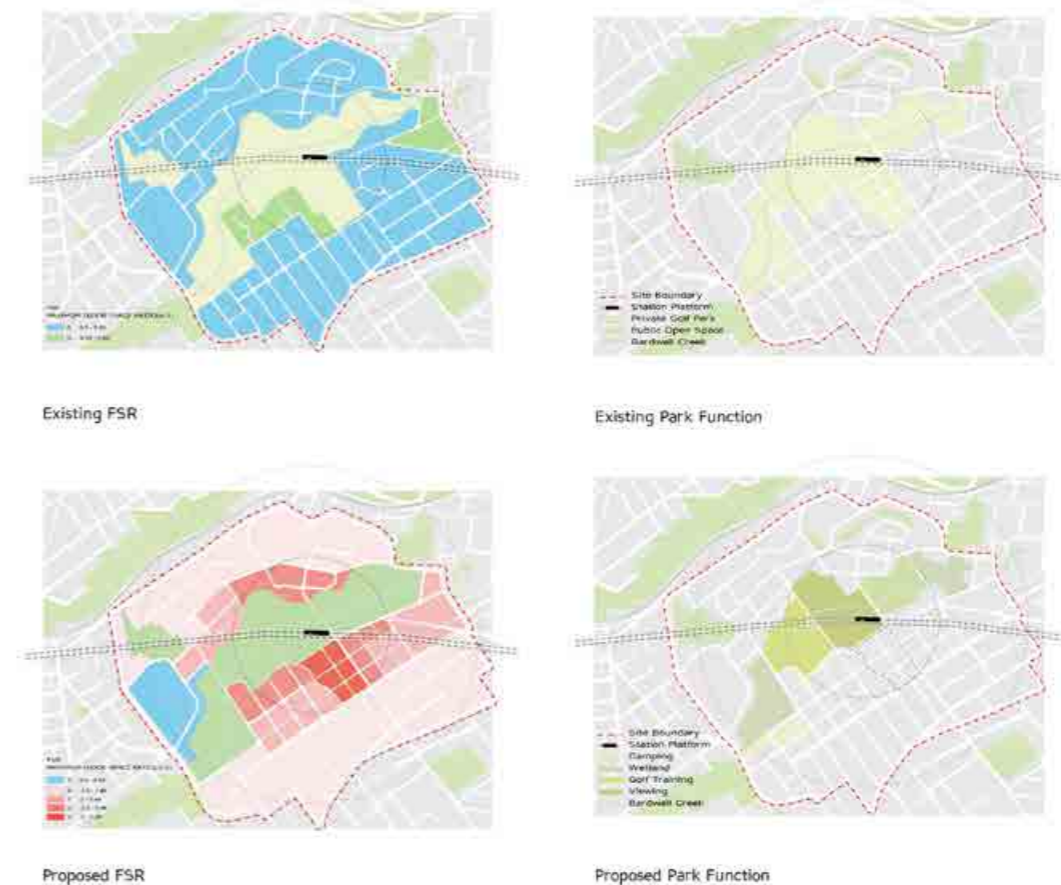
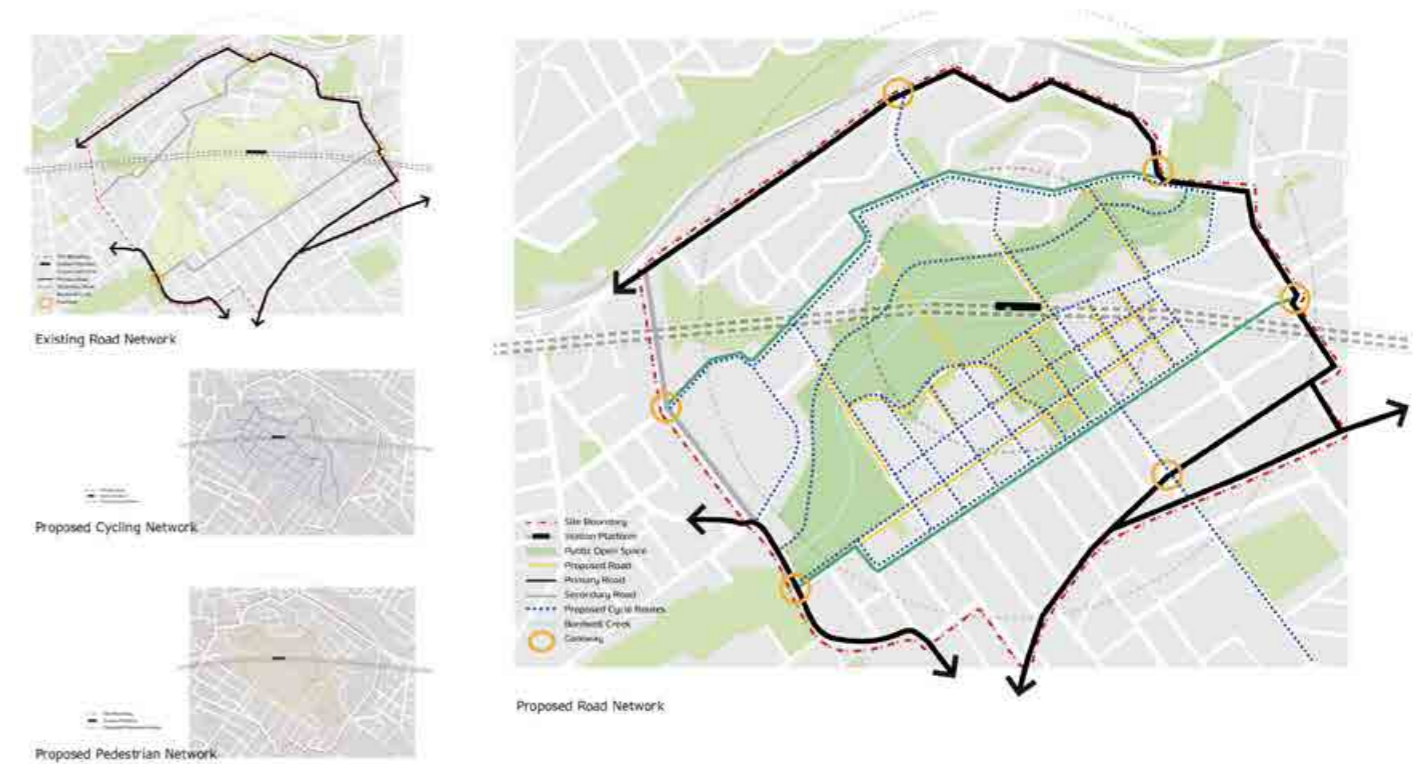
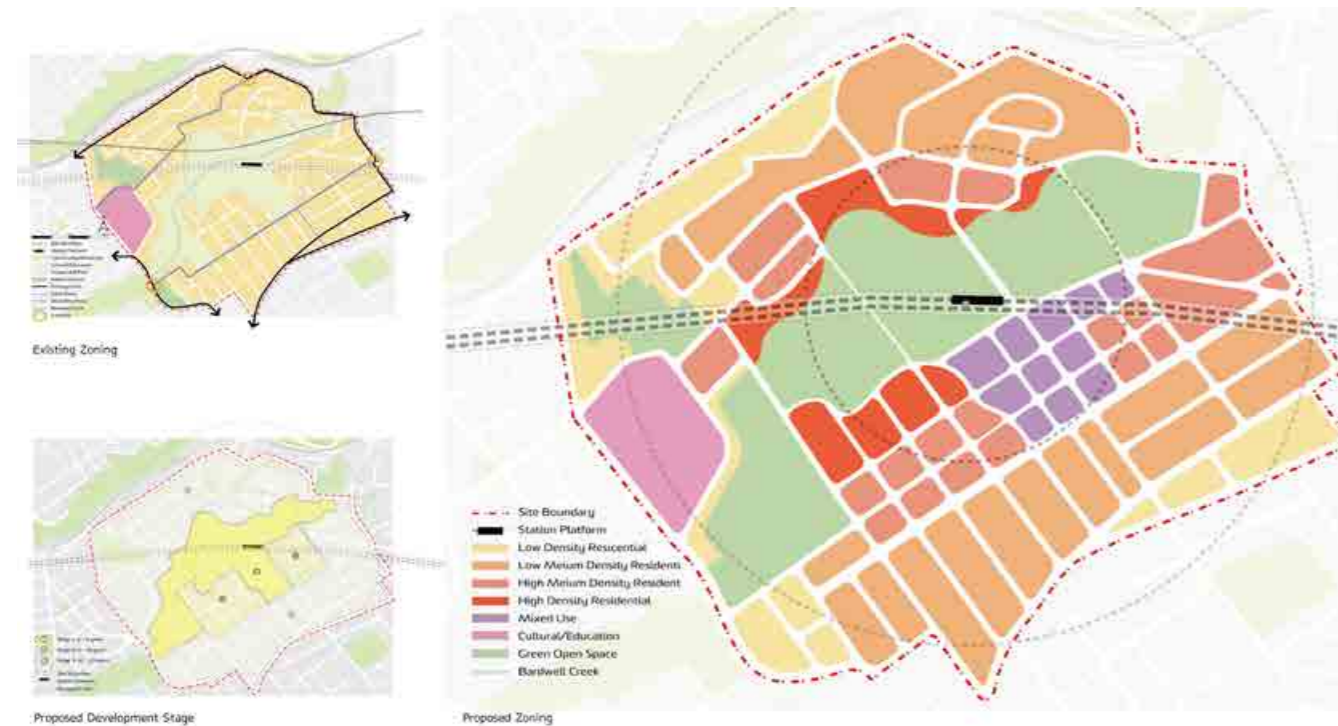


VISION STATEMENT

To create a walkable, liveable, ecological community and provide a showcase of sustainable and ecological living with natural green space. Local residents can enjoy a convenient and rich social life here. Population structure could change. More younger population would be attracted to settle here, which improves community vitality. Passengers of the new station are willing to join the social activities here.

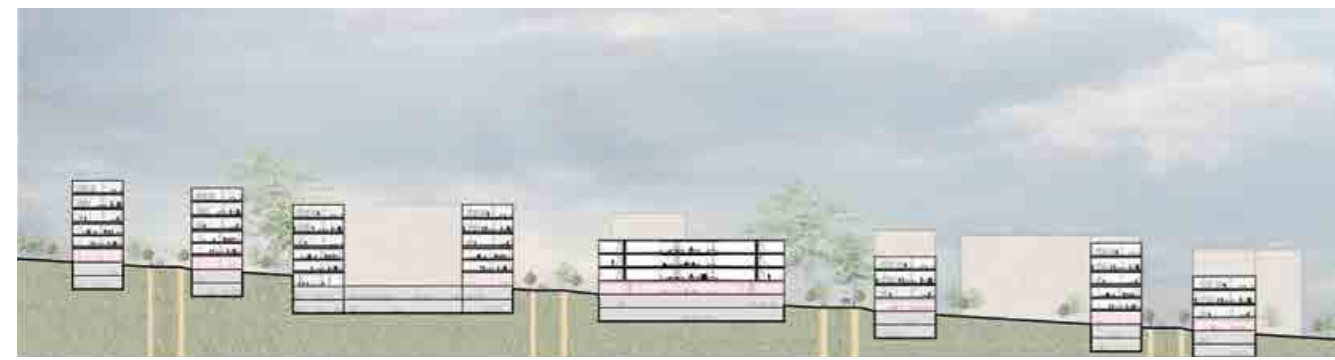
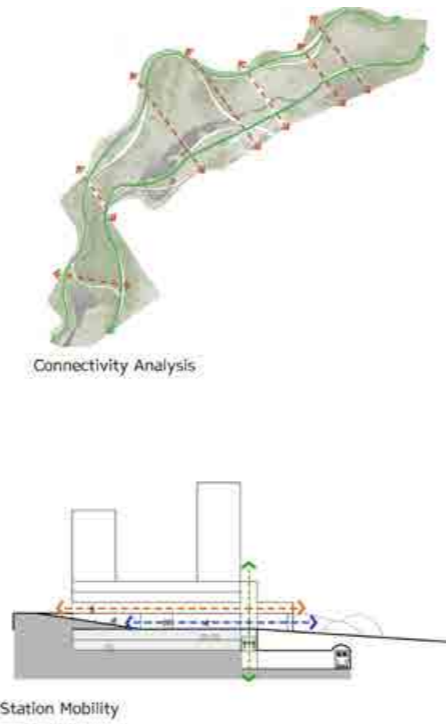
OBJECTIVES

1. Create a public park. The previous private golf course will be transformed into a new public green space. This park has a high quality of landscape using original terrain.
2. Create a local center. A new local center would be placed above the station of new M5 serving for passengers and local residents. It is taken as a focal point for high density development.
3. Re-plan road network. Create connections between both sides of the green park. And the key point is adding roads linking station and surrounding residential areas. Recycle routes and pedestrian routes would be included in the new integrated transportation system.



PRINCIPLES

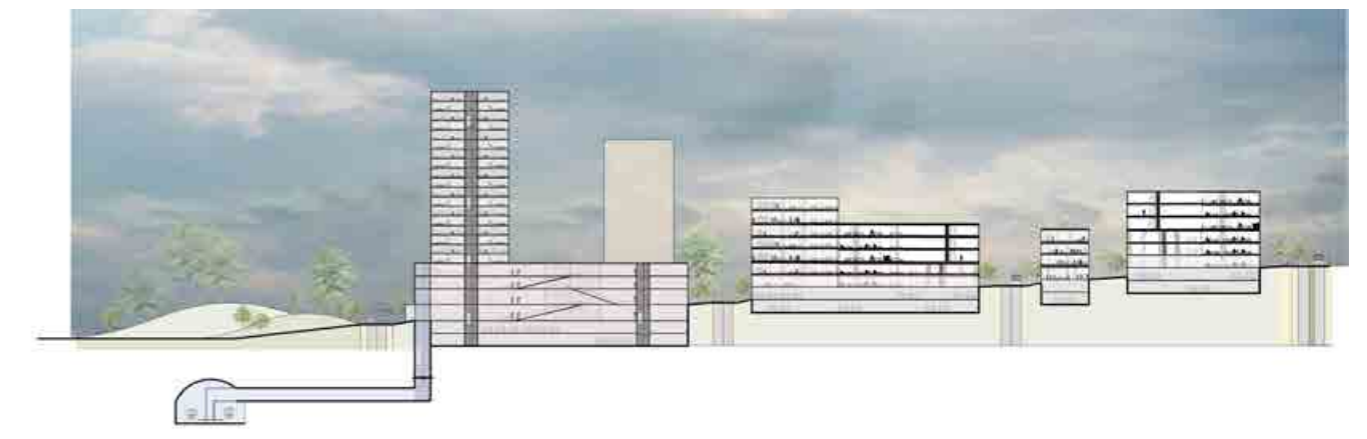
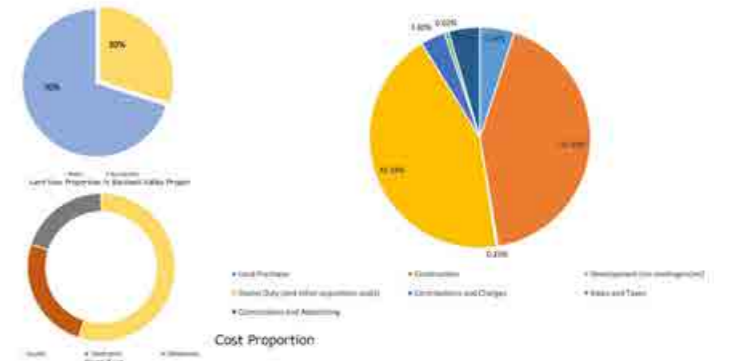
1. Design buildings formed by nature. The built fabric consistently follows the undulating natural topography. The undulating roofscape expresses the diversity of the uses accommodated within the buildings.
2. Biomorphic/organic principle. Some residential neighbourhoods are rigorously structures geometrically, others appear to have evolved organically. This principle meets the needs for urban sprawl on the basis of traditional neighborhood model. It is an sustainable approach of health growth for neighbourhoods.
3. Coverage goals, serving all parts of our community. The location of the station is placed in the site without adequate public transportation services. The new railway station combining existing public transportation can service most of the whole study area.
4. Each of those people is more likely to use transit if he or she lives in a denser area.



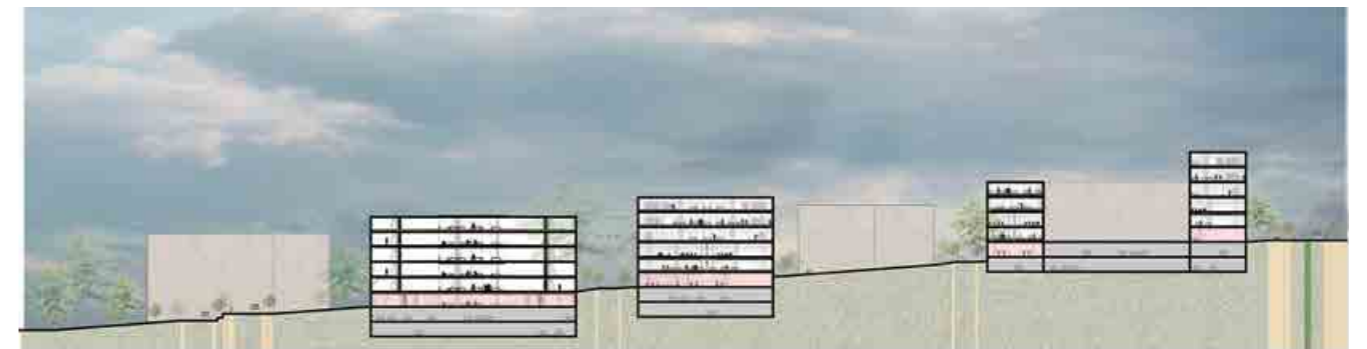
Section A'-A



Development Summary	Proposed
Total Area	80,000 sqm
Estimated Acquisition Cost	\$14,748,614
Residential Units	270 Units
Total Commercial Floor Space	3750 sqm
Project Span	2016 – 2020 4years
Stages	1 st Stage 1500 Units & ECO Park 2 nd Stage Residential & Commercial Building 3 rd Stage Potential Residential Buildings
Net Profit After Interest	23.33%
IRR After Interest	23.29%



Section B'-B



Section C'-C

perspectives



Wetland Edge Terrace



Local Centre Street View



NEW YORK

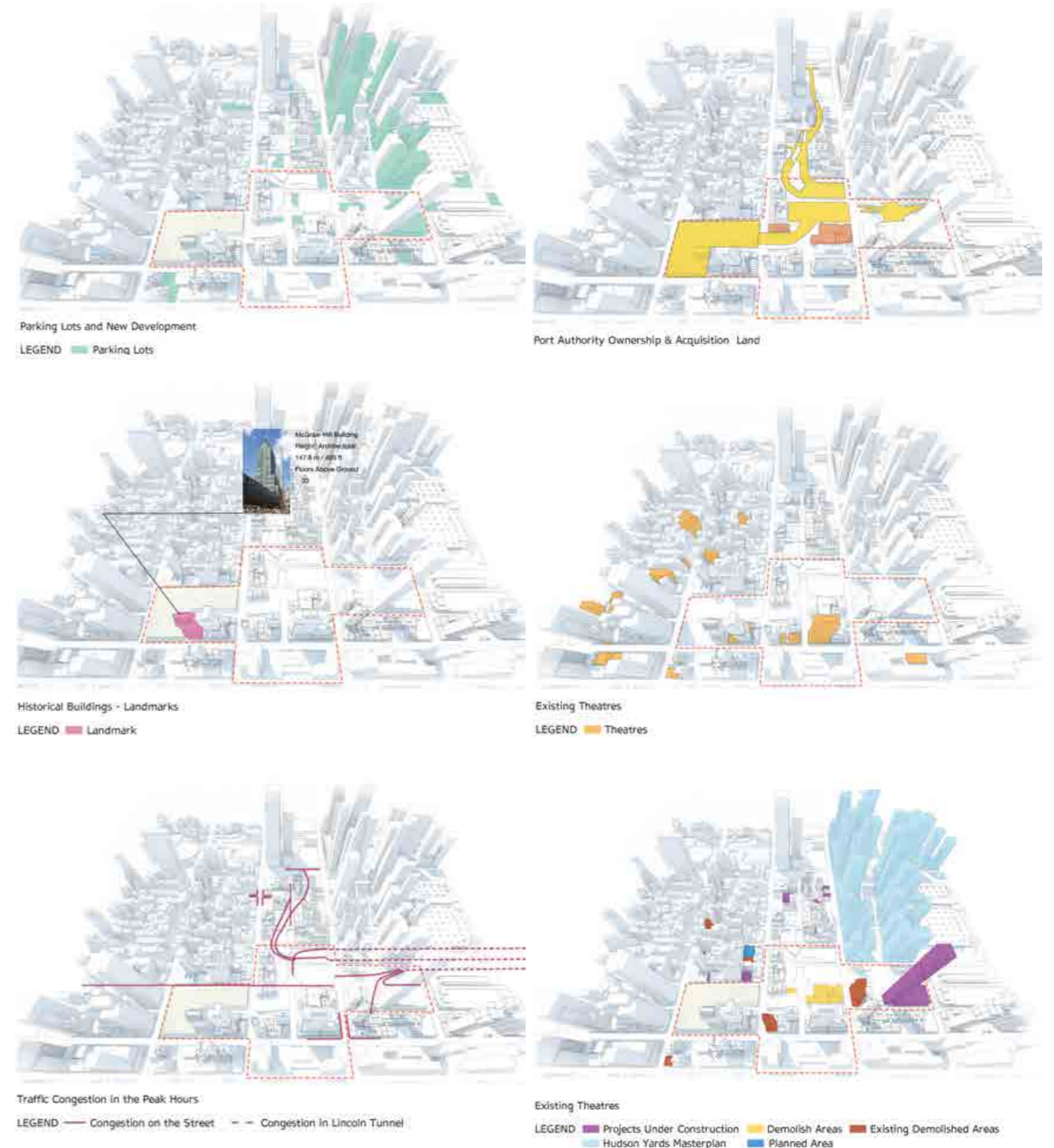
MIDTOWN WEST

PORT AUTHORITY BUS TERMINAL

Group work by Li Dan, Felipe Romero, Zhang Xinning

SITE CONTEXT

Port Authority Bus Terminal (PABT) is located in New York City Midtown West. The facility plays a major role in the transportation operation of the city providing services for daily commuting, regional interchange and travel short line services. The PABT is directly connected to the Lincoln Tunnel through higher level ramps as well as the ACE subway line through an underpass connection. On the western side of the site, the Metropolitan Transportation Authority (MTA) infrastructure includes the Metro-North that is located under Hudson Boulevard connecting Hudson Valley from the north to Grand Central. The PABT plays a vital role in NYC public transport system. New rail infrastructure to the NYC subway is proposed in proximity to the site which is known as the 7 line that extended to the south-west under 41st Street. This infrastructure provides a potential connection opportunity to the PABT. Due to an increase in passenger usage and demand of the PABT, the number of buses required to service the demand has increased. This increased demand has placed significant pressure on the capacity of the PABT including associated bus storage. A major benefit in the redevelopment of the PABT is that the site is mostly in single ownership by the Port Authority. While there is potentially a major economic benefit as the authority does not need to acquire land there is also the added benefit that the air rights over the ramps could potentially be redistributed to the bus terminal building and new development buildings to provide more redevelopment opportunities and more economic benefits.



ISSUES

EXISTING BUS ROUTES

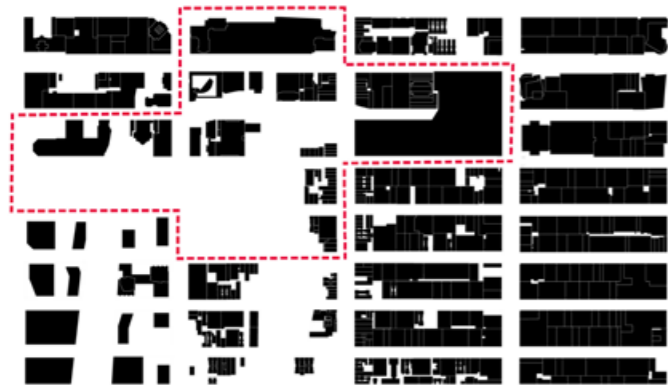
A complex ramp system dominates the site that runs from the exit of the Lincoln Tunnel, between 39th Street to 38th Street, to the Bus Terminal. The complex infrastructure arrangement connecting the Lincoln Tunnel with the Bus Terminal, and surrounding urban street pattern makes it difficult for drivers to navigate the street network.. Alternatively, the different ramp levels create a mass street life experiences for visitors. However, in peak hour periods, this mass condition becomes congested as the exclusive bus lane "XBL" is heavily used resulting in long vehicle queues and vehicles travelling at a slow pace. Another adverse impact of this is localised poor air quality from increased vehicle emission.

EXISTING CAR ROUTES

Drivers have multiple options travelling into New York City from the Lincoln Tunnel. However, the complex infrastructure can be confusing and results in potential wrong turning movements by inexperienced drivers to this part of Manhattan.. While ramps are of a considerable distance leading to main streets, the sheer volume of traffic in peak hour periods result in heavy traffic congestion, especially at the intersection of ramps with the street level. Regardless, the Lincoln Tunnel is constantly congested on the ramps as four lanes converge to provide access.

EXISTING PUBLIC TRANSPORT INFRASTRUCTURE

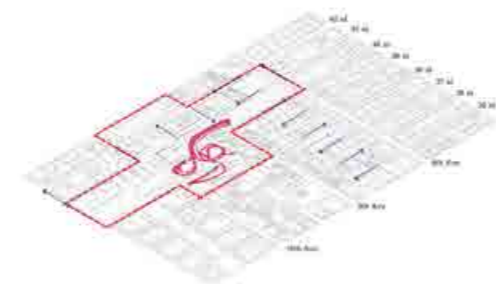
There is an underpass connection between the ACE Metro Line station and the Bus Terminal. The 123 Metro Line is located one block away on Seventh Avenue. The new MTA project, known as the '7 line' extension runs under the Bus Terminal. Moreover, the Empire Line trains that travel north from Penn Station have to pass under and through the site.



Existing Figure Ground

Illustrative Image - No scale

EXISTING CONDITIONS



Bus Routes Drives into Bus Terminal - PABT



Bus Routes Drives Out of Bus Terminal - PABT



Cars Drives into New York City from New Jersey



Cars Drives into Lincoln Tunnel from New York City to New Jersey



Existing Public Transportation
LEGEND ● Metro Stations ● 1 2 3 Line ● ACE Line ● 7 Line
● AMTRAK Line (North Line)

OBJECTIVES

PROPOSED CONDITIONS



Bus Routes Drives into New Port Authority Bus Terminal



Bus Routes Drives out of New Port Authority Bus Terminal



Cars Drives into New York City from New Jersey



Cars Drives into Lincoln Tunnel from New York City to New Jersey



Proposed Public Transport Connection
LEGEND ● Proposed Metro Stations ● 7Line ● North Line

PROPOSED BUS ROUTES

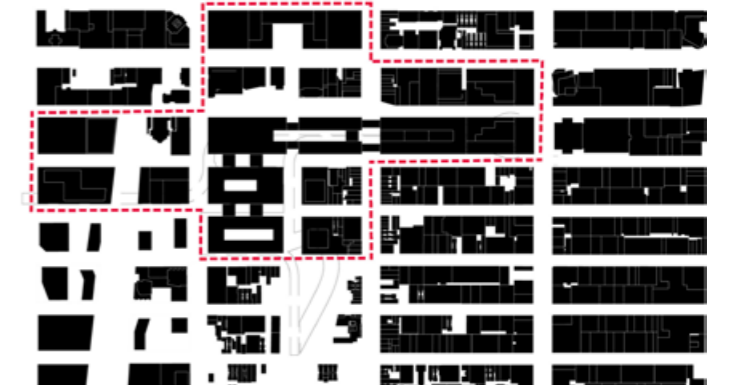
The proposal seeks to solve the congestion issues on the ramps to the Bus Terminal by abandoning all the uplift roads and creating a new underground road system for the buses to drive into the Bus Terminal. The proposal includes a single line road for buses providing a ramp building for driving up to the higher levels.

PROPOSED CAR ROUTES

Decrease the exit ramp distance of the Lincoln Tunnel and provide a shorter distance from the exit to the street level. Separate existing vehicle movements and provide traffic congestion relief at the intersection area by increasing the distance vehicles travel from the ramps to the intersection.

PROPOSED PUBLIC TRANSPORT INFRASTRUCTURE

The '7 Line' extension provides an opportunity for a new connection with the Metro Line to the Bus Terminal. The proposed new Metro Station is located within the Bus Terminal and the Manhattan Plaza. Further, pedestrian connectivity is enhanced at the new Metro Station via an underpass between these two blocks creating a commercial business street. The Empire Line, which currently runs through the site will be integrated with the new train station. This station provides services for long distance inner city rail travel as well as short regional rail services.



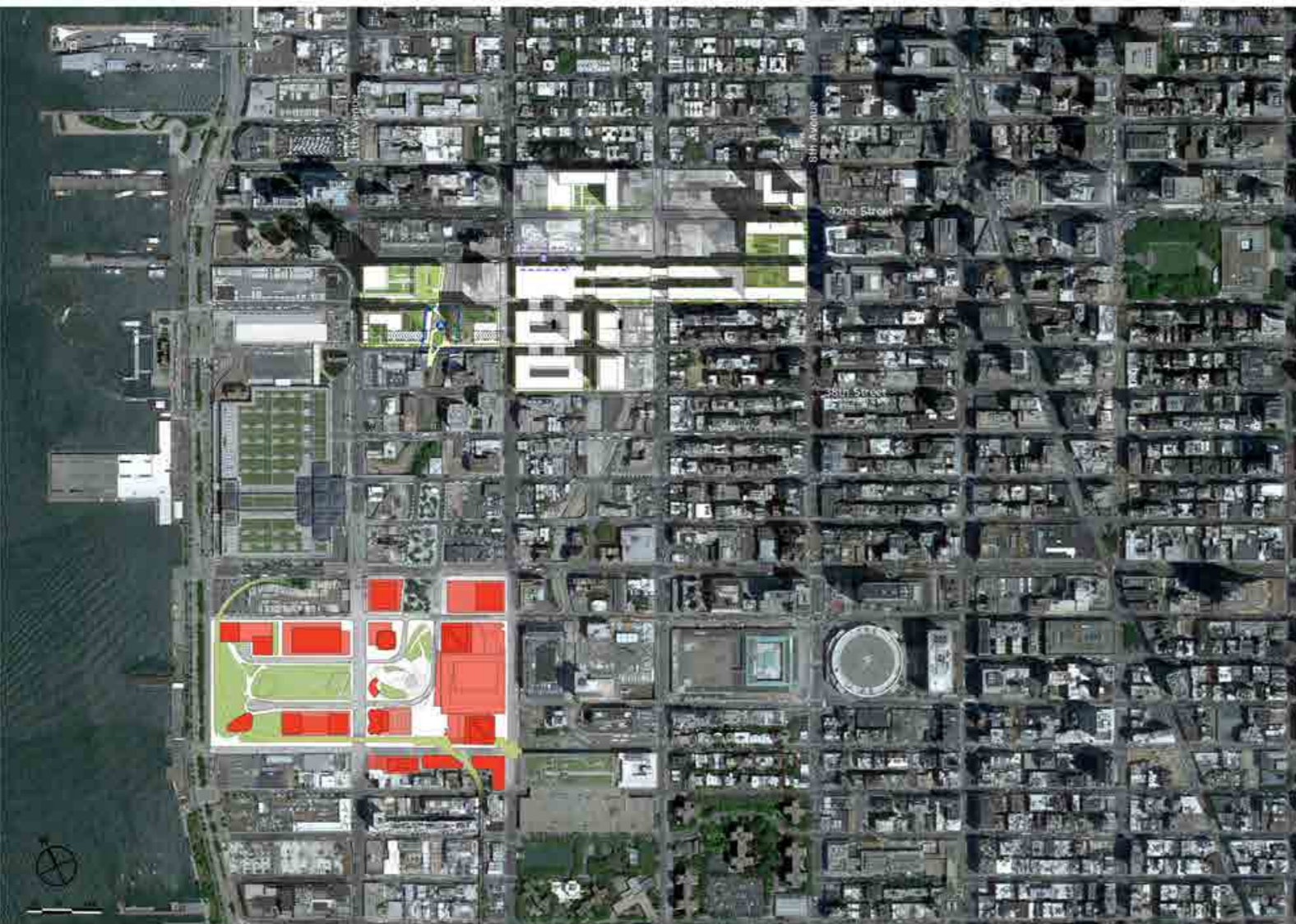
Proposed Figure Ground

Illustrative Image - No scale

VISION

To satisfy more demands, the new PABT increase almost double gates compared with the old one. The environment of surrounding neighbourhood will be improved by redeveloping this area which will become the main transportation hub in New York. The proposed port authority bus terminal could provide more recreation and green space for both residents and commuters, create an underground connection to link different modes of transportation and optimise the pedestrian experience and walkability near the bus terminal.

URBAN DESIGN FRAMEWORK PORT AUTHORITY BUS TERMINAL & MIDTOWN WEST



STRATEGIES

1. Improve local conditions and establish the grid across the Port Authority Bus Terminal surrounding areas. The creation of blocks that compose the grid structure in order to recover the urban morphology on top of the entrance and exit areas from the Lincoln Tunnel. These new blocks seek to enhance the pedestrian activity and the New York pace by the composition of street and block.

2. Promote pedestrian experience by creation of new developments that define a 'good Street' model. Remove existing ramps that connect the Lincoln Tunnel with the Port Authority Bus Terminal and create active street frontages promoting a New York experience and street life. Some of the buildings would function in a manner that complements the bus terminal uses; however, the principle is to maintain commercial activity on the street level to encourage activity.

3. Expand the Port Authority Bus Terminal in order to cover the daily demand of commuters coming from New Jersey but also the future demand. Via the creation of a flow system inside the Bus Terminal, the main idea is to maintain the constant circulation of buses inside the building. The underground level will keep about 35 unloading bus areas/spaces for the peak hours; as well as the connection with the parking building and the upper floors of the Bus Terminal. The existing Bus Terminal includes 165 gates. The proposed expansion the New Port Authority Bus Terminal will create 295 gates and unloading areas.

4. Complement the New Bus Terminal by connecting existing transport infrastructure. The creation of a proposed station on the '7 Line' extension allows for a new underground connection from the new Bus Terminal through to Manhattan Plaza at 42nd Street. A new proposed platform for the AMTRAK line or North Line will ensure that the regional services will be retained, connecting to Canada and the northern areas of the United States. The main principle is to establish a pedestrian activity at the underground level with commercial areas and pedestrian tunnels that will complement the transport infrastructure.

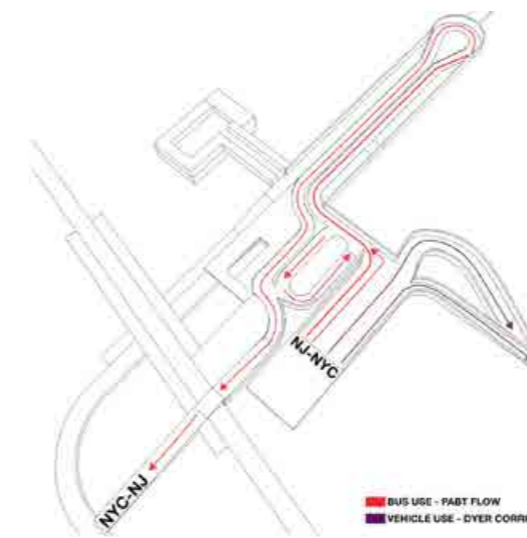
5. Decrease bus circulation area at street level to address traffic congestion. The proposed ramp design into the Lincoln Tunnel allows for vehicle movements to be separated between buses and car assisting in ameliorating traffic congestion. The exit from the Lincoln Tunnel for buses will connect to the new Bus Terminal directly at the underground reducing the circulation area at the street level.

6. Promote potential redevelopment areas of the site as well as 'air rights' development especially on 8th Avenue on top of the new Bus Terminal. The new Bus Terminal will be complemented by the creation of mixed-use high rise towers on the 8th Avenue contributing to the iconic New York skyline and in context with the scale of the New York Times Building. The proposal also includes redevelopment of existing parking lots currently used by the Part Authority that would consist of affordable housing and commercial uses. This redevelopment would include the construction of a parking building that can accommodate all buses in one central location.

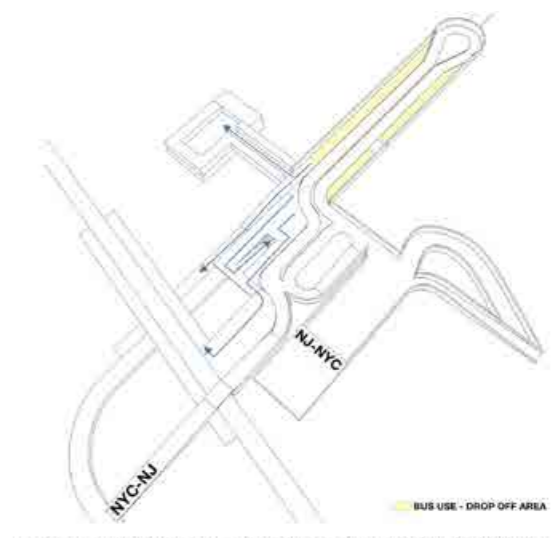
7. Furthermore, on the west side of the proposal, new possible 'air rights' development would complement the North Line metro station. The proposal would include two towers of approximately 300 meters in height, which is a similar height to the Silverstein Tower currently on the site.

8. Recover the character of the theatre district by a new development on top of the proposed '7 line' station. This new development seeks to re-establish a new theatre that will complement the district; as well, some commercial areas with affordable housing in the Manhattan Plaza area.

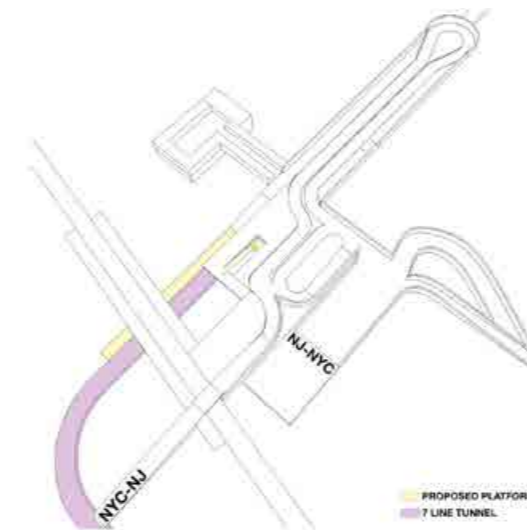
UNDERGROUND DIAGRAMS - HUB TRANSPORTATION



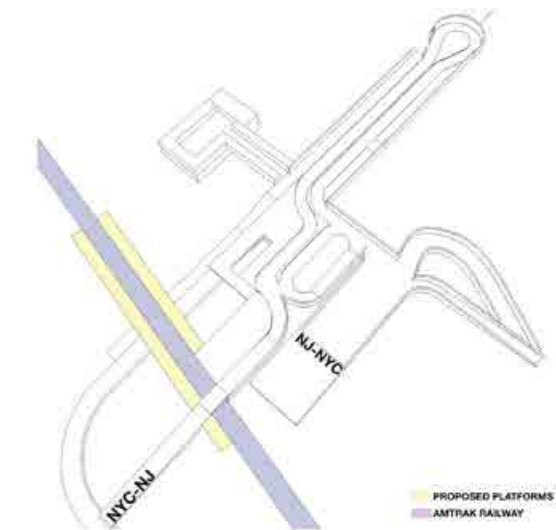
Underground Diagram - Transportation Flow Use



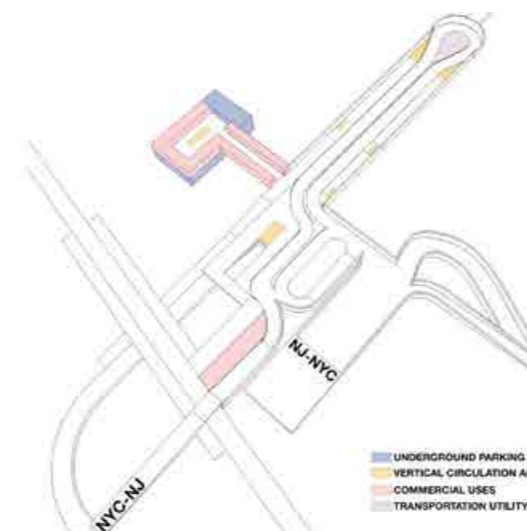
Underground Diagram - Pedestrian Flow and Drop off areas



Underground Diagram - 7 Metro Line Connection

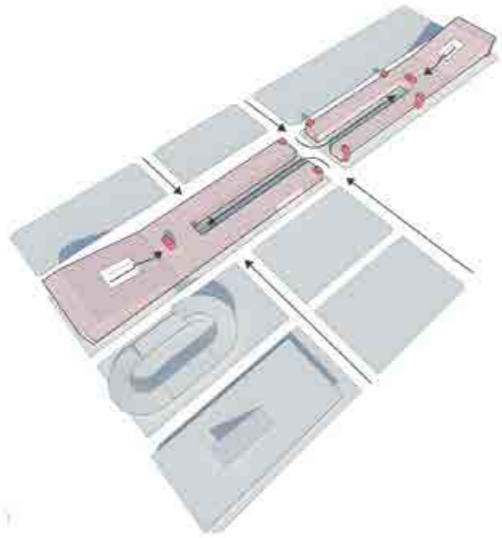


Underground Diagram - Regional Connection (North Line)

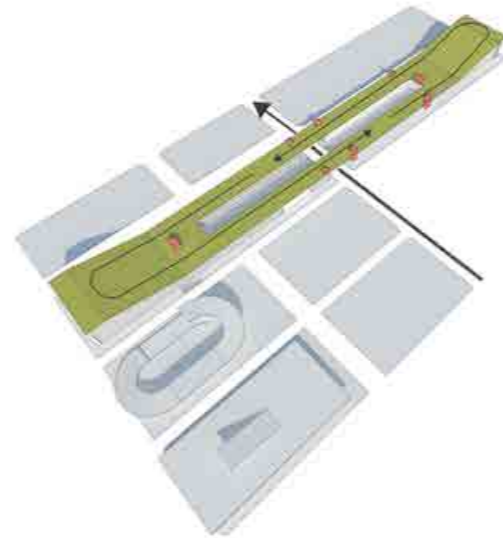


Underground Diagram - Uses

ARCHITECTURAL DIAGRAMS



1. Ground level Commercial Use



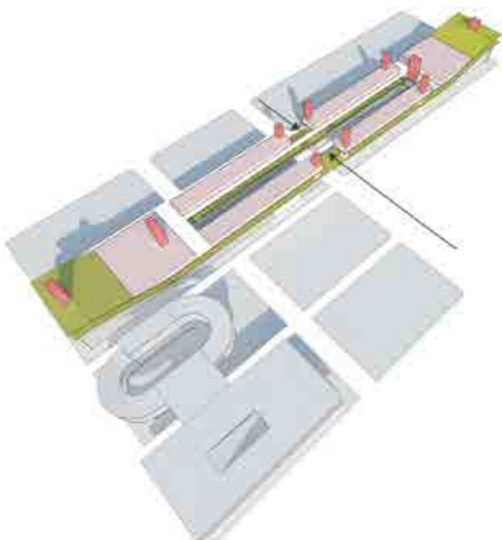
2. 2nd Floor - Pedestrian circulation



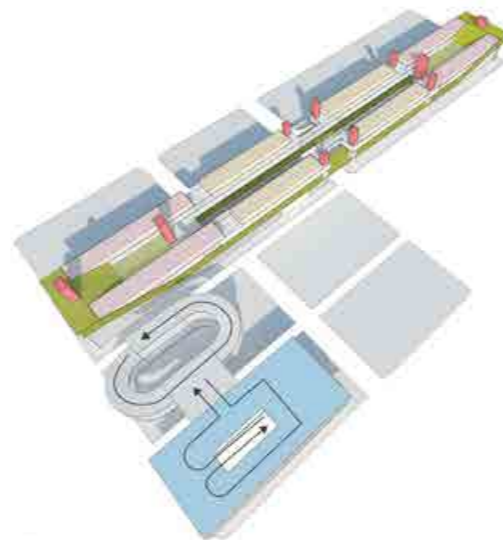
5. 5th Floor Bus Terminal use Type A



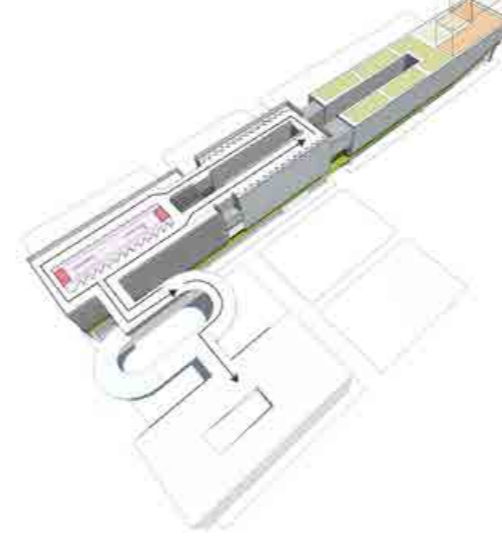
6. 6th Floor Bus Terminal use Type B



3. 3rd Floor - Commercial use



4. 4th Floor - Commercial and Admin Use

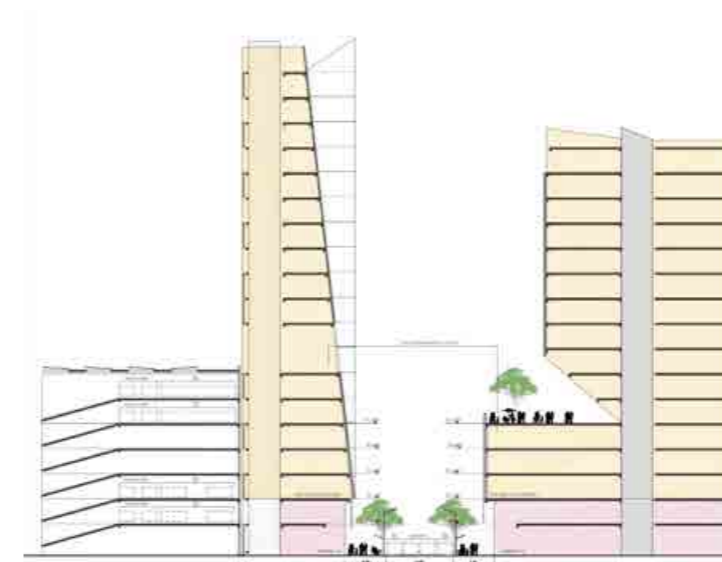
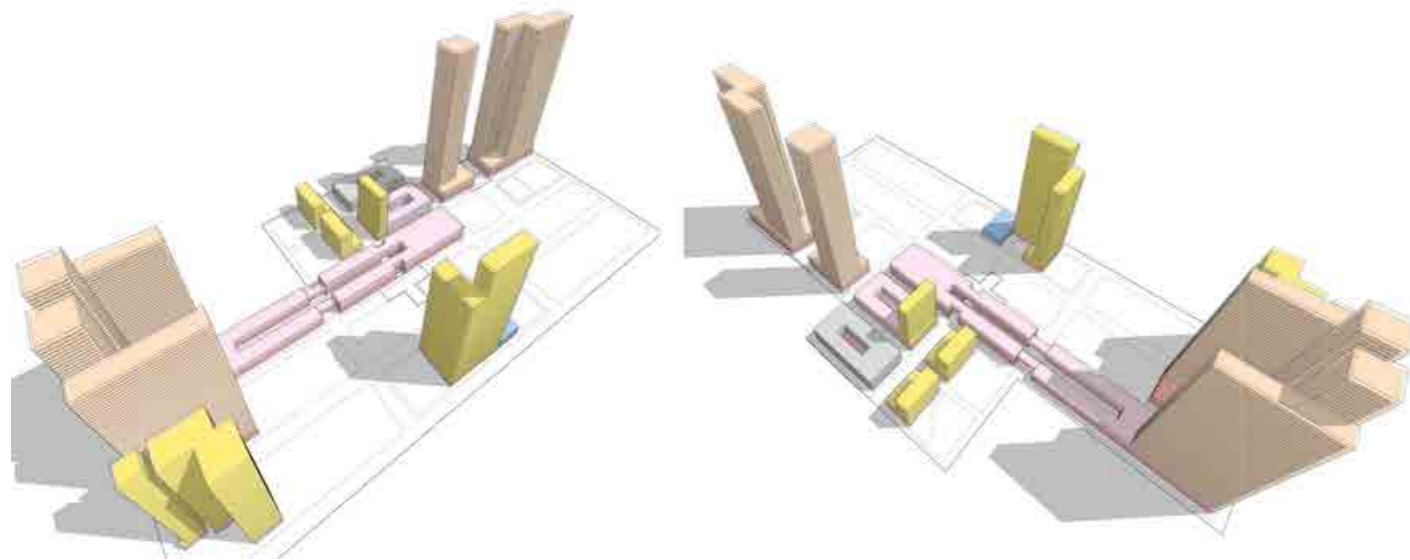


7. 7th-8th Floor Bus Terminal use Type C



8. Ventilation Diagram of the Bus Terminal

MASSING MODEL BY USE

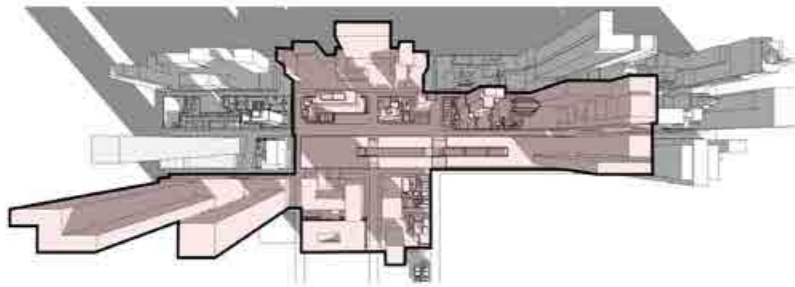


Metro Section A-A'

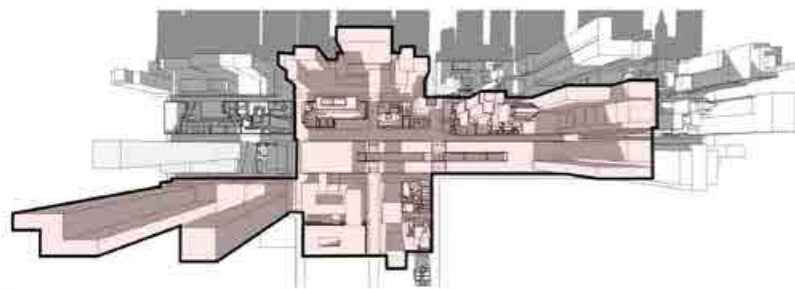


Metro Section B-B'

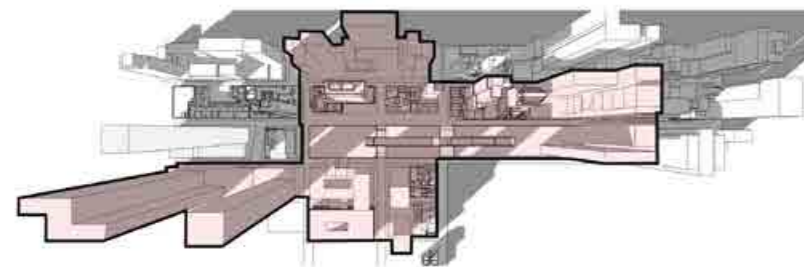
Shadow Diagrams - Port Authority Bus Terminal & Midtown West



9 am



12 pm



3 pm

PROPOSED BUS TERMINAL - TABLE OF ASSUMPTIONS

Level	Type of Area	Number
Underground Level	Unloading Areas Buses	35
Fifth Floor	Gates	55
Sixth Floor	Unloading Areas Buses	26
	Gates	55
	Unloading Areas Buses	16
Seven Floor	Parking Area	28
	Gates	55
	Unloading Areas Buses	16
Eight Floor	Parking Area	28
	Gates	25
	Unloading Areas Buses	10

Proposed Buses area(Including Parking areas, No. Gates and Unloading Areas)	349
No. Gates and Unloading Areas	293
Existing Gates in PABT	165

Port Authority Bus Terminal & Midtown West - Gross Floor Area	
Usage	Gross Floor Area M2
Commercial Use	178,119
Cultural/Public	10,857
Mixed Use	721,471
Multi Family Elev Residences	282,258
Parking/PABT	34,402
Transportation	94,762
Total Project Area (M2)	1,321,869
Demolished Area (M2)	38,274