جامعة بيروت العربية
BEIRUT ARAB UNIVERSITY

BEIRUT ARAB UNIVERSITY_ TRIPOLI CAMPUS
FACULTY OF ARCHITECTURE. DESIGN & BUILT ENVIRONMENT

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BEIRUT'S URBAN PORT

BEIRUT'S CRUISE TERMINAL & CULTURAL MARKET

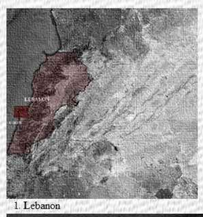
PROJECT INTRODUCTION AND ANALYSIS

INTRODUCTION

On 4 August 2020, a large amount of ammonium nitrate stored at the Port of Beirut in the capital city of Lebanon exploded, causing at least 218 deaths, 7,000 injuries, and US$15 billion in property damage, and leaving an estimated 300,000 people homeless. A cargo of 2,750 tonnes of the substance (equivalent to around 1.1 kilotons of TNT) had been stored in a warehouse without proper safety measures for the previous six years after having been confiscated by the Lebanese authorities from the abandoned ship MV Rhosus. The explosion was preceded by a fire in the same warehouse, but as of September 2021, the exact cause of the detonation is still under investigation.

The blast physically shook the whole country of Lebanon. It was felt in Turkey, Syria, Palestine, and Israel, as well as parts of Europe, and was heard in Cyprus, more than 240 km (150 mi) away. It was detected by the United States Geological Survey as a seismic event of magnitude and is considered one of the most powerful accidental artificial non-nuclear explosions in history.

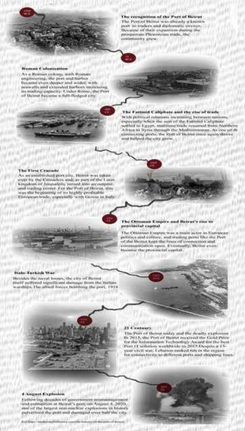
SITE LOCATION



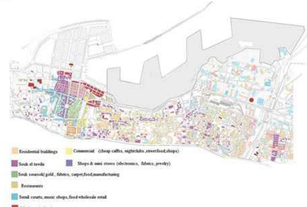
1. Lebanon

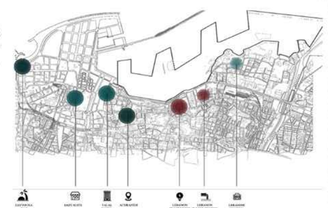
2. Beirut

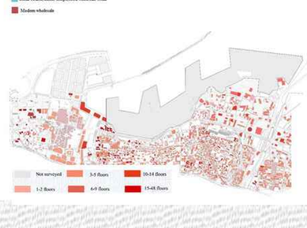
3. Site

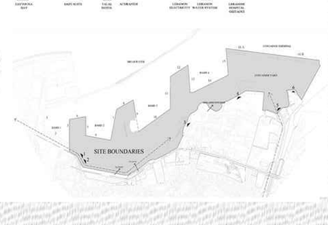


SITE CONTEXT (NEIGHBOORHOOD)









MACRO SITE PERCEPTION

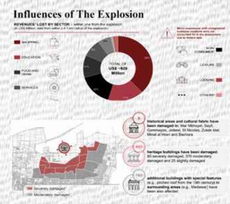
Port Problems

- -Due to the economical crises the labour, land, materials costs are on rise.
- -Political uncertainty
- -Lack of human resources due to the forst immigration of field.
- -Rule breaking due to the lack of surveillance.

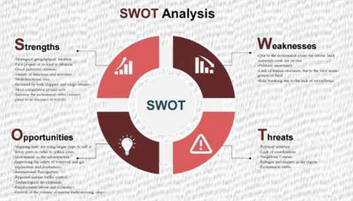
Site Problems

- Very high level of noise (highway and port)
- Vehicles and Landfill of karantina pollution
- Traffic on the Charle el helou highway
- Randomized urban planning

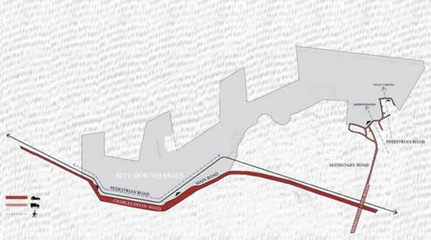
Influences of The Explosion

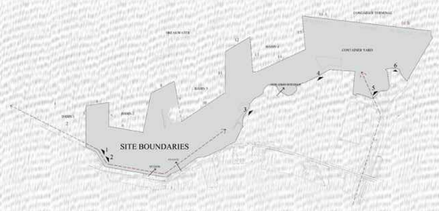


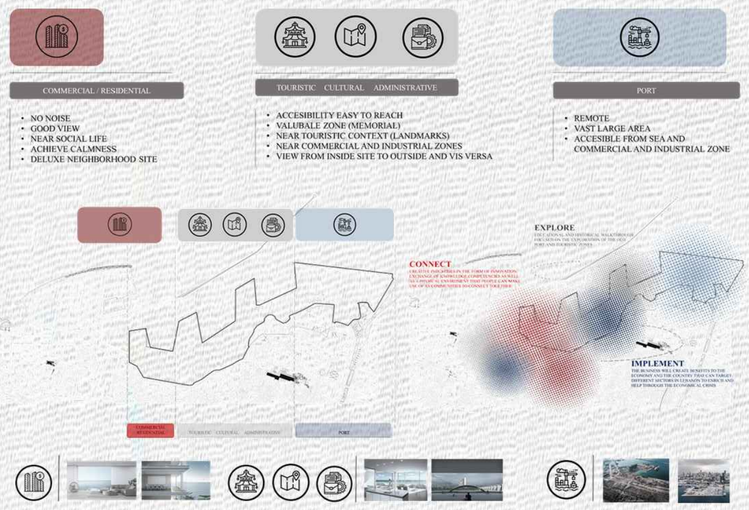
SWOT Analysis



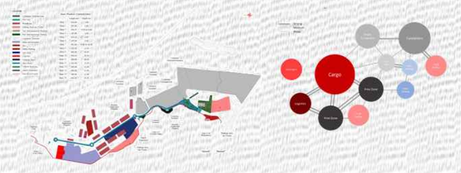
SITE CIRCULATION







ZONING ANALYSIS



SHIPS TYPES & DIMENSIONS

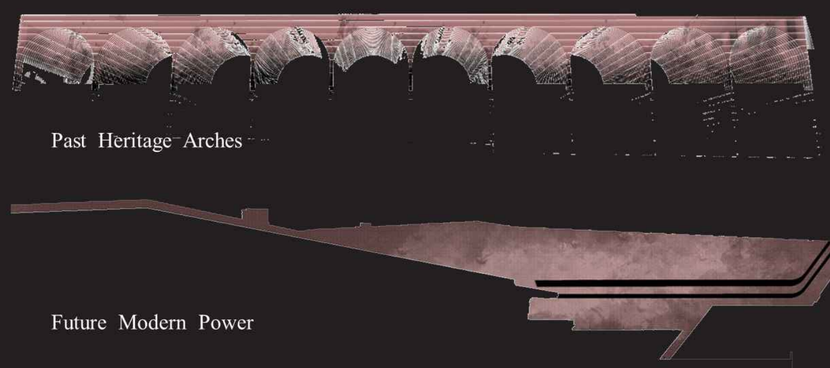
DESIGN CONCEPT

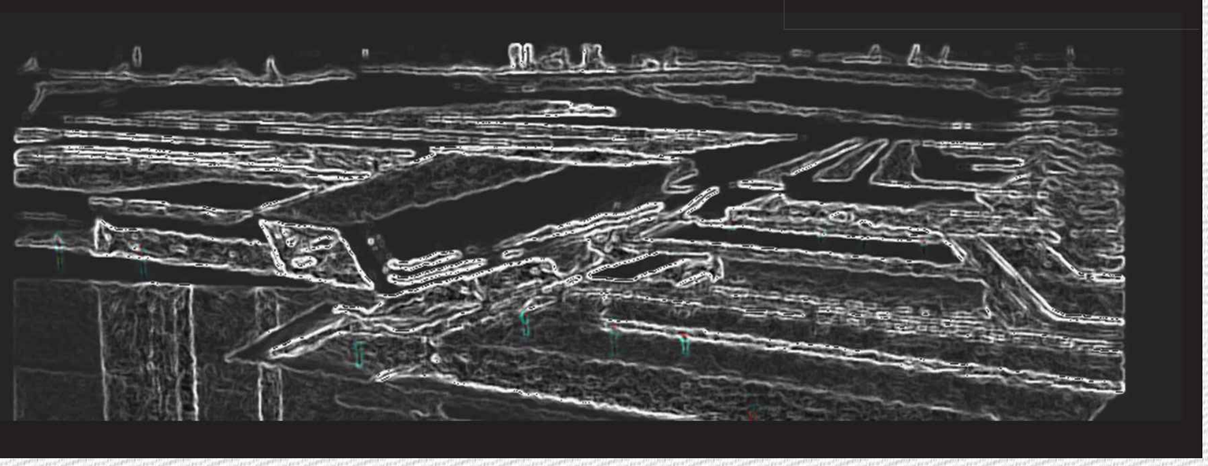
CONCEPT DIAGRAM

WRITTEN DIAGRAM

Terminal is a place where exchange happens and with this exchange new cultures come and go with addition to exploring our own identity and such exchange defines the term of lifetime that reflects the main point of past, present and future.

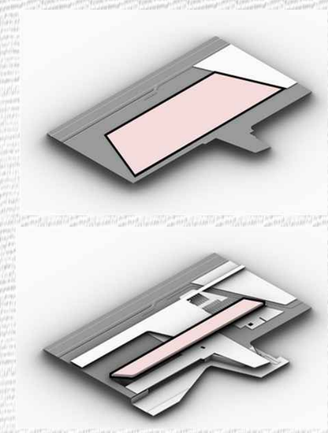
Past and future are illusions that traces the person under passed experiences that brings depression and anxiety, whereas The Present is the only moment that matters that brings Peace into our life.

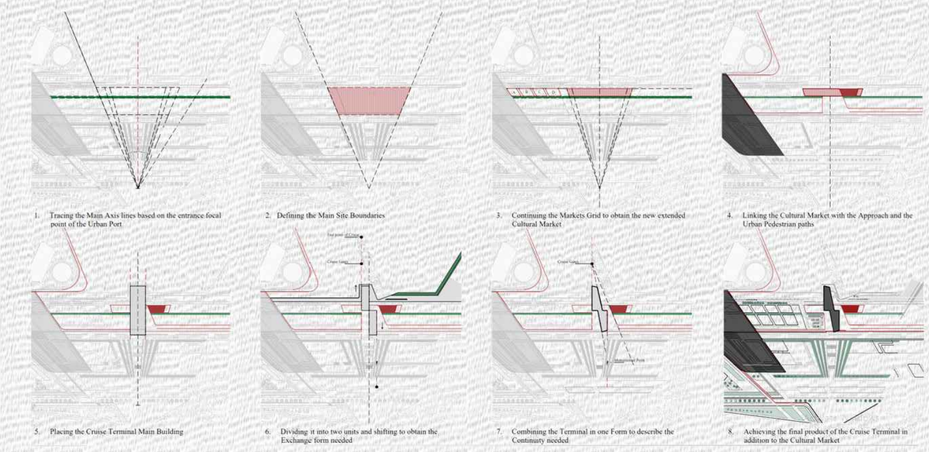


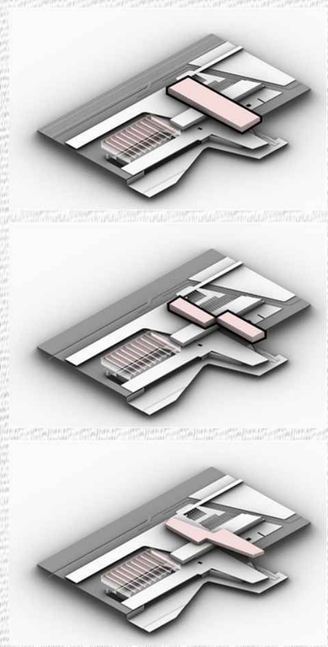


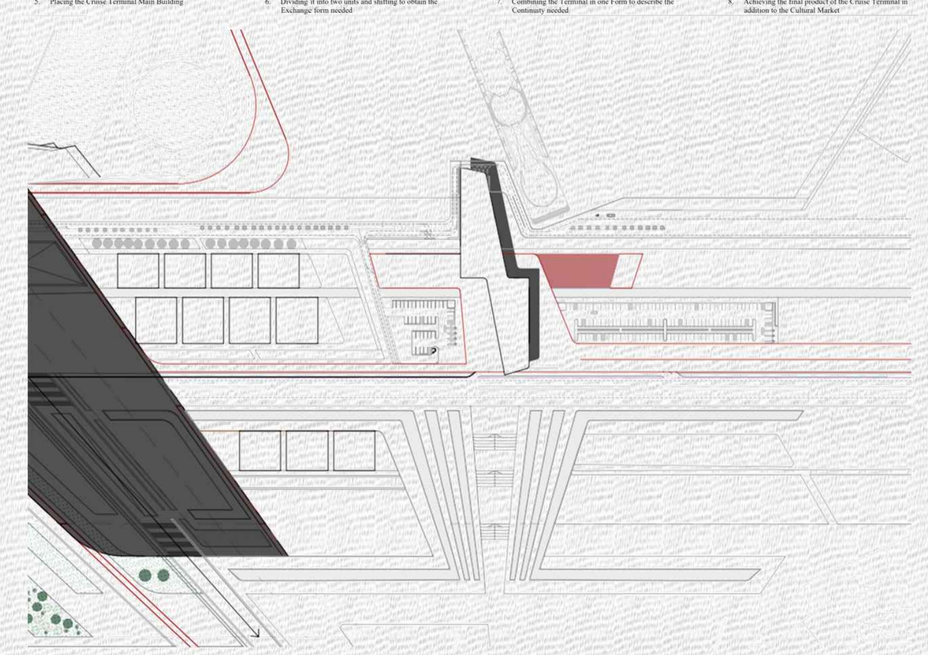
IDEA DEVELOPMENT

DESIGN PROCESS



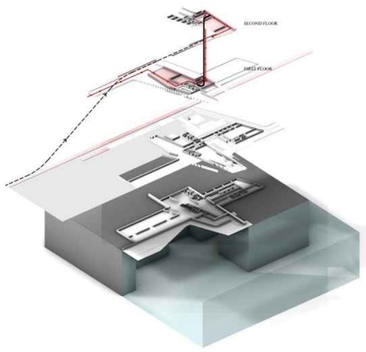






PROJECT DIAGRAMS

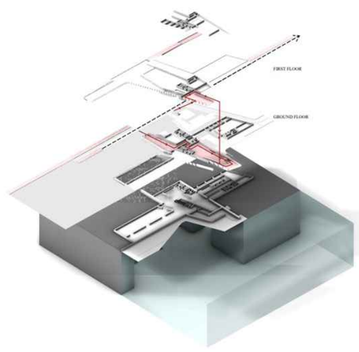
EXPLODING DIAGRAM



DEPARTURE CIRCULATION
From First Floor to Second Floor

vehicular ramp is dropped on the **first level** in which allows departure passengers to reach the waiting area and check-in area and then takes either **lifts or electrical escalators to reach the Second Floor** to have a direct contact with the duty free that is next **to the cruise gates**.

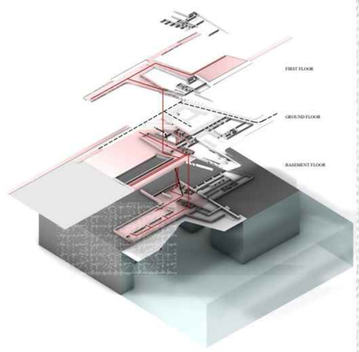
Vehicular Circulation
Pedestrian Circulation (Lifts)
Pedestrian Circulation (Escalator)



ARRIVAL CIRCULATION
From First Floor to Ground Floor

from the main cruise deck, gates open to **the arrival hall in First Floor** that is **Connected to the Ground Floor by vertical Ramps** that introduce you to the main Baggage claim hall which is before the area where families and friends are waiting for.

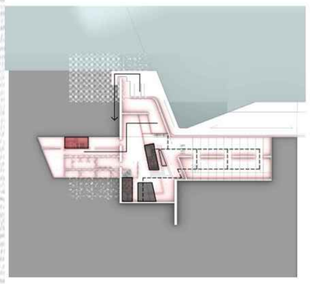
Vehicular Circulation
Pedestrian Circulation (Lifts)



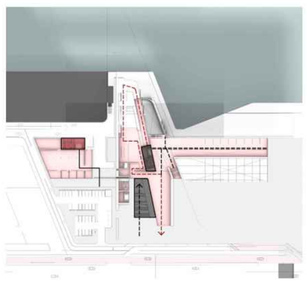
PUBLIC MARKET CIRCULATION
All Floors

the main market entrance comes from the **Ground Floor with an External stair in addition to the V.C (lifts)**. but there.s other cores and connection from the upper level that allows all the users to benefit taking into consideration the security conditions needed.

Vehicular Circulation
Pedestrian Circulation (Lifts)
Pedestrian Circulation (Ramp)

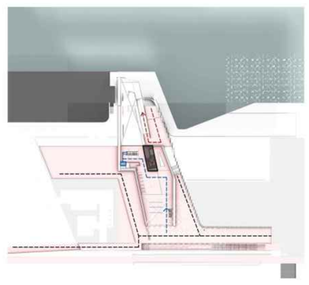


BASEMENT FLOOR CIRCULATION
This floor has both the public and staff circulation, where the PUBLIC is the MARKET itself which can be reached by multiple ways either internally by different cores or externally by outer walls and ramps. Whereas, the Staff is for the movement of distributing products for the market and the collection of the passengers baggage claims using vehicular ramps



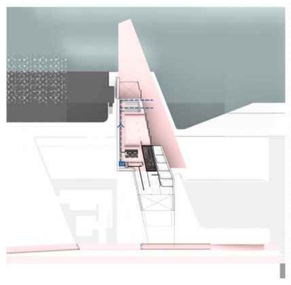
GROUND FLOOR CIRCULATION
This floor is the main Exit for the ARRIVAL passengers in addition to the Main entrance for MARKET

Arrival Circulation
Public Circulation
Staff Circulation



FIRST FLOOR CIRCULATION
This floor is the main Entrance for the DEPARTURE passengers that shall use either the main Departure core or escalators to reach the above level where gates are founded. In addition to the main Entrance of Arrival passengers.

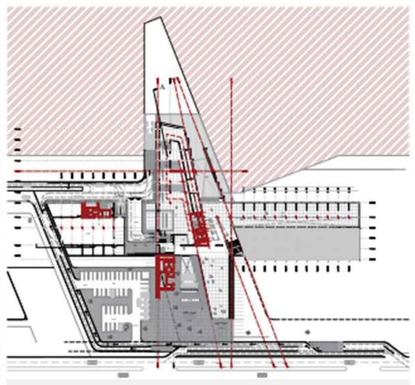
Departure Circulation
Arrival Circulation

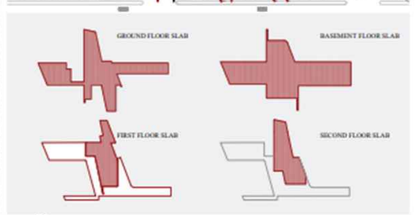


SECOND FLOOR CIRCULATION
This floor is the point where Departure Passengers reach the cruise gates. In addition to the administration area that is founded in the same level

Departure Circulation
Staff Circulation

STRUCTURE DIAGRAM





STRUCTURE USED

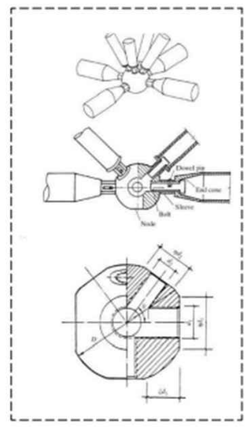
The main structure of the project is a mix of reinforced concrete, steel frame structures, and composite beams and decks. The space frame is composed of a special steel tube-and-nodes system

REINFORCED CONCRETE STRUCTURE

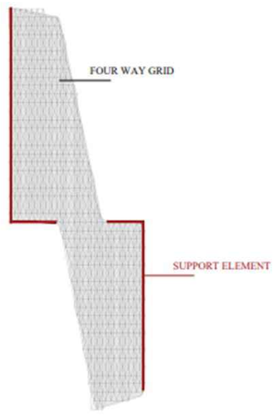
The main grid composites of Perpendicular axis of span 6-8 meters in addition to the slab and beams needed

SPACE FRAME STRUCTURE

It's a rigid, lightweight, truss-like structure constructed from interlocking struts in a geometric pattern that is used in the Terminal Roof

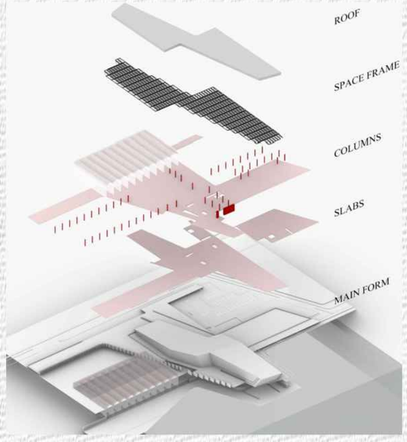


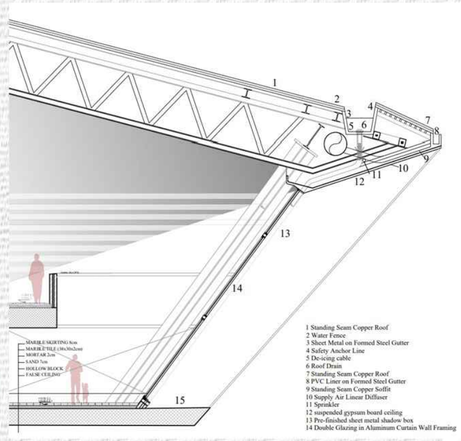
DIMENSIONS OF SPHERICAL NODE

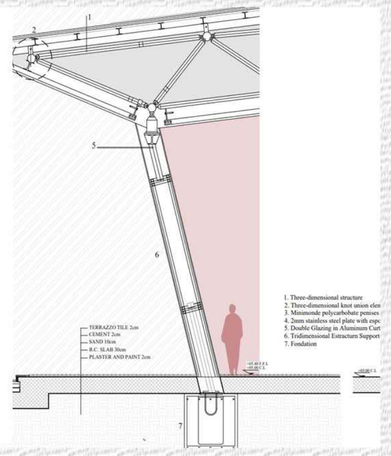


SPACE FRAME LAYOUT
SCALE 1/200

LONGITUDINAL SECTION

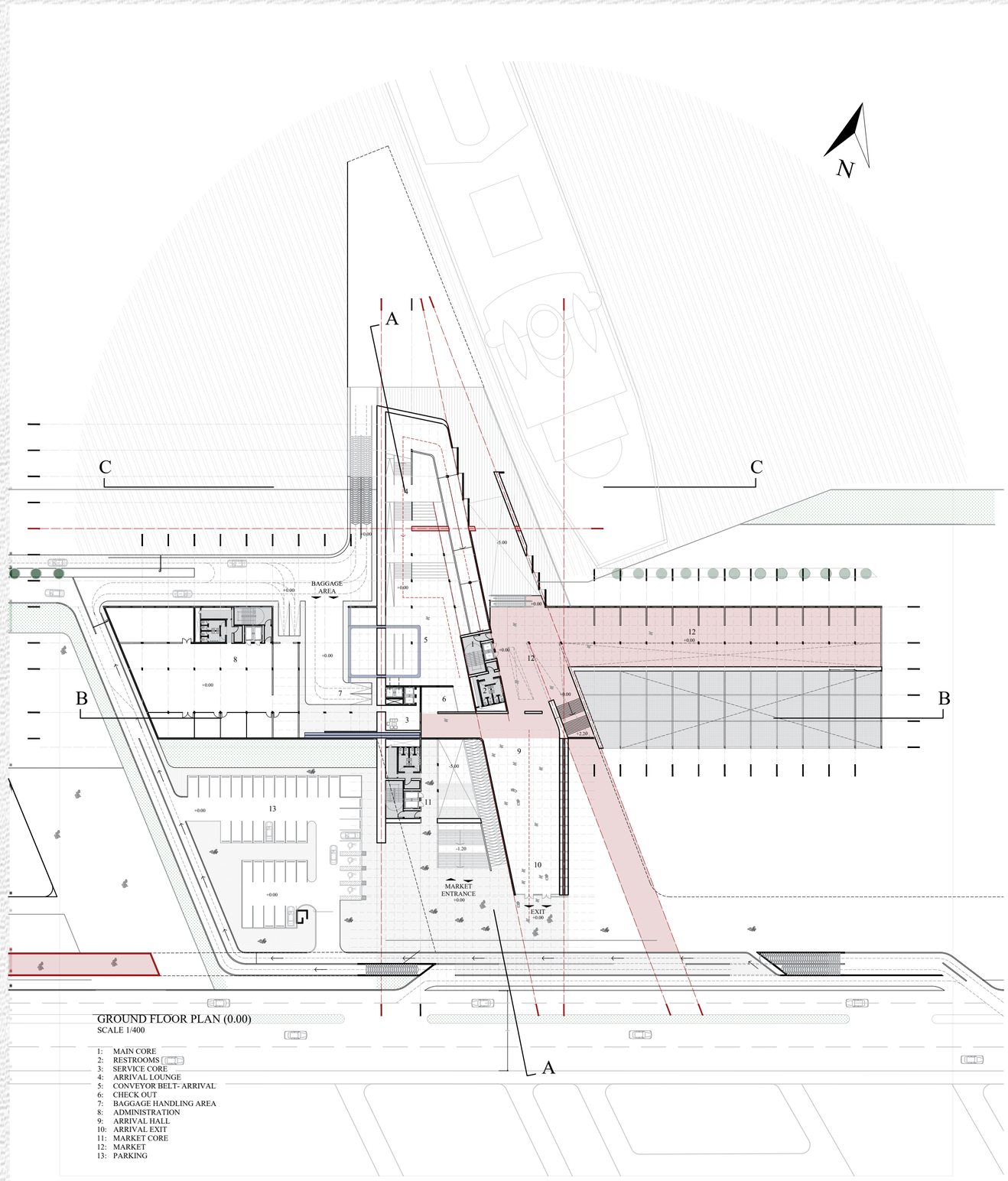






PLANS

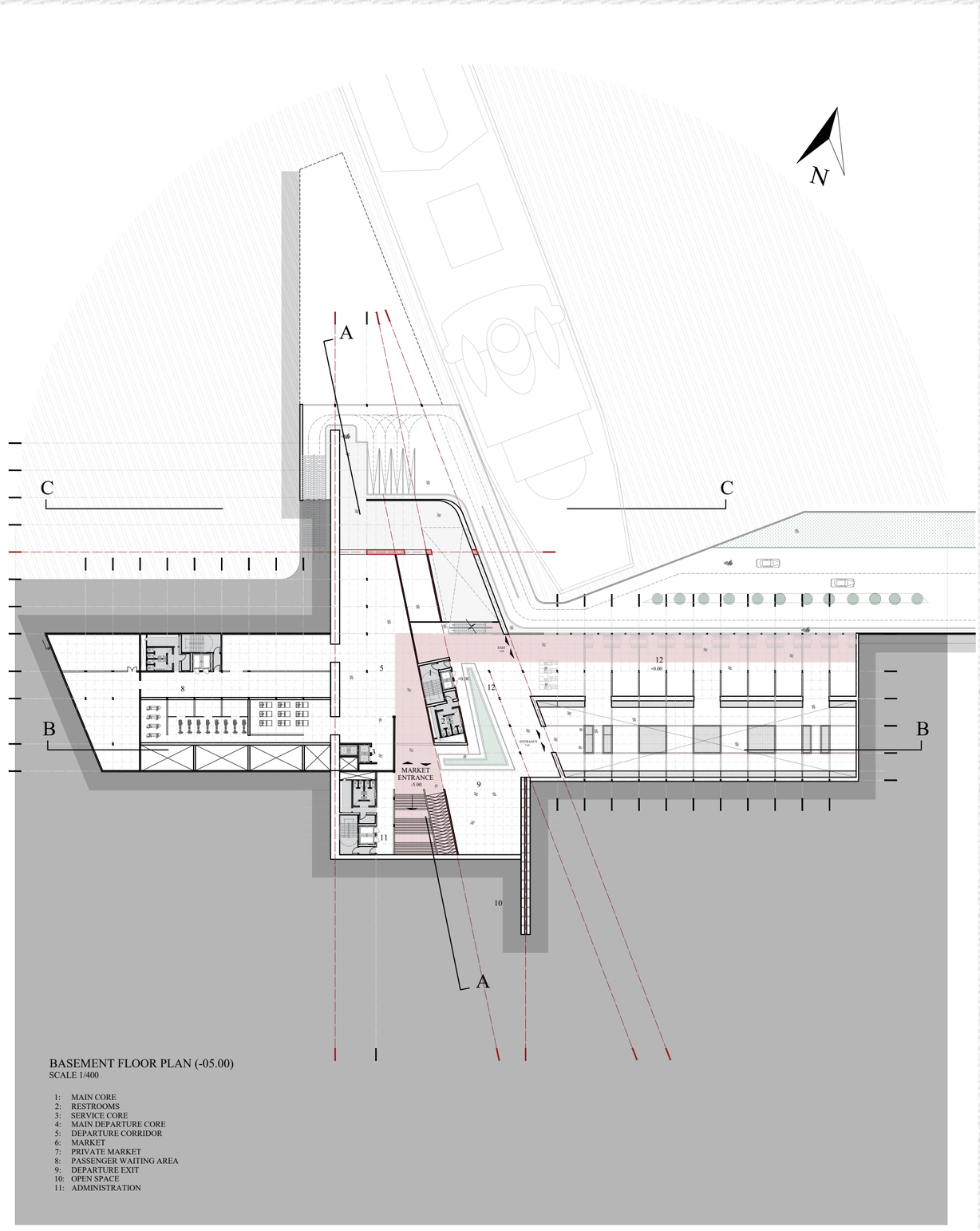
GROUND FLOOR PLAN



GROUND FLOOR PLAN (0.00)
SCALE 1/400

1: MAIN CORE
2: RESTROOMS
3: SERVICE CORE
4: ARRIVAL LOUNGE
5: CONVEYOR BELT- ARRIVAL
6: CHECK OUT
7: BAGGAGE HANDLING AREA
8: ADMINISTRATION
9: ARRIVAL HALL
10: ARRIVAL EXIT
11: MARKET CORE
12: MARKET
13: PARKING

BASEMENT FLOOR PLAN

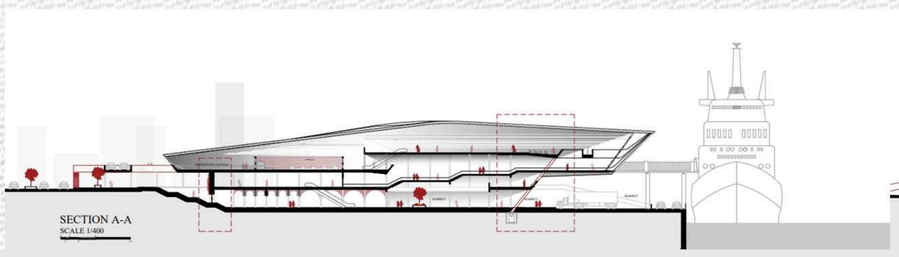


BASEMENT FLOOR PLAN (-05.00)
SCALE 1/400

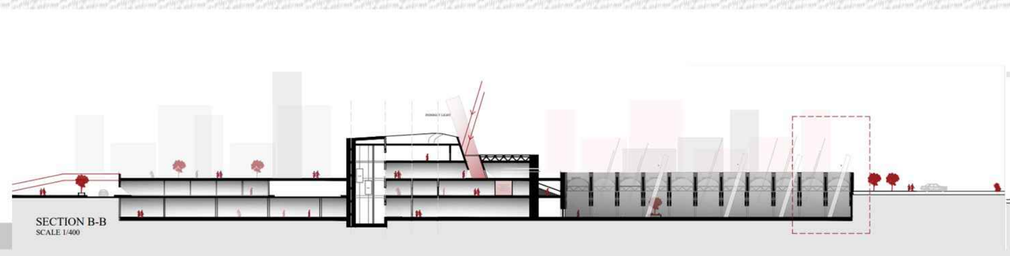
1: MAIN CORE
2: RESTROOMS
3: SERVICE CORE
4: MAIN DEPARTURE CORE
5: DEPARTURE CORRIDOR
6: MARKET
7: PRIVATE MARKET
8: PASSENGER WAITING AREA
9: DEPARTURE EXIT
10: OPEN SPACE
11: ADMINISTRATION

SECTIONS AND ELEVATIONS

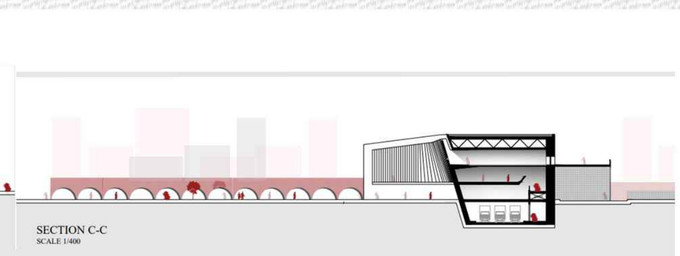
SECTIONS



SECTION A-A
SCALE 1/400



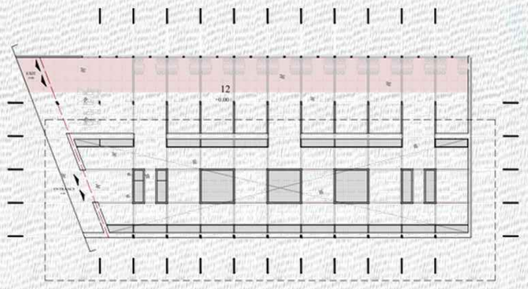
SECTION B-B
SCALE 1/400



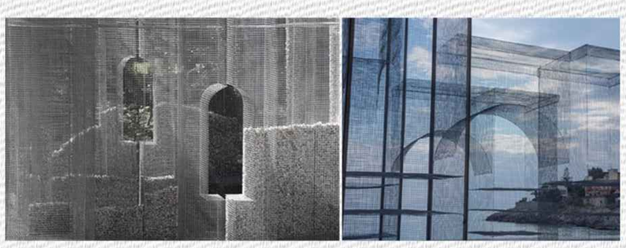
SECTION C-C
SCALE 1/400

PROJECT DIAGRAMS

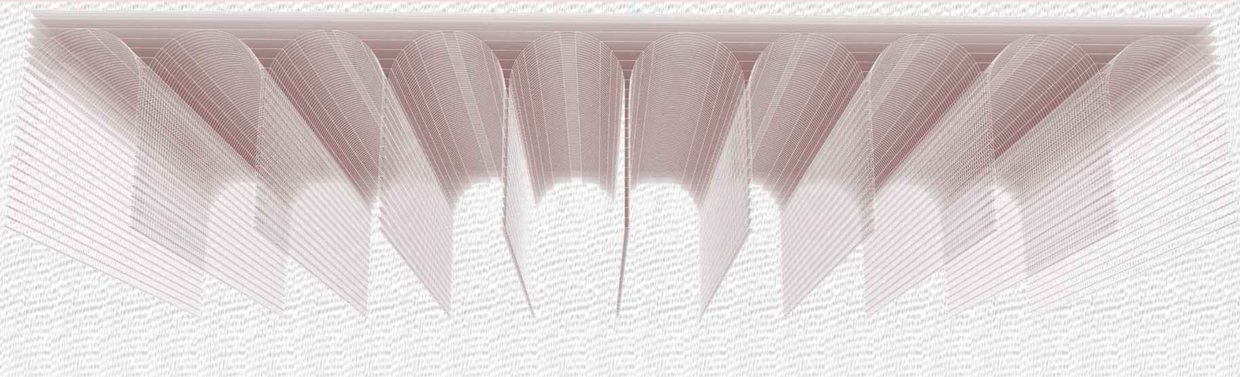
MARKET CONCEPT



MATERIAL CONSTRUCTION TECHNIQUE



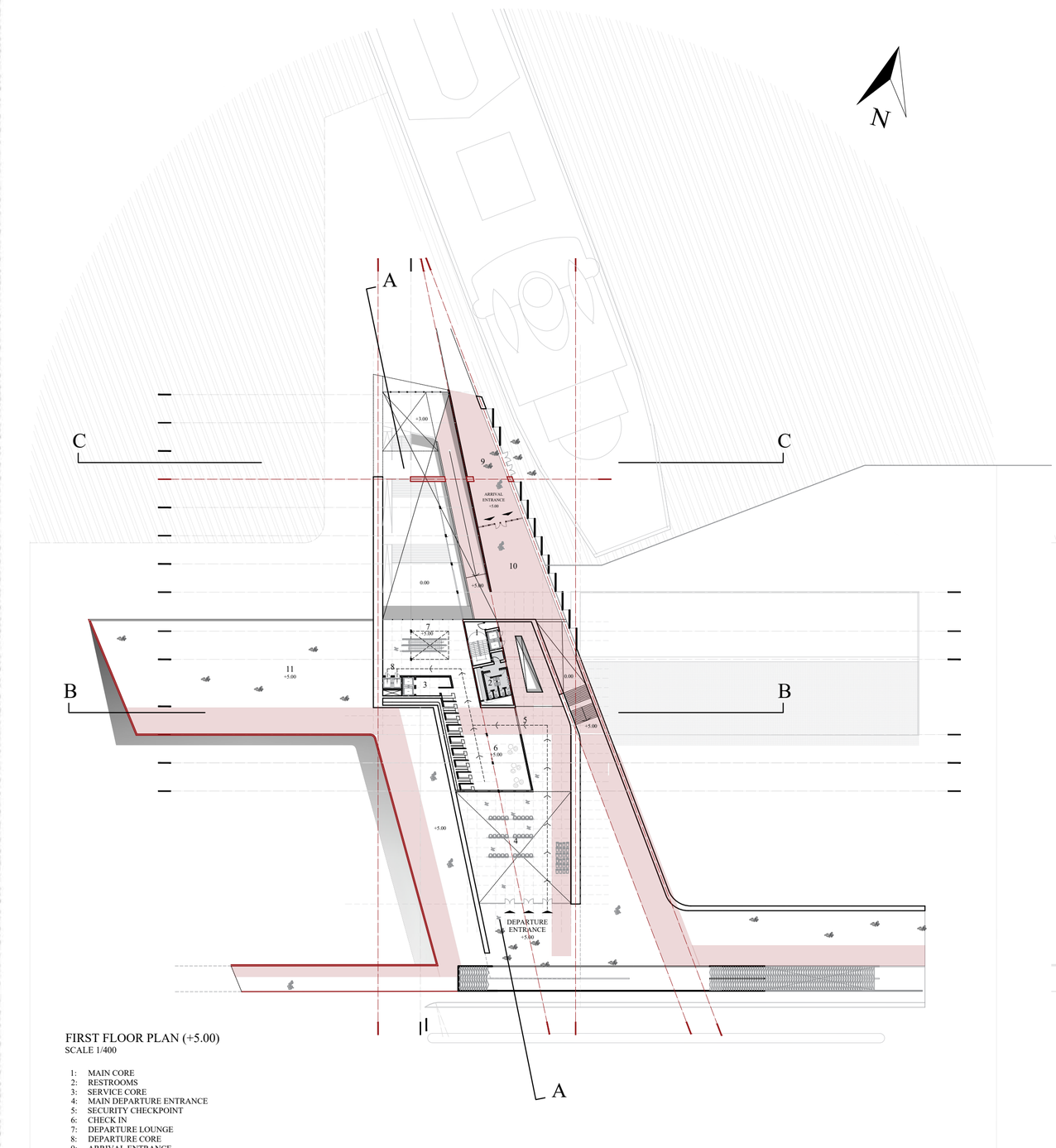
STRUCTURE DIAGRAM



PLANS

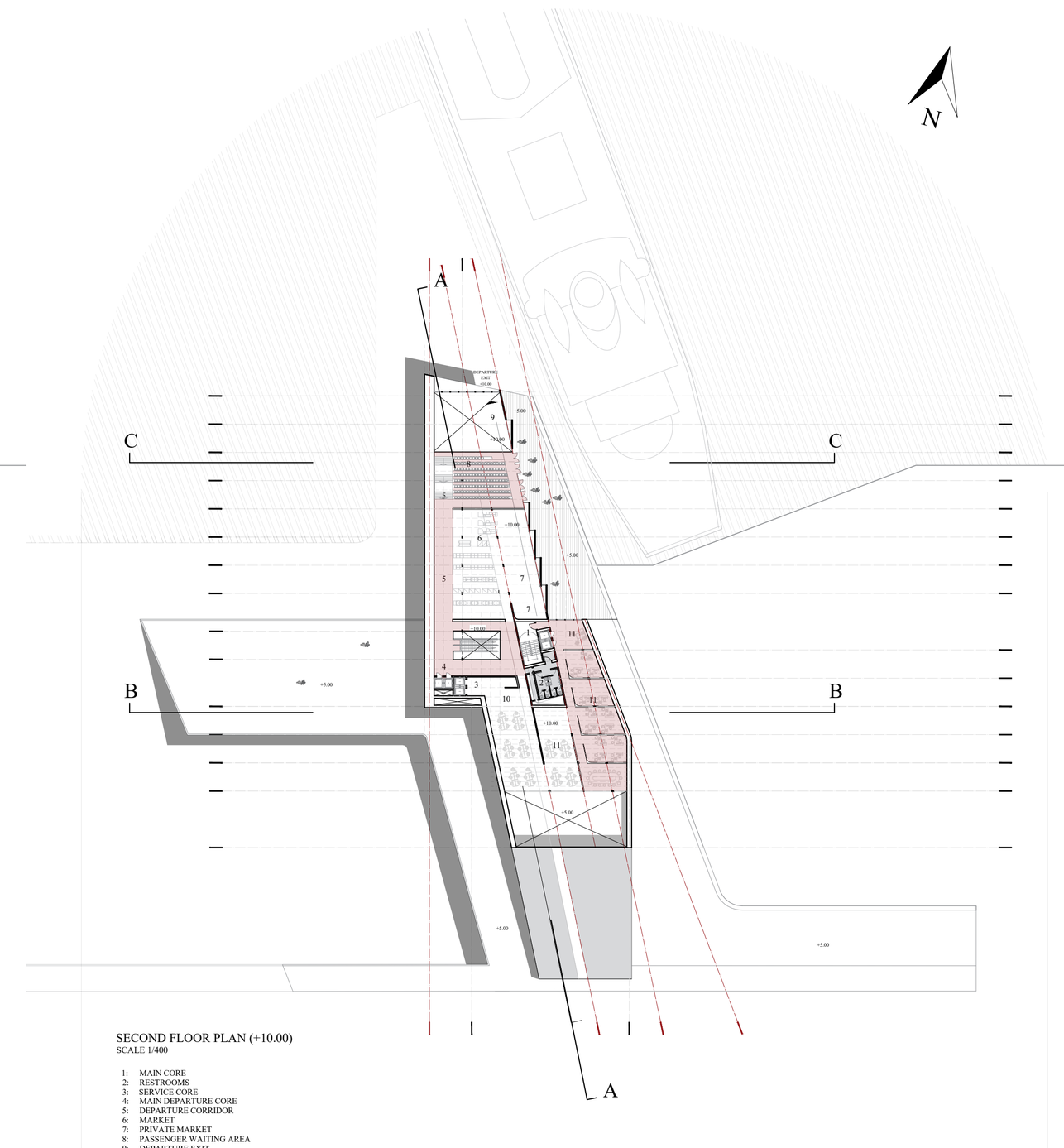
FIRST FLOOR PLAN

SECONF FLOOR PLAN



FIRST FLOOR PLAN (+5.00)
SCALE 1/400

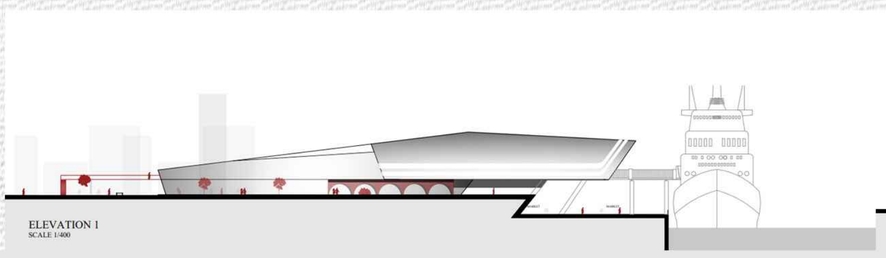
1: MAIN CORE
2: RESTROOMS
3: SERVICE CORE
4: MAIN DEPARTURE ENTRANCE
5: SECURITY CHECKPOINT
6: CHECK IN
7: DEPARTURE LOUNGE
8: DEPARTURE CORE
9: ARRIVAL ENTRANCE
10: ARRIVAL LOUNGE
11: OPEN TERRACE



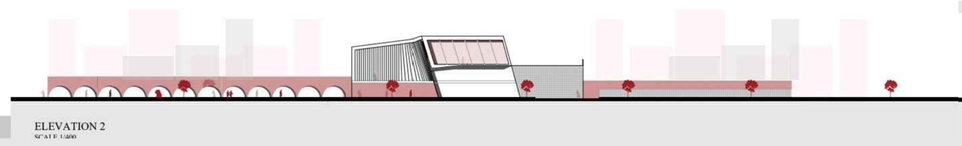
SECOND FLOOR PLAN (+10.00)
SCALE 1/400

1: MAIN CORE
2: RESTROOMS
3: SERVICE CORE
4: MAIN DEPARTURE CORE
5: DEPARTURE CORRIDOR
6: MARKET
7: PRIVATE MARKET
8: PASSENGER WAITING AREA
9: DEPARTURE EXIT
10: OPEN SPACE
11: ADMINISTRATION

SECTIONS



ELEVATION 1
SCALE 1/400

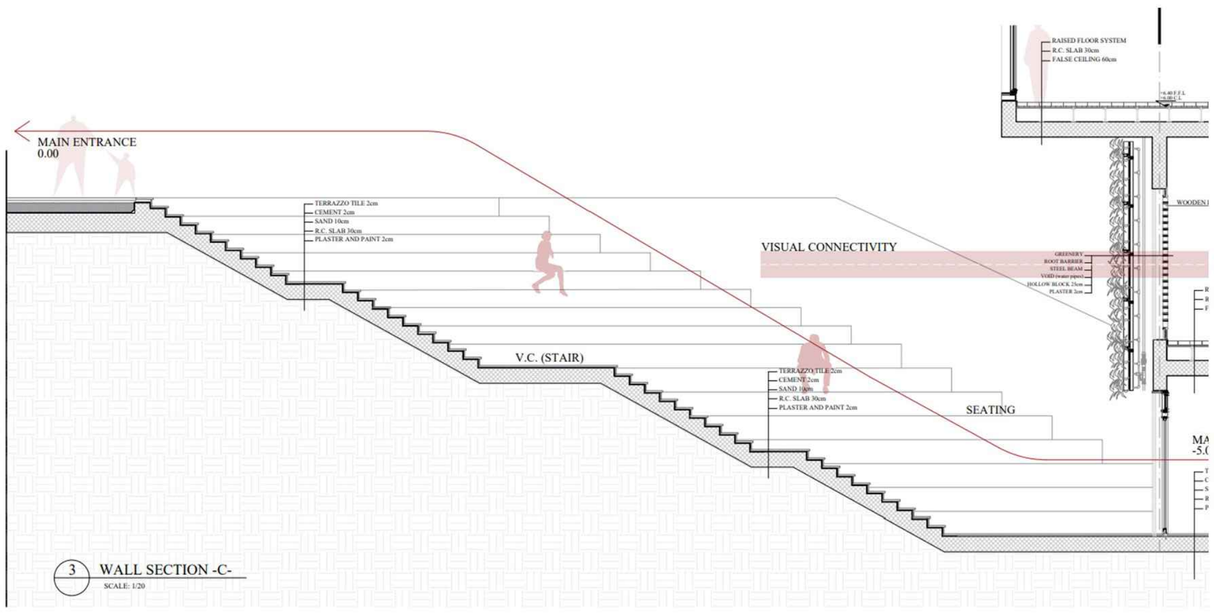


ELEVATION 2
SCALE 1/400

ELEVATION 1 (REAL MATERIAL)
SCALE 1/400

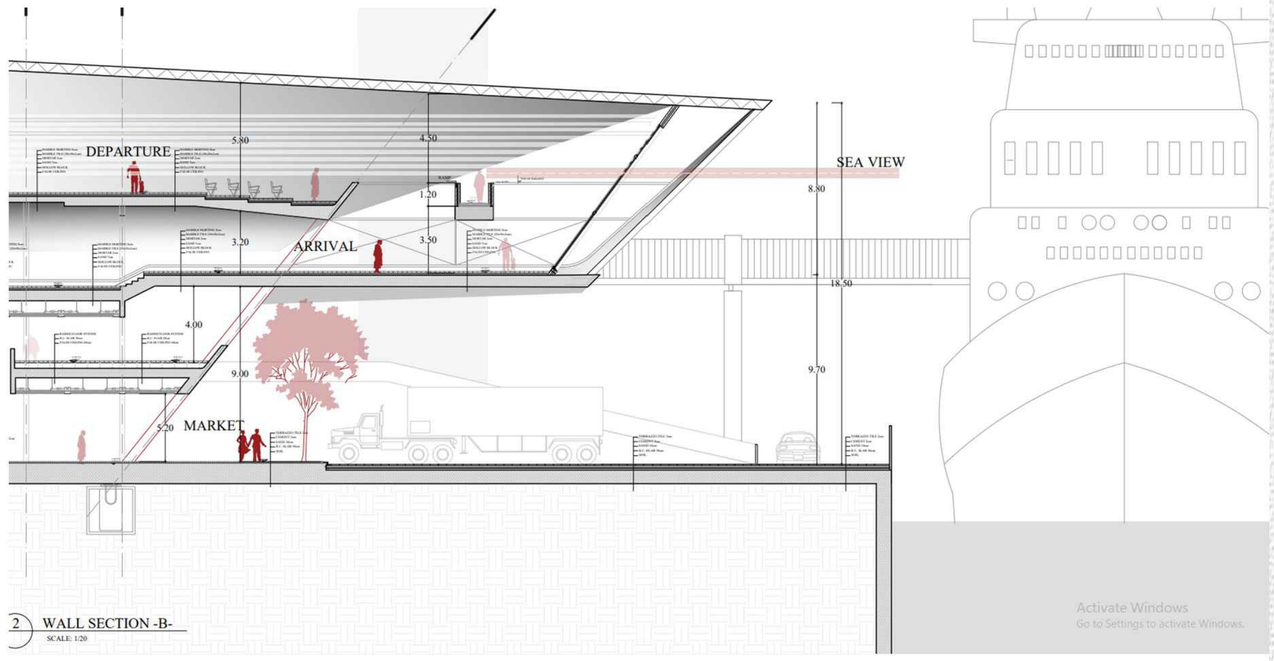
DETAILING DIAGRAMS

ENTRANCE WALL SECTIONS



3 WALL SECTION -C-
SCALE: 1/20

CANTILEVER WALL SECTION



2 WALL SECTION -B-
SCALE: 1/20

PERSPECTIVES