

MARKET DESIGN USING SHIPPING CONTAINERS

A THESIS

Submitted in partial fulfillment of the requirements for the award of
Bachelor of Architecture degree

By

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DEPARTMENT OF ARCHITECTURE

SCHOOL OF BUILDING AND ENVIRONMENT

SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY) Accredited

With Grade "A" by NAAC

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BONAFIDE CERTIFICATE

This is to certify that Thesis Report is the bonafide work of **Sam Joseph (37210073)** who carried out the Thesis entitled "**Market design using shipping containers**" under our supervision from December 2023 to May 2024.

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I would like to express my sincere and deep sense of gratitude to my Thesis Internal guide **Ar.Guruji**, Internal Review member **Ar.Ramkumar SSSR** and External Guide **Ar.Sathish Moses** their guidance, suggestions and constant encouragement which paved the way for the successful completion of my Thesis work.

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SAM JOSEPH

THESIS SYNOPSIS

Transform the market landscape into a captivating magnet for domestic and foreign tourists. This thesis explores the potential of harnessing shipping containers as the cornerstone of market design, crafting immersive experiences that celebrate Kochi's rich cultural tapestry. By integrating these vibrant containers into the city's market spaces, Kochi can not only cater to the evolving preferences of modern tourists but also honor its heritage in a manner that resonates globally.

Inspired by Kochi's diverse traditions, flavors, and sights, this research sets out to reimagine its markets as dynamic hubs of commerce, culture, and community interaction. Through innovative architecture, strategic planning, and collaborative efforts, shipping container-based market designs promise to invigorate Kochi's economy while preserving its unique identity. From lively bazaars showcasing local craftsmanship to culinary havens offering Kerala's gastronomic delights, these revamped market spaces have the potential to captivate tourists and locals alike, fostering a profound sense of connection and discovery amid Kochi's vibrant streets.

As Kochi navigates towards a future driven by tourism and economic prosperity, the integration of shipping container-based market designs emerges as a transformative strategy to redefine the city's global identity.

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CHAPTER 1: INTRODUCTION

1.1 INTRODUCTION

Container architecture is one of the innovative practices of reusing shipping containers to build blocks for habitable and functional spaces. It has many advantages as compared to the conventional method of construction. In the vibrant city of Kochi, nestled along the picturesque coast of Kerala, lies a rich tapestry of culture, history, and commerce. As a hub for both domestic and foreign tourists, Kochi holds immense potential to further elevate its status as a premier destination. However, to truly captivate visitors and offer unique experiences, innovative approaches to market design are essential. This thesis explores the transformative power of utilizing shipping containers in market design to create dynamic spaces that attract and engage tourists.

1.2 NEED OF THE PROJECT

Kochi's tourism potential is vast, yet its market infrastructure needs innovation to meet modern tourist expectations. Shipping containers offer a cost-effective solution, allowing for vibrant market spaces that showcase Kochi's culture and heritage. Utilizing shipping containers preserves Kochi's authenticity, resonating with visitors seeking unique cultural experiences. By embracing innovative market design, Kochi can distinguish itself as a premier tourist destination while sustaining its rich cultural legacy.

1.3 AIM AND OBJECTIVE

- (a) By reimagining market spaces with shipping container-based designs.
- (b) Explore innovative spatial configurations that maximize the use of shipping containers, considering stacking, clustering, and interconnecting containers to create dynamic and functional market layouts that accommodate diverse activities and amenities efficiently.

CHAPTER 2: LITERATURE CASE STUDIES

2.1 PUMA CITY

2.1.1 INTRODUCTION

Puma City, a mobile retail and event space, travels around the globe with the PUMA sailing boat. It is made up of 24 containers that have undergone renovations to become a three-story building. It may be easily put together and taken apart in various international ports, and it has two decks and a bar/lounge space. It is designed by LOK-EK architects in an area of 11000 sq. ft.

It has a height of 11.5 m and they made this kind of commercial container space for easy transportation and flexibility. They have placed this container building in different locations for some time to advertise their brand.



Figure 1; Puma city, Multiple Global Ports

2.1.2 PLANNING DETAILS

They have used the 24 shipping containers for different spaces like office space, retail space, storage and also for the open terrace that is open to the public, it has a bar or lounge area and two decks. The total height of the building is 11.5 m and each container will be above 3 m height. They used red with a theme that is so catchy and attractive. The interior of the containers is designed using plywood and other kinds of wood to make similarities to the flooring that was used for the containers.

The materials that are used are glass for the visual connection and for the natural lighting for the containers. The insulation materials that are used are polyethene terephthalate for high thermal and acoustics insulation. They also use cork which is mainly used for low thermal conductivity and high fire resistance.

2.1.3 STRUCTURAL DETAILS

The structure is that they have used steel frames of rectangular cross-sections of size 40x8x8 feet. And insulation materials that are used for the container are PET (polyethylene terephthalate) which is used for high thermal and acoustic insulation and they also use cork for low thermal conductivity and high fire resistance.

The type of joinery that is used is mechanical joinery and bolted connection. The insulation materials are also bolted to the containers and they use turnbuckles and stacking cones for the structural support. These are the most common kinds of support used in containers. They used ISO containers for the construction so that they would not have any kind of illegal or construction issues. The container that was used should be according to the International Standards to avoid building issues. The structure is composed of 24 shipping containers stacked on three levels, shifted to create internal outdoor spaces, large overhangs, and terraces.

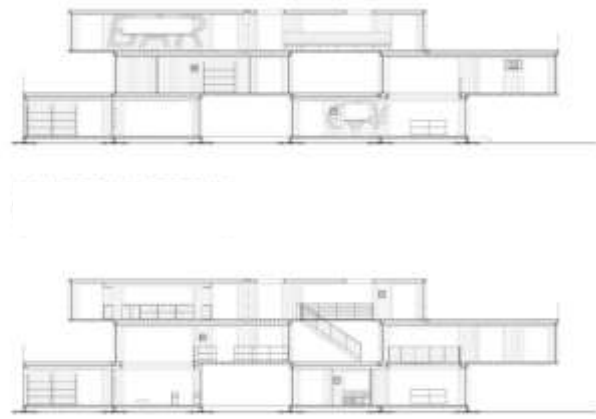


Figure 2; Longitudinal Section of Puma City

The building uses 40-foot-long shipping containers as well as several existing container connectors to join and secure containers both horizontally and vertically. They use cranes for the moving of containers which will take less time. They use ships and heavy trucks for the transportation of the containers to different places. These are the main structural details that they have mentioned. The floor of the shipping containers is already done using plywood and it is also fixed or joined using bolted connections.



Figure 3; (a) Assembly and dismantling of Puma City, (b) Structural support in the exterior of the container using bolts which are marked in blue.

2.2 TRUMP CADDE

2.2.1 INTRODUCTION

Trump Cadde is a shopping and dining complex located on the roof terrace of the Trump Towers Istanbul, Istanbul, Turkey. It is designed by GAD Architecture and the area is about 1040 sqm. It was opened in 2014 and is home to over 25 stores and restaurants.

The complex is designed to resemble a traditional Turkish bazaar, with narrow alleyways and interconnected spaces. The stores and restaurants are housed in 40-foot shipping containers that have been stacked and arranged creatively. Shops, restaurants and even a rooftop bar have been made from converted shipping containers.



Figure 4; Trump Cadde, Turkey

2.2.2 PLANNING DETAILS

There are 18 stores and restaurants, the lower level provides an urban environment with plazas, larger paths, and down to more crowded pathways. Widely operable facades convey the many atmospheres outdoors and blur the lines between inside and outside, while enormous glass façades allow transparency and lovely displays. Shared sitting as well as nearby, themed patios welcome people to stay. The second level above is considerably less packed. Green and spacious deck areas entice people to stay and watch from above.

Green spaces provide a pleasant respite and link various flats, while five eateries extend invitations to their spacious patios. Each unit's arrangement options are flexible because of the steel frame construction and technological underlayment. Electricity, climate control, fresh water, and wastewater are all provided just where they are required. Additionally, this matrix provides a wide range of materials that may be used for the different modules, ranging from 15 to 90 sqm, each with a clear 3.00 m head height. The interior walls and ceilings are finished with plywood panels and plasterboard.

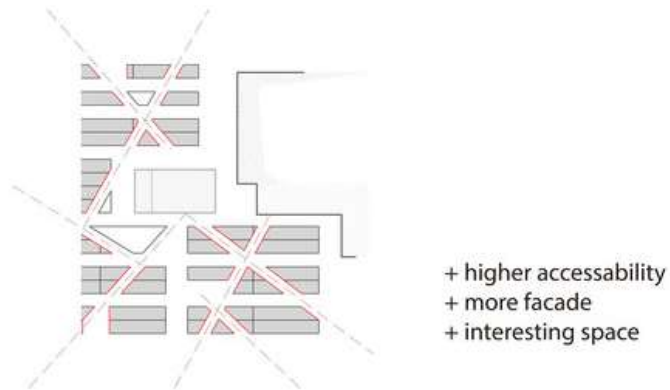


Figure 5; Concept of Trump Cadde

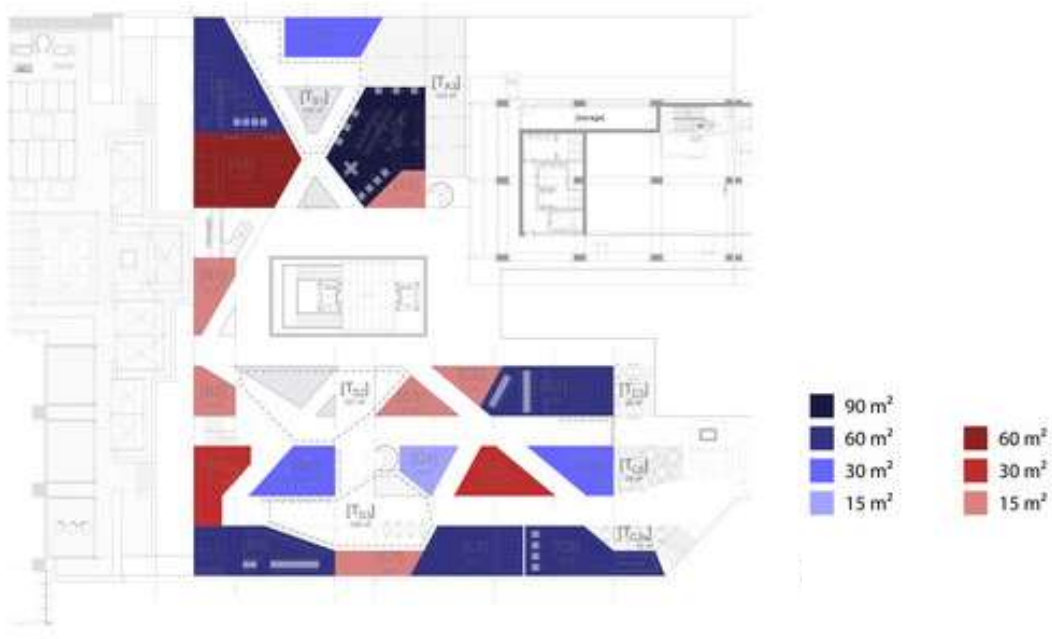


Figure 6; Spatial arrangement of Trump Cadde

2.2.3 STRUCTURAL DETAILS

A wide range of designs for each unit is provided by a steel frame architecture connected with an underground technical layer. A wide range of appropriate materials are available for each module, which can be anywhere between 15 and 90 square meters and has a clear head height of 3 meters. The corridors and terraces are openable in the summer and protected from direct sunlight to maximize the development's usage. However, they are completely shuttered and heated in the cooler months to maintain the space. The service lift, storage spaces in the basement and a buffer zone to retain items temporarily while restocking are all connected by the secret service corridor; both the basement and the site level have refrigerator waste storage options.

Mechanical joints known as "bolted connections" employ bolts to bind two or more pieces of material together. By using a wrench or nut driver to tighten the nuts, a solid and reliable union is made. The shipping containers are joined together and given extra support using metal brackets. Usually composed of steel, the brackets are bolted or welded to the containers. Metal brackets and bolted connections are robust and durable, and they can bear the weight and strains of container construction.

Shipping containers are flexible and adaptable because metal brackets and bolted connectors may be used to link them in several ways. Metal brackets and bolted connections are simple to install, which makes them a practical choice for building. Because they are made of recyclable materials, metal brackets and bolted connectors are an environmentally friendly alternative for buildings.

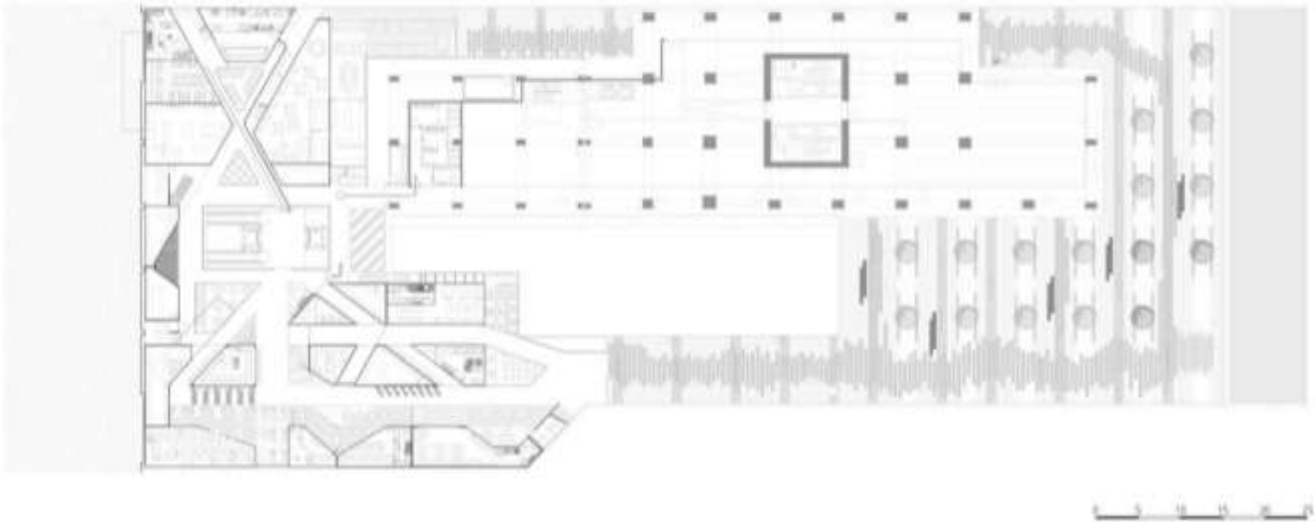


Figure 7; Floor plan of Trump Cadde

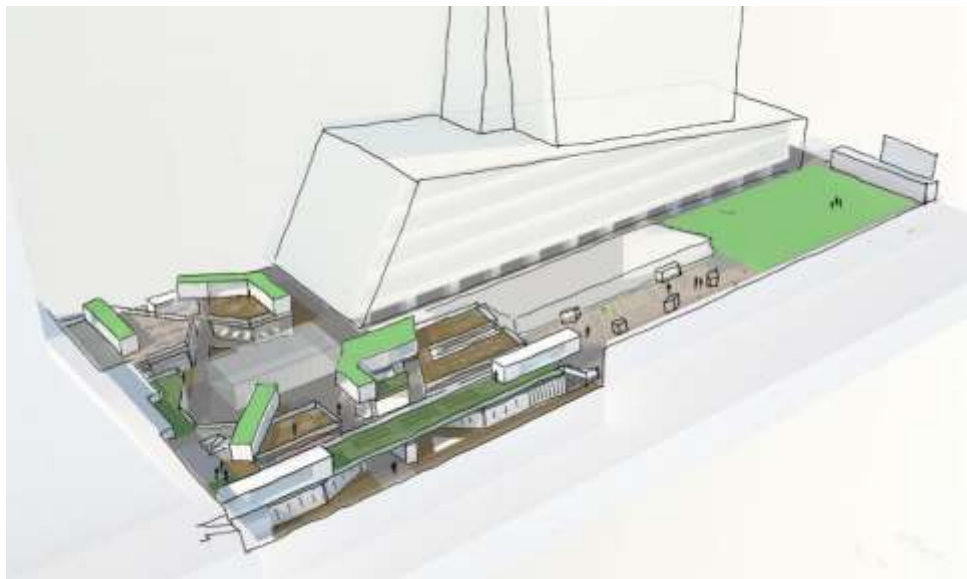
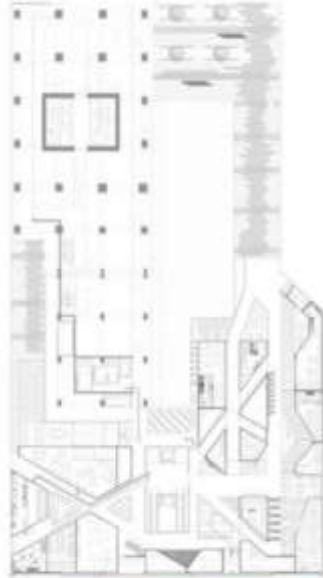


Figure 8; Isometric view of Trump Cadde

LITERATURE CASE STUDY

TRUMP CADDE



SITE LOCATION : ISTANBUL, TURKEY

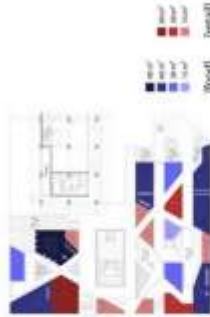
BUILDING TYPOLOGY : SHOPPING AND DINING

COMPLEX

ARCHITECTS : GAD ARCHITECT

AREA: 1040 M²

TRUMP CADDE IS A SHOPPING AND DINING COMPLEX LOCATED ON THE ROOF TERRACE OF THE TRUMP TOWERS ISTANBUL, TURKEY. IT IS DESIGNED BY GAD ARCHITECTURE AND THE AREA IS ABOUT 1040 SQM. IT WAS OPENED IN 2014 AND IS HOME TO OVER 25 STORES AND RESTAURANTS. THE COMPLEX IS DESIGNED TO RESEMBLE A TRADITIONAL TURKISH BAZAAR, WITH NARROW ALLEYS AND INTERCONNECTED SPACES. THE STORES AND RESTAURANTS ARE HOUSED IN 40-FOOT SHIPPING CONTAINERS THAT HAVE BEEN STACKED AND ARRANGED CREATIVELY. SHOPS, RESTAURANTS AND EVEN A ROOFTOP BAR HAVE BEEN MADE FROM CONVERTED SHIPPING CONTAINERS.



THERE ARE 18 STORES AND RESTAURANTS. THE LOWER LEVEL PROVIDES AN URBAN ENVIRONMENT WITH PLAZAS, LARGER PATHS, AND DOWN TO MORE CROWDED PATHWAYS. WIDELY OPERABLE FACADES CONVEY THE MANY ATMOSPHERES OUTDOORS AND BLUR THE LINES BETWEEN INSIDE AND OUTSIDE. WHILE ENORMOUS GLASS FACADES ALLOW TRANSPARENCY AND LOVELY DISPLAYS.

A WIDE RANGE OF DESIGNS FOR EACH UNIT IS PROVIDED BY A STEEL FRAME ARCHITECTURE, CONNECTED WITH AN UNDERGROUND TECHNICAL LAYER. A WIDE RANGE OF APPROPRIATE MATERIALS ARE AVAILABLE FOR EACH MODULE, WHICH CAN BE ANYWHERE BETWEEN 75 AND 90 SQUARE METRES AND HAS A CLEAR HEAD HEIGHT OF 3 METRES. THE CORRIDORS AND TERRACES ARE OPENABLE IN THE SUMMER AND PROTECTED FROM DIRECT SUNLIGHT TO MAXIMISE THE DEVELOPMENT'S USAGE. HOWEVER, THEY ARE COMPLETELY SHUTTERED AND HEATED IN THE COOLER MONTHS TO MAINTAIN THE SPACE. THE SERVICE LIFT, STORAGE SPACES IN THE BASEMENT AND A BUFFER ZONE TO RETAIN ITEMS TEMPORARILY WHILE RESTOCKING ARE ALL CONNECTED BY THE SECRET SERVICE CORRIDOR.

MECHANICAL JOINTS KNOWN AS "BOLTED CONNECTIONS" EMPLOY BOLTS TO BIND TWO OR MORE PIECES OF MATERIAL TOGETHER BY USING A WRENCH OR NUT DRIVER TO TIGHTEN THE NUTS. A SOLID AND RELIABLE UNION IS MADE. THE SHIPPING CONTAINERS ARE JOINED TOGETHER AND GIVEN EXTRA SUPPORT USING METAL BRACKETS, USUALLY COMPOSED OF STEEL. THE BRACKETS ARE BOLTED OR WELDED TO THE CONTAINERS. METAL BRACKETS AND BOLTED CONNECTIONS ARE ROBUST AND DURABLE, AND THEY CAN BEAM THE WEIGHT AND STRAINS OF CONTAINER CONSTRUCTION. SHIPPING CONTAINERS ARE FLEXIBLE AND ADAPTABLE BECAUSE METAL BRACKETS AND BOLTED CONNECTIONS MAY BE USED TO LINK THEM IN SEVERAL WAYS. METAL BRACKETS AND BOLTED CONNECTIONS ARE SIMPLE TO INSTALL, WHICH MAKES THEM A PRACTICAL CHOICE FOR BUILDING. BECAUSE THEY ARE MADE OF RECYCLABLE MATERIALS, METAL BRACKETS AND BOLTED CONNECTIONS ARE AN ENVIRONMENTALLY FRIENDLY ALTERNATIVE FOR BUILDING.



BUILDING WITH SHIPPING CONTAINERS IS AN ECO-FRIENDLY AND CUTTING-EDGE METHOD. RECYCLED SHIPPING CONTAINERS ARE LIGHTWEIGHT, PORTABLE, AND SIMPLE TO BUILD. THEY MAY BE USED TO BUILD A VARIETY OF CONSTRUCTIONS SINCE THEY ARE A FLEXIBLE AND ADAPTABLE MATERIAL. TRUMP CADDE IS A WELL-SITED LOCATION FOR BOTH RESIDENTS AND VISITORS BECAUSE OF ITS DISTINCTIVE AND ATTRACTIVE APPEARANCE. THE COMPLEX IS A LUXURY, APPEALING LOCATION THAT PROVIDES A DISTINCTIVE DINING AND RETAIL EXPERIENCE. A FEELING OF PLACE AND IDENTITY IS CREATED FOR THE COMPLEX THROUGH THE IMAGINATIVE UTILISATION OF SHIPPING CONTAINERS.



LASHING ROOPS ARE USED TO GET MORE SUPPORT FROM ANY MOVEMENT. THIS IS MOSTLY SEEN WHILE TRANSFORMING CONTAINERS.

GROUND FLOOR OR THE SPACE IS DESIGNED USING STEEL COLUMNING AND BEAMS WHICH GIVES THE SKYLARK APPEARANCE OF SHIPPING CONTAINERS, BUT THE ABOVE FLOOR IS CONSTRUCTED USING CONTAINERS.

39210073 SAM JOSEPH

CONTAINER MARKET

Plate 1; Study of Trump Cadde

2.3 COMMON GROUND

2.3.1 INTRODUCTION

Common Ground is a cultural complex located in Seoul, South Korea. It is designed by Urbantainer, who is mainly focused on urban spaces and the area is about 5300 sqm. The complex is designed or constructed using 200 shipping containers and the height is 40 feet, a stored building. It was opened in 2017 and is home to a variety of shops, restaurants and cultural spaces.

The complex is designed for entrepreneurs and to encourage cultural workshops and events. The shops and restaurants are housed in 40-foot shipping containers that have been stacked and arranged creatively. There are pop-up stores and exhibition areas in the center of the complex that are also constructed using containers.



Figure 9; Common Ground, South Korea

2.3.2 PLANNING DETAILS

The planning details of Common Ground give great attention to the public because it has visibility and the design of the building uses containers. The containers that are used for the construction are 200 shipping containers. They also use different sizes of shipping containers for the construction. They have divided it into two blocks where there is a large space in the center

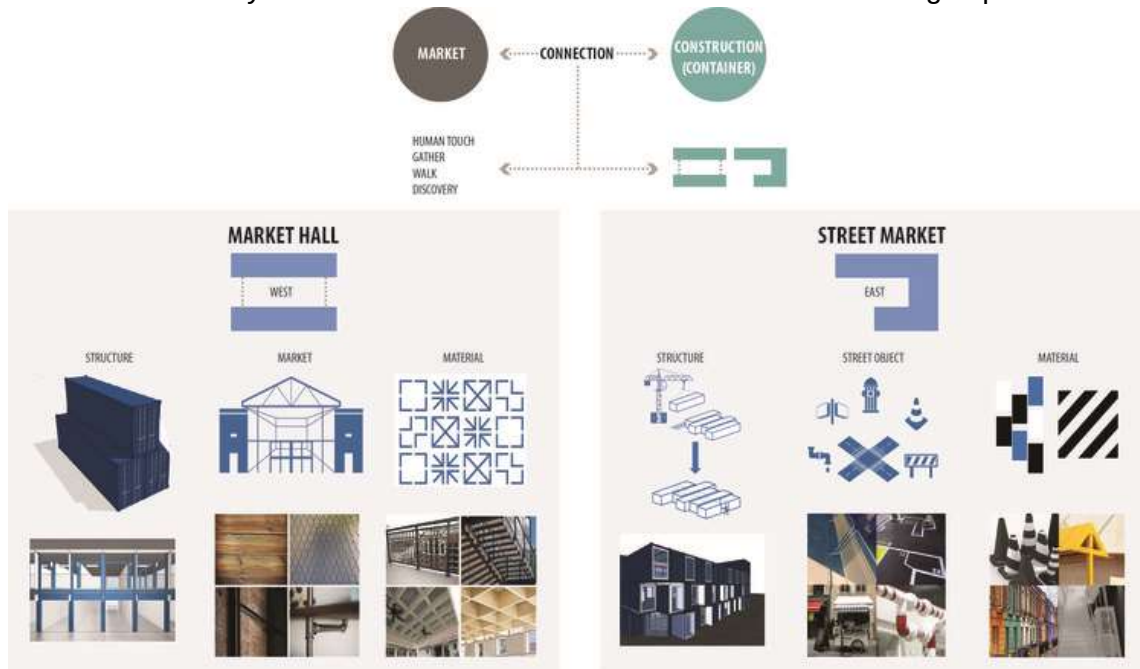


Figure 10; Diagrammatic concept of Common Ground

which is used as a common gathering space and pop-up retail shops. They have used ramps and elevators for vertical access. They have used two types of shipping containers for the construction purpose of the complex. It is mainly done as a gathering space and as a commercial space where people will come to buy things and also to relax. It is planned accordingly that it is in a grid pattern so that it is easy to access and easy to find shops or any other destination from the center open space.

They use many pushes and pulls in the shipping containers to make it unique and noticeable to all the people. The lighting and the ventilation of the containers are done naturally by using large glass sliding doors and opening, from the center of the complex.

2.3.3 STRUCTURAL DETAILING

Common Ground in South Korea is evident in its multi-level structure, constructed using interlinked shipping containers that can reach heights ranging from 12 to 15 meters or more. The foundation is meticulously engineered for stability, taking into account local soil conditions, which may entail the use of deep foundations like piles or spread footings, reinforced by integrated structural supports. They have used concrete flooring for all the buildings for more support and it is supported using I-beams and columns. Modifications to the containers are made to facilitate necessary openings while maintaining their structural integrity.

In light of South Korea's susceptibility to seismic activity, the design incorporates seismic measures such as bracing for added security. Fire safety precautions, anti-corrosion coatings, and the inclusion of load-bearing elements like steel beams further enhance the structure's durability.

Common Ground is an innovative idea of using shipping containers with a modular and flexible design that is used as commercial space and space for gathering. It is constructed to improve public gatherings or recreational spaces for people to enjoy and relax from their work. This kind of building will help to bring other ideas to the



Figure 11; Exterior view of Common Ground

people that the shipping containers can also be used for construction purposes and also to mention the speed of the construction. Another thing is the sustainability of the containers and it is easy to stack one above the other. As it is also considered as a cultural complex the containers can be moved according to the need, if any cultural events happen the containers are allowed to move. so Common Ground is used to create sustainability in an urban environment.

LITERATURE CASE STUDY



SITE LOCATION : SEOUL, SOUTH KOREA

BUILDING TYPOLOGY : PUBLIC CULTURAL COMPLEX

ARCHITECTS : URBANTAINER

AREA : 5300 M²

COMMON GROUND IS AN INNOVATIVE IDEA OF USING SHIPPING CONTAINERS WITH A MODULAR AND FLEXIBLE DESIGN THAT IS USED AS COMMERCIAL SPACE AND SPACE FOR GATHERING. IT IS CONSTRUCTED TO IMPROVE PUBLIC GATHERINGS OR RECREATIONAL SPACES FOR PEOPLE TO ENJOY AND RELAX FROM THEIR WORK. THIS KIND OF BUILDING WILL HELP TO BRING OTHER IDEAS TO THE PEOPLE THAT THE SHIPPING CONTAINERS CAN ALSO BE USED FOR CONSTRUCTION PURPOSES AND ALSO TO MENTION THE SPEED OF THE CONSTRUCTION.



SHOPS
SERVICE ROOMS
STAIRCASE & LIFT
ROOF



THE MARKET HALL IS MADE OF 10M LONG-SPAN CONTAINER MODULES WHICH ARE USED AS SEPARATED SHOPPING BOOTHS. THE SAME SIZED MODULES AS ROOF OF THE HALL CREATE A USABLE TERRACE AREA ON THE THIRD FLOOR.

THEY HAVE USED CONCRETE FLOORING FOR ALL THE BUILDINGS FOR MORE SUPPORT AND IT IS SUPPORTED USING BEAMS AND COLUMNS.



SPACIOUS GATHERING AND PERFORMANCE AREA



THEY HAVE ALSO USED YARN INSULATION, GYPSUM BOARD, 12MM WEATHER RESISTANT STEEL PLATES AND ALSO URETHANE COATING ON THE EXTERIOR FOR TO REDUCE THE TEMPERATURE INSULATION.



RESTAURANTS
STREET MARKET STALLS
MARKET HALL RETAIL AREA
TERRACE MARKET
FOOD TRUCK MARKET
EXHIBITION SPACE
WEEKEND MARKETS

SPACES

COMMON GROUND



IT WAS CONSTRUCTED WITH 200 RECYCLED SHIPPING CONTAINERS ACQUIRED WHEN A LOCAL SHIPYARD WENT INTO LIQUIDATION. LOCAL DESIGNERS, URBANTAINER, THEN SET ABOUT CREATING A 12.3M, 3.6FT, FOUR-STOREY STUNNING PIECE OF ARCHITECTURE. ITS RELATIVELY MOBILE TOO AND CAN BE DISASSEMBLED AND RELOCATED QUITE EASILY IF REQUIRED.

THE CONTAINERS ARE PAINTED IN A SHADE OF BRIGHT BLUE AND IS STACKED INTO THREE AND FOUR-STORY HIGH SECTIONS. OLD SHIPPING CONTAINERS WERE CUT UP AND CONVERTED INTO PODS AT THE CONSTRUCTION COMPANY. THEY WERE THEN ASSEMBLED ON-SITE WHICH REDUCED THE PROJECT DEVELOPMENT TIME BY FIVE MONTHS.



THEY HAVE USED EXPOSED CEILING TO SHOW THE RAW AND ROUGH FEELING OF SHIPPING CONTAINERS. FOR MORE SUPPORT THEY ALSO HAVE USED LASHE RODS THAT GIVES MORE SUPPORT AND AVOID FROM HIGH WINDS OR OTHER EFFECTS.



CONTAINER MARKET

Plate 2; Study of Common Ground

2.4 STACKT MARKET

2.4.1 INTRODUCTION

Stackt market in Toronto, Canada is a vibrant example of architectural reimagination, Stackt embraces a revolutionary approach, using repurposed shipping containers as its building blocks. This bold choice not only inject a distinctive industrial aesthetics but also foster sustainability and community spirit.

The two-block, 2.4-acre site was designed to provide Torontonians and their visitors with a lively cultural destination and the community hub with anchor and pop-up shops, food and beverage vendors and an onsite brewery, woven with courtyards, pedestrian path, and open spaces for the community programming and events.



Figure 12; Stackt Market, Canada

2.4.2 PLANNING DETAILS

The architectural design emphasizes flexibility and adaptability, with modular structures allowing for easy reconfiguration and scalability. Each container serves as a dynamic retail space, fostering a diverse ecosystem of local businesses, artisanal vendors, and cultural events. The market's layout encourages serendipitous exploration, with open-air pathways and communal areas promoting social interaction and community engagement.



Figure 13; Plan of Stackt Market

Sustainable elements such as green roofs, rainwater harvesting systems, and energy-efficient technologies underscore the project's commitment to environmental stewardship. With its blend of creativity, functionality, and sustainability, Stackt Market exemplifies the transformative potential of urban repurposing projects in fostering vibrant, inclusive communities.

Stackt Market's structural detailing revolves around the innovative use of repurposed shipping containers, which serve as the building blocks of the entire complex. These containers

LITERATURE CASE STUDY



SITE LOCATION : TORONTO, CANADA
BUILDING TYPOLOGY : SUPERMARKET
ARCHITECTS : LGA ARCHITECTURAL PARTNERS
AREA : 2549 M²

STACK MARKET IN TORONTO, CANADA, IS A VIBRANT EXAMPLE OF ARCHITECTURAL REMEDIATION. STACK EMBRACES A REVOLUTIONARY APPROACH, USING REPURPOSED SHIPPING CONTAINERS AS ITS BUILDING BLOCKS. THIS BOLD CHOICE NOT ONLY INFLECTS A DISTINCTIVE INDUSTRIAL AESTHETIC BUT ALSO FOSTERS SUSTAINABILITY AND COMMUNITY SPIRIT.



THE TWO-BLOCK, 2.4-ACRE SITE WAS DESIGNED TO PROVIDE TORONTO CHANGING AND THEIR VISITORS WITH A LIVELY CULTURAL, DESTINATION AND COMMUNITY HUB WITH ANCHOR AND POP-UP SHOPS, FOOD AND BEVERAGE VENDOR AND AN ON-SITE BREWERY, WOMEN WITH COURTYARDS, PEDESTRIAN PATHS, AND OPEN SPACES FOR COMMUNITY PROGRAMMING AND EVENTS. SURROUNDED BY NEW DEVELOPMENTS AND CONDO CONSTRUCTION, A DAYCARE CENTER, RAILWAY TRACKS, FORTH YORK'S SITE AND THE BENTWAY'S NEW PUBLIC OUTDOOR SPACE, STACKEE IMAGINES THE AREA'S UNIQUE AND CHANGING CHARACTERISTICS WHILE MOVEMENTING THEM WITH AN ADDITIONALITY.



ALL DAY SUNLIGHT, FLOOR TO CEILING WINDOWS, DESIGNED MEETINGS

INTERIOR OF SOLIDUM



39210073 SAM JOSEPH

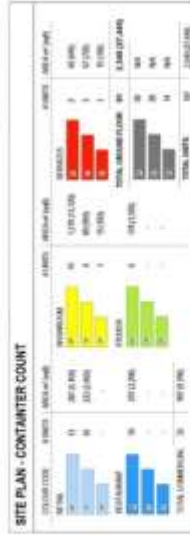
STACKT MARKET



THE MOST OF THE SPACES WILL BE HAWKED
LARGE WINDOWS AND OPENINGS TO
ALLOW MORE SUNLIGHT TO ENTER INSIDE

SUNLIGHT DEPRIVATION DURING WINTER CAN CAUSE EXPERIENCE SIGNIFICANTLY LESS SUNLIGHT, WHICH CAN LEAD TO A SEASONAL AFFECTIVE DISORDER (SAD). A SOLARIUM PROVIDES A MUCH-NEEDED DOSE OF NATURAL LIGHT, HELPING COMBAT THE WINTER BLUES AND BOOSTING MOOD AND ENERGY LEVELS.

VITAMIN D DEFICIENCY: LACK OF SUNLIGHT ALSO HINDERS VITAMIN D PRODUCTION, CRUCIAL FOR BONE HEALTH AND IMMUNE FUNCTION. SOLARINS OFFER A SAFE AND NATURAL WAY TO ABSORB VITAMIN D, PROMOTING OVERALL WELL-BEING.



SPICE	DEPTH	QUANTITY	ANNUAL DEMAND	OFFSHORE	LEGEND
ELABALAM	100	41	11		
NEEDAPPA	1,200	35	27		5, 6, 7
ETIADU	1,600	30	44		5, 6, 7
BEJANAPPA	1,900	231	119		
BEJANAPPA	3,400	300	31		
BEJANAPPA	1,200	31	27		
BEJANAPPA	1,900	140	66		
BEJANAPPA	1,100	300	261		
BEJANAPPA	3,100	140	111		
BEJANAPPA					5, 6, 7

Source: SPICE database

A SOLARIUM IS A ROOM BATHED IN NATURAL LIGHT THANKS TO ITS WALLS AND/OR ROOF BEING MADE OF GLASS. ITS ESSENTIALLY A HAVEN FOR SUNSHINE LOVERS, OFFERING A SPACE TO CONNECT WITH NATURE WHILE STAYING COMFORTABLY INDOORS.

THEY HAVE CONNECTED 2 SHIPPING CONTAINERS OF SIZE 40FT TO 8FT TO GET A LARGE SPACE AND IT IS OF AN AREA OF 888 SQ.FT. THEY HAVE GIVEN WINDOWS ON WEST SIDE.

CONTAINER MARKET

2.5 JEW'S TOWN



Plate 4; Study on Jew's town, Fort Kochi

DESIGN ANTIQUE SHOP8

THE WIDTH OF THE NORMAL ROOM IS ABOUT ABOUT 3 - 5 METRE WHERE THE DISPLAY SPACE OF MINIMUM 0.3 TO 0.8 METRE AND MOST OF THE ANTIQUE SHOP IS DESIGNED OR PLAN SUCH A WAY THAT THE ENTRY AND EXIT WILLBE MOSTLY THROUGH DIFFERENT PATH OR SPACE

THEY SCATTER ANTIQUE URNS, PLANTERS, AND STATUES THROUGHOUT THE SPACE
ARRANGE ANTIQUE BENCHES UNDER LUSH GREENERY FOR A QUIET HAVEN AMONG
THE BUSTLING STREET.



PLAN 1

- THE SHOP HAS A LARGE DISPLAY SPACE MARKED IN BLUE, WHERE THE ANTIQUES ARE SHOWCASED.
- ADJACENT TO THE DISPLAY SPACE THERE IS A CAFE SEATING SPACE LOCATED AT THE FRONT. THIS SUGGESTS THAT THE SHOP ALSO OFFERS A PLACE FOR CUSTOMERS TO RELAX AND ENJOY A BEVERAGE.
- THE SIZE OF DISPLAY SPACE WILL BE OF ABOUT 3 METRE WIDTH AND LENGTH IS ABOUT 10.5 METRE WHICH IS A LONG NARROW WALKSPACE AND THAT WILL HELP TO VIEW THE ANTIQUES OR STATUE FROM A DISTANCE.



PLAN 3

- THE SHOP HAS A DISPLAY OR SHOWCASE AREA IN THE FRONT OF THE SHOP TO ATTRACT PEOPLE, DISTINGUISHED BY STRIPED UNIFORMS.
- THERE ARE SEMI-PRIVATE SPACES, LOCATED BETWEEN THE DISPLAY AND PRIVATE AREAS. THESE COULD BE USED FOR SPECIAL DISPLAYS OR CUSTOMER CONSULTATIONS.
- THERE ARE TRAIL ROOMS & RESTROOMS THAT INDICATE THE SHOP ALSO SELLS CLOTHING OR OTHER WEARABLE ITEMS.
- SIMILAR AS THE PLAN 1, THE DISPLAY AREAS ARE DESIGNED SUCH A WAY THAT A LONG, NARROW WALKWAY OF MINIMUM 0.8 METRE TO 1.2 METRE AND THE SIZE OF DISPLAY AREAS IS ABOUT 8 METRE LENGTH AND 4 METRE WIDTH.

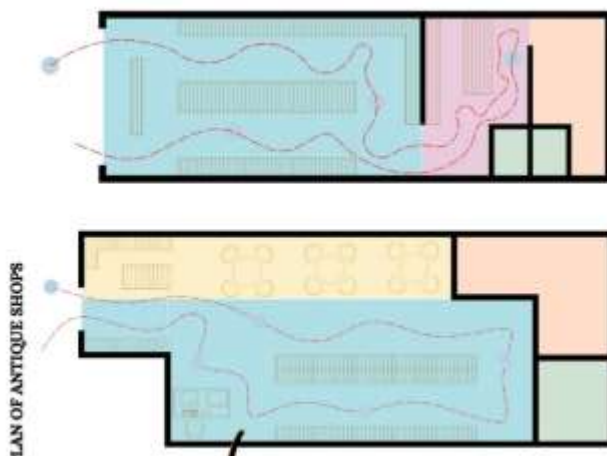


COLOUR

- **INSPIRATION FROM THE VIBRANT HUES OF KEBALLA.** DEEP COBALT WALLS REMINISCENT OF SPICES AND TEMPLE WALLS CAN BE BALANCED WITH POPS OF TURQUOISE, REMINDING THE MARIANNA SEA.
- **EARTHY TONES LIKE TERRACOTTA OR OLIVE GREEN,** CREATING A CALMING BACKDROP FOR THE ANTIQUES TO SHINE.
- **THEY HAVE LIKE-CONTRASTING COLORS** TO HIGHLIGHT ARCHITECTURAL FEATURES: PAINT EXPOSED BRICK WALLS A DARK CHARCOAL TO MAKE THEM STAND OUT, OR FRAME WINDOWS WITH A VIBRANT BLUE FOR A PLAYFUL POP.
- **VINTAGE ITEMS WITH FACED PATTERNING,** INTIMATELY CARVED FURNITURE WITH RICH WOOD TONES, AND COLORFUL CERAMIC POTTERY CAN ALL CONTRIBUTE TO THE OVERALL PALETTE.



COLOUR TEXTURES USED
IN JEW STREET



- ①
- DISPLAY SPACE
PRIVATE SPACE
SEMI PRIVATE SPACE
- ②
- CAFE SEATING SPACE
TRAIL ROOMS & RESTROOMS

- **NEW STREETS** COLONIAL PAST WHISPERS THROUGH AZULEJOS, THE HAND-PAINTED CERAMIC TILES FROM PORTUGAL.
- **NEW STREET** WAS A BUZZLING HUB ON THE SPICE ROUTE, SO TRADING LEGACY WITH TILES REMINISCENT OF EXOTIC LANDS OF MOROCCAN ZILLIDGE PATTERNS OR TURKISH MOSAIC DESIGNS.



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CONTAINER MARKET

Plate 4; Planning of Jew's town, Fort Kochi

BROADWAY MARKET, KOCHI

LEGEND

TOTY STUDENT	CLOTHING STORE	ELECTRONIC STORE
HOCKEY STORE	FOOD COURT	SCHOOL ADMINISTRATION
BUS STOP	ELECTRICITY STATION	TELEPHONE BOOTH
	PARKING	LANDSCAPE STRUCTURE

BROADWAY MARKET IS AN ICONIC SHOPPING STREET IN THE CITY OF KODAKKAL, KERALA, INDIA. ESTABLISHED IN 1900, IT IS ONE OF THE OLDEST MARKETS IN THE STATE, FEATURING A VARIETY OF SHOP, BOUTIQUES, AND VITRINES. IT IS KNOWN FOR ITS VIBRANT ATMOSPHERE, WITH MERCHANTS SELLING EVERYTHING FROM TRADITIONAL INDIAN FOOD AND SPICES TO HANDICRAFTS, JEWELRY, CLOTHING, GADGETS, AND ELECTRONIC ITEMS.

FROM 8:00 AM TO 10:00 PM IS THE TIME OF THE MARKET WHERE PEOPLE USED TO COME AND BUY THINGS FROM RETAIL SHOPS OTHER THAN VEGETABLE MARKET.

THE MOST OF THE PEOPLE WHO USED NEED A BULK
AMOUNT OF : VEGETABLES : LIKE : HOTEL :
RESTAURANTS, RETAIL SHOPS, ETC.)

MORNING
FROM 3:00AM TO 9:00AM

FROM 4:30PM TO 7:00PM

 JANUARY, APRIL, AUGUST,
SEPTEMBER ANDNUMBER OF SHOPS
AFTER 1980S

THERE ARE MORE THAN 300 STORES OR SHOPS THAT THERE ARE IN DIFFERENT SIZE AND SHAPE. THE MOST OF THE SHOPS HAVE 2 TO 5 PEOPLE AS THE WORKERS AND THE OWNER OF THE SHOP IN THAT MOST OF THE SHOPS THAT COULD BE FOUND IS 90% CLOTHING AND FASHION ACCESSORIES. THE TOTAL NO. OF SHOPS IS ABOUT 746+ STORES AND THE NO. OF PEOPLE ARE ABOUT 1540+.

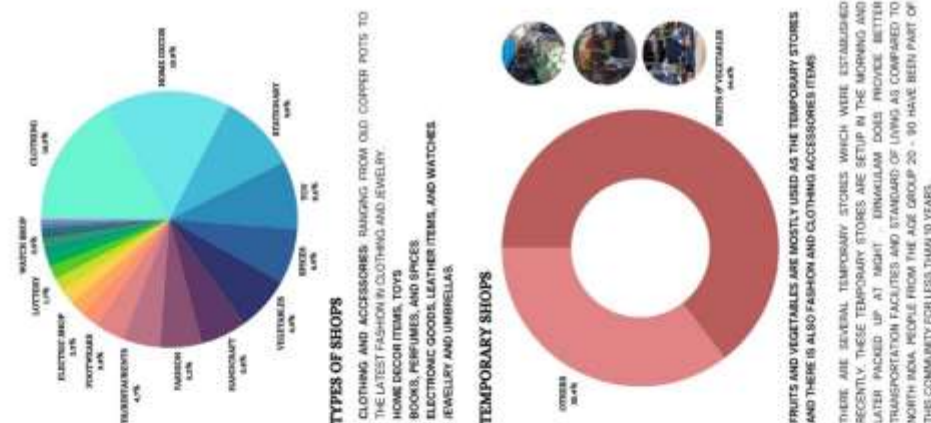
2023 a record-breaking year for Kerala Tourism in terms of domestic visitors'

As per the official data released by Kerala Tourism, Ernakulam recorded the maximum number of domestic footfalls amounting 43,48,297 tourists, followed by Munnar (26,61,934), Thiruvananthapuram (25,61,707), Thiruvananthapuram (25,61,707) and Wayanad (12,47,166).

THIS / November 30 • 2022 / \$2.00 PER COPY

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CONTAINER MARKET



15

2.7 VALLARPADAM CONTAINER TERMINAL



Plate 6; Study on Vallarpadam Container Terminal

CHAPTER 3: DATA COLLECTION AND STANDARDS

3.1 COMPARISON OF CASE STUDIES

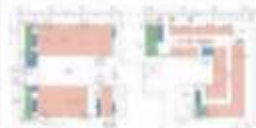
ASPECTS	COMMON GROUND	STACKT MARKET	TRUMP CADDE	INFERENCE																																																		
LOCATION	SOUTH KOREA	CANADA	TURKEY	-																																																		
WHY CONTAINERS ?	THEY USE RECYCLED SHIPPING CONTAINERS ACQUIRED WHEN A LOCAL SHIPYARD WENT INTO LIQUIDATION	THEY HAVE USE CONTAINER TO CREATE AN FAST AND TEMPORARY STRUCTURE IN A SHORT PERIOD OF TIME. THE SITE DOESNOT PERMIT PERMANENT STRUCTURES	THEY USE CONTAINERS BECAUSE THEY FOUND UNUSED CONTAINERS NEAR THE SEA DURING FLOODS. SO TO REMOVE THOSE THEY HAVE USED IT FOR THE CONSTRUCTION	MOSTLY THEY HAVE USED FOR TEMPORARY AND EASY INSTALLATION OF CONTAINERS																																																		
FOUNDATION	CONCRETE PLATFORM AND ALSO USE ANCHORS FOR THE SUPPORT 	CONCRETE PLATFORM 	CONCRETE PLATFORM AND ANCHORS ARE USED FOR MORE SUPPORT 	ALL THE PROJECTS USE OR PLACE IN THE CONCRETE PLATFORM AND FOR MORE ADDITIONAL SUPPORT THEY USE LASH RODS OR ANCHORS 																																																		
SIZE OF CONTAINERS	<table><tr><th colspan="2">20' container</th><th colspan="2">40' high-cube container</th></tr><tr><th>imperial</th><th>metric</th><th>imperial</th><th>metric</th></tr><tr><td>20' 0"</td><td>6.096 m</td><td>40' 0"</td><td>12.192 m</td></tr><tr><td>8' 0"</td><td>2.438 m</td><td>8' 0"</td><td>2.438 m</td></tr><tr><td>8' 0"</td><td>2.438 m</td><td>8' 0"</td><td>2.438 m</td></tr></table>	20' container		40' high-cube container		imperial	metric	imperial	metric	20' 0"	6.096 m	40' 0"	12.192 m	8' 0"	2.438 m	8' 0"	2.438 m	8' 0"	2.438 m	8' 0"	2.438 m	<table><tr><th colspan="2">20' container</th><th colspan="2">40' high-cube container</th></tr><tr><th>imperial</th><th>metric</th><th>imperial</th><th>metric</th></tr><tr><td>20' 0"</td><td>6.096 m</td><td>40' 0"</td><td>12.192 m</td></tr><tr><td>8' 0"</td><td>2.438 m</td><td>8' 0"</td><td>2.438 m</td></tr><tr><td>8' 0"</td><td>2.438 m</td><td>8' 0"</td><td>2.438 m</td></tr></table>	20' container		40' high-cube container		imperial	metric	imperial	metric	20' 0"	6.096 m	40' 0"	12.192 m	8' 0"	2.438 m	8' 0"	2.438 m	8' 0"	2.438 m	8' 0"	2.438 m	<table><tr><th colspan="2">40' high-cube container</th></tr><tr><th>imperial</th><th>metric</th></tr><tr><td>40' 0"</td><td>12.192 m</td></tr><tr><td>8' 0"</td><td>2.438 m</td></tr><tr><td>8' 0"</td><td>2.438 m</td></tr></table>	40' high-cube container		imperial	metric	40' 0"	12.192 m	8' 0"	2.438 m	8' 0"	2.438 m	THEY HAVE MOSTLY USE 40' HIGH CUBE CONTAINERS SO THERE WILL BE ENOUGH HEIGHT AND SPACE AND THESE ARE THE STANDARD SIZES WITH ARE APPROVED BY "ISO"
20' container		40' high-cube container																																																				
imperial	metric	imperial	metric																																																			
20' 0"	6.096 m	40' 0"	12.192 m																																																			
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40' 0"	12.192 m																																																					
8' 0"	2.438 m																																																					
8' 0"	2.438 m																																																					
TYPES OF INSULATION	THEY HAVE ALSO USED YARN INSULATION, GYPSUM BOARD, 12MM WEATHERING STEEL PLATES PLYWOOD PANELS AND PLASTERBOARDS. URETHANE COATING IS USED IN THE EXTERIOR OF THE CONTAINERS.	TYPES OF INSULATION FOR SHIPPING CONTAINERS INCLUDE STYROFOAM, BLANKET INSULATION, AND SPRAY FOAM INSULATION.	PLYWOOD PANELS, PLASTERBOARDS	FOR THE INSULATION MOST OF THEM WILL BE USING PLYWOOD PANELS, PLASTERBOARD AND ALSO SPRAY FORMS, ETC.																																																		
CIRCULATION	 THEY HAVE DESIGNED AS SIMILAR AS MARKET WHICH HAS STRAIGHT AND LONG PATHS	 THEY HAVE DESIGNED AS SIMILAR AS AN EVENT SPACE WITH SMALL STUDIO ROOMS AND LARGE OPEN SPACE	 THEY HAVE DESIGNED AS SUCH A WAY THAT THEY HAVE CLUSTERED IT AND MAKE CRIS-CROSS PATH WAYS	CIRCULATION OF ALL THE SPACE ARE DIFFERENT ACCORDING TO THE PROGRAM AND THERE NEED BUT THEY HAVE MOSTLY USE STRAIGHT AND LONG VIEW CIRCULATION																																																		
WEAKNESS	THE BUILDING HAS DONE MORE MODIFICATIONS ON THE CONTAINERS WHICH AFFECT THE STRENGTH OF CONTAINERS.	THE BUILDINGS FELL UNDER THE EXAMINE OF PERMANENT STRUCTURE ZONING, INCLUDING THEIR LEVEL OF SERVICING AND TAXES	THE BUILDING HAS DONE MORE MODIFICATIONS ON THE CONTAINERS WHICH AFFECT THE STRENGTH OF CONTAINERS	THE MOST OF THE PROJECT ARE USING MODIFICATION THAT CAN CAUSE THE STRENGTH OF THOSE CONTAINERS.																																																		

Table 1; Case study comparison 1

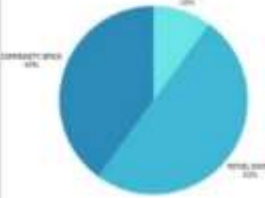
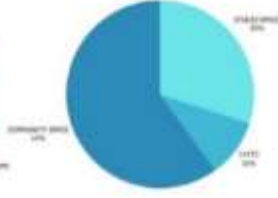
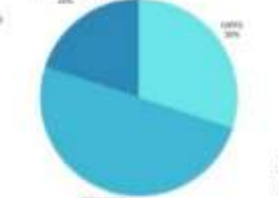
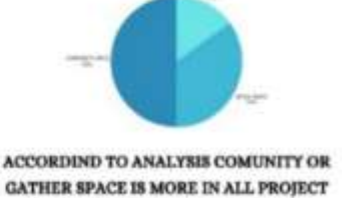
ASPECTS	COMMON GROUND	STACKT MARKET	TRUMP CADDE	INFERENCE
LOCATION	SOUTH KOREA	CANADA	TURKEY	-
ARCHITECTS	URBANTAINER	LGA ARCHITECTURAL PARTNERS	GAD ARCHITECTS	-
CLIMATE	TEMPERATE CLIMATE	COLD CLIMATE	MEDITERRANE CLIMATE	TRUMP CADDE HAS MEDITERRANE CLIMATE WHICH HAS HOT DRY SEASON
SITE AREA	8400 SQ.M 	8320 SQ.M 	19838 SQ.M 	SITE AREA FOR TRUMP CADDE IS LARGE BECASUSE IT IS CONNECTED WITH A LARGE SHOPPING MALL 
BUILDUP AREA	7907 SQ.M	3270 SQ.M	1040 SQ.M	THE BUILDUP AREA OF COMMON GROUND MARKET IS MORE BECAUSE IT IS 3 STORIED BUILDING OTHERS ARE SINGLE STORIED AND 2 STORIED BUILDING
NO. OF CONTAINERS	200 CONTAINERS	197 CONTAINERS	40 CONTAINERS	COMMON GROUND MARKET USE THE MOST OF THE CONTAINERS BUT THEY ARE ALL MODIFIED AND STACKED ONE ANOTHER
SPACES INCLUDED	THE THREE-STORY STRUCTURE HOUSES SEVENTY STORES, TWENTY RESTAURANTS, AND A THIRD-FLOOR ROOF TERRACE.	CULTURAL DESTINATION AND COMMUNITY HUB WITH ANCHOR AND POP-UP SHOPS, FOOD AND BEVERAGE VENDORS AND AN ONSITE BREWERY.	38 FASHION AND LIFESTYLE RETAILERS AND RESTAURANTS. THERE ARE ALSO 18 SHOPS AND RESTAURANTS, PROVIDING AN URBAN SETTING WITH PLAZAS, AND WIDER ALLEYS	ALL THE PROJECTS HAVE SIMILAR KIND OF SPACES LIKE RETAIL SHOPS, GATHERING SPACE , KITCHENS & CAFES
AREA DISTRIBUTION				 ACCORDIND TO ANALYSIS COMUNITY OR GATHER SPACE IS MORE IN ALL PROJECT WHICH CAN CONVERT INTO LARGE EVENT SPACE
ACCESS AND LINKAGE				ALL THE PROJECT HAS ACCESS FROM ROAD AND ALSO FROM METROS AND TRAINS. THE ROADS ARE MOSTLY 6 LANE AND 2 LANE ROADS

Table 2; Case study comparison 2

3.2 STANDARDS

F.3.1 = $\frac{\text{Total built-up area on all floors}}{\text{Plot area}}$

CONTINGENT AND FLOOR SPACE INDEX (C.F.S.I.)

Occupancy	Maximum permissible C.F.S.I.	Without additional floor area	With additional floor area of 6,000 sq. m. or more for the sub-plot area
Group F - Commercial I	4.0	3	8

TABLE FOR BUILDINGS UNDER DIFFERENT OCCUPANCIES

Buildings in Group A-I & J of built-up area exceeding 200 sq. metres and plot area not exceeding 125 sq. metres	Buildings in Group B, C & D of built-up area exceeding 200 sq. metres	Buildings in Group E & F of built-up area exceeding 200 sq. metres	Group G built-up area upto 200 sq. metres	Buildings in Group G of built-up area exceeding 200 sq. metres	Buildings in Group H of built-up area exceeding 200 sq. metres	Group I	Group J
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Front (in metres)	3	2	3	7.5	1	3	3
Rear (in metres)	1.5	1	2	3	1.5	2	3
Side (in metres)	1	0.6	2	3 and 5	1	3	3

PARKING SPACE
OFF-STREET PARKING SPACE FOR OCCUPANCIES OTHER THAN GROUP A-I

Occupancy	One parking space for every or fraction of
Group F - Commercial building exceeding 10 sq. metres built-up area	10 sq. metres of built-up area for buildings having total built-up area upto 200 sq. metres and 40 sq. metres of built-up area for the total built-up area in excess of 200 sq. metres.

In addition to the parking space as in Table 10, in the case of Group F - Commercial or Commercial, Group G - Industrial I and Group G - Industrial II and Group H - storage occupancies, loading and unloading spaces each 30 sq. metres shall be provided within the plot, at the rate of one such space for each 1000 sq. metres of built-up area or fraction thereof, exceeding the first 700 sq. metres of built-up area.

2% of the required parking subject to a minimum of one car space, shall be provided near the entrance, exclusively for use of the differently-abled with maximum travel distance of 30 metres, from the building entrance.

The width of such parking bay shall be at least 3.6 metres.

OCCUPANT LOAD

Sl. No.	Group of occupancy	Occupant Load (built-up area in square metres per person)
1	Group A-I Residential	11.1
2	Group A-I Lodging houses & Special residential	4.0
3	Group B - Educational	4.0
4	Group C - Medical Hospital	15.8
5	Group D - Assembly	1.5
6	Group E - Office	1.5
7	Group F - Commercial	4.0
8	Group G - Industrial I	10.0
9	Group G - Industrial II	10.0
10	Group H - Storage (including Warehousing)	50.0
11	Group I - Hazardous	10.0
12	Group J - Multi-story complex	4.0

ROAD

- The width of every new street, public or private, intended for use as motor way giving access to or through a commercial precinct consisting of a continuous row of shops exceeding ten in number shall not be less than 10 metres except in the case of cul-de-sac not exceeding 1.0 metres length, where the minimum width shall be 7 metres.
- The frontage of every commercial plot abutting the street, shall have a minimum width of 6 metres.
- The minimum size of plot within a layout proposed for commercial development shall not be less than 60 sq. metres.
- For every plot within a layout for commercial development, building line from the street shall not be less than 7 metres.

STAIRCASE

The number and width of stair shall be determined with respect to the occupant load as table 16 of these rules and maximum travel distance between two stairs shall not be less than 10m.

For each stair-

- minimum width of stair shall be 1.20 metres;
- minimum width of tread shall be 30 centimetres;
- maximum height of stair shall be 17 centimetres;
- minimum height of handrail shall be 90 centimetres.

The minimum headroom in a passage under the landing of a staircase and under the staircase shall be 2.2m.

Any building having more than three floors including basement floor(s) shall have at least two staircases, one of which may be a fire escape staircase.

Elevators can be provided instead of staircases. The width of such elevators shall not be less than one metre.

SANITATION STANDARDS
OCCUPANT LOAD FOR CALCULATING SANITATION REQUIREMENTS

Sl. No.	Occupancy	Built-up area in sq. metres/person
1	Group A-I, B, C, D and E	5.5
2	Group G and I	1.8
3	Group G-I, G-II, H and J	30

Maximum size of toilet shall be 1.20 m x 1.75 m.

Minimum clear opening of the door shall be 90 cm. wide, the door shall swing out, or be sliding or folding type.

Suitable arrangements of vertical/horizontal handrails with 5cm. clearance from the wall shall be provided in the toilet.

The water closet seat shall be 50 cm. above from the floor level.

At least one sink in each floor shall have a knee room of 70cm. high under the sink, and

Locks of such toilet doors shall be of a type that can be opened from outside in case of emergency.

RAMP

Every public building exceeding 1000 sq. metres and residential flats exceeding 2500 sq. metres built-up area shall have lift or equivalent approach through a ramp (intended for the differently-abled and elderly) to each floor. The minimum cage dimensions of such lift shall be as follows:

- Clear internal width 110 cm
- Clear internal depth 200 cm
- Entrance door width 90 cm

The minimum gradient of any ramp approach intended for the differently-abled, elderly and children shall not exceed 1 in 12 and shall be finished with non-slippery material. The minimum width of ramp shall be 120 cm, and provided with handrails of 90 cm height on both sides. Minimum gap from the adjacent wall to the hand rail shall be 50mm. The slope of all such ramps shall be constant within a building. **Entrance landing shall be provided**

Plate 7; Study on standards

CHAPTER 4: SITE STUDY AND ANALYSIS

4.1 SITE STUDY



Figure 14; Site

Latitude & Longitude:

9°59'33"N 76°16'10"E

Location:

Near Abraham Madamakkal Road, near Purva Grandbay, Marine Drive, Ernakulam, Kerala

Area:

32,460 sq.m or 8 ac

About site

- The site is surrounded by the high class residential area and it has many views from the site which is consider as one of the tourist spots.

- It also has the view to the Vembanad Lake
- It is a vacant land that is shown as a commercial and residential area in the proposed land use map. The total area is about 32,460 sq.m or 8 ac. There is also a small part of lake is passing through the center of the site.

North:

It is the main Bridge that connects Kochi and Vypin through road ways. The bridge is named as Goshree Bridge. Adjacent to it there is a residential complex, Prestige Neptune's Courtyard.

East:

The site is facing towards east because the road that connecting to the site and it is of almost 18 m with 4 lane road and they have given cycle track and pedestrian pathway. There are also some tourist spots on this side.

South:

On the south side of the site is full of residential complexes that these are owned by the high class or upper-class people.

West:

This side has more attractive spots and views towards the lake and also toward the Lulu Grand Hyatt. And there a sunset point near the site.

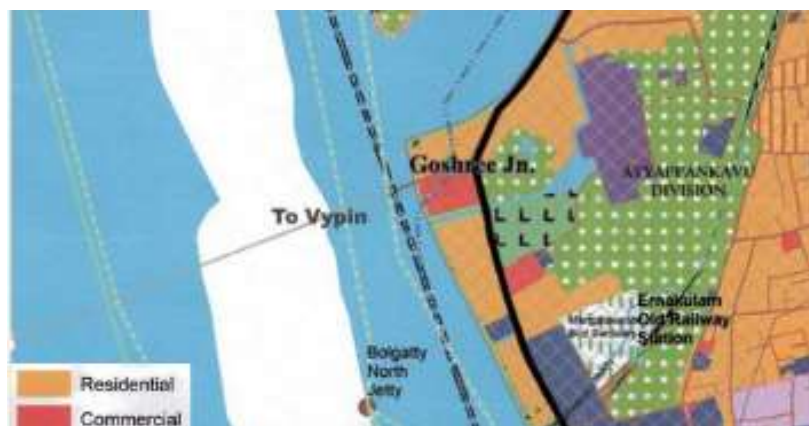


Figure 15; Existing land use map

4.1 SITE JUSTIFICATION

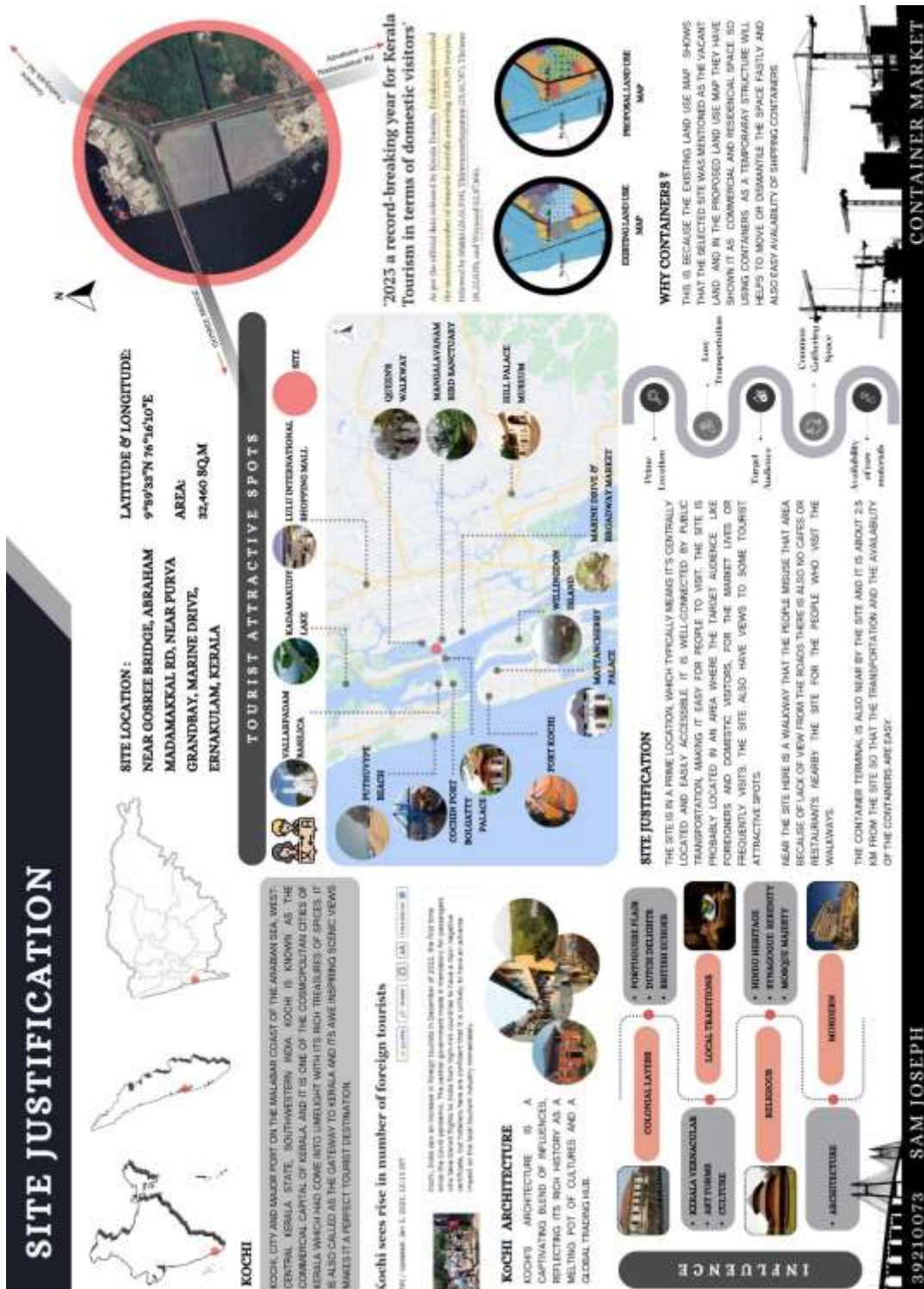


Plate 8; Site justification

4.2 SITE ANALYSIS

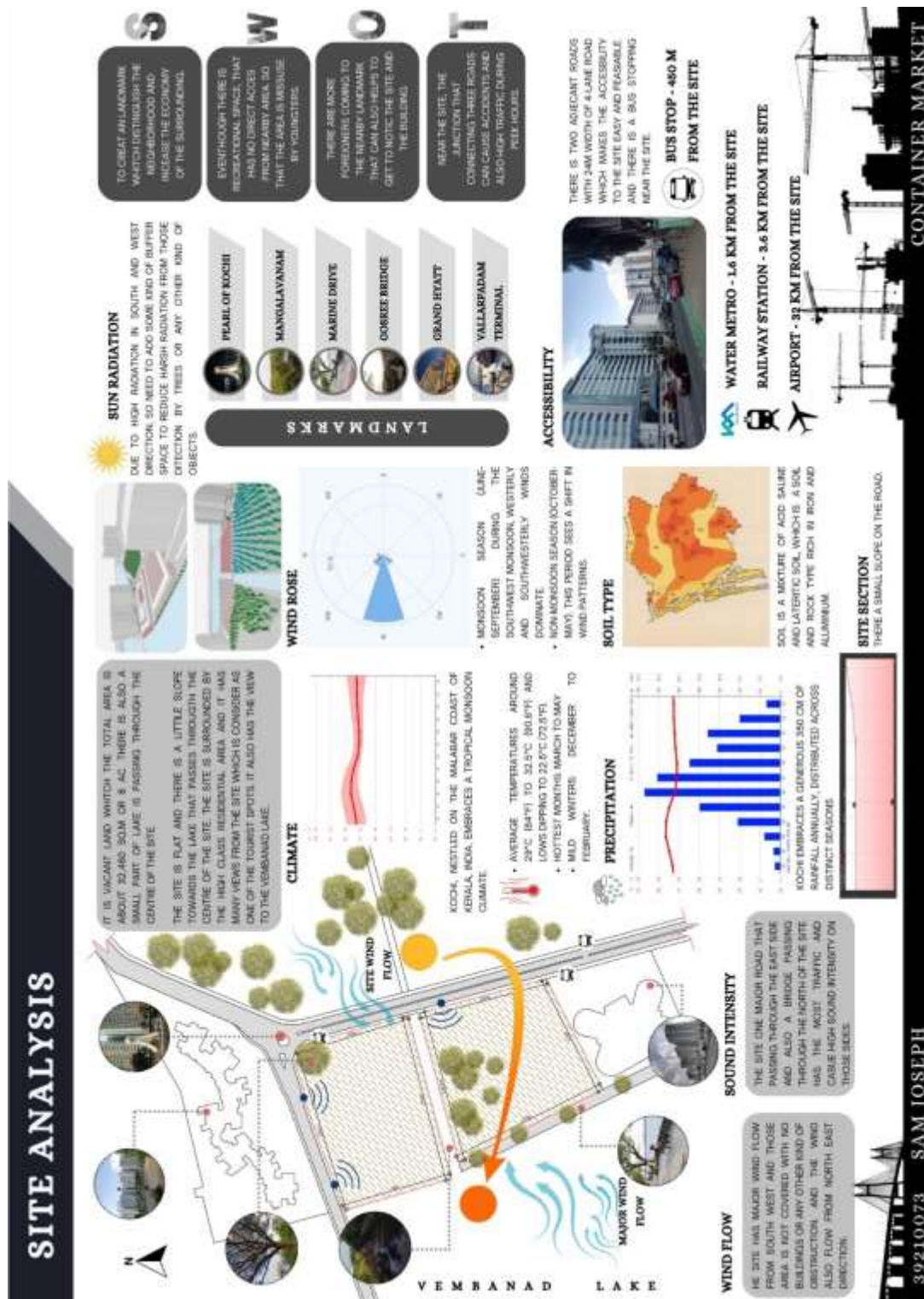
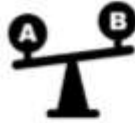


Plate 9; Site Analysis

CHAPTER 5: ARCHITECTURAL DESIGN

5.1 SPATIAL REQUIREMENTS



PROGRAM

ACCORDING TO ALL THESE PROJECTS INFERENCE AND THE STUDY OF THE ANTIQUE MARKET, THE PROGRAM HAS BEEN CONCLUDED.



AREA STATMENT

AREA STATEMENT IS ACCORDING TO THE NUMBER OF PEOPLES CAN USE THE SPACE, SO THE SPACE IS DESIGNED TO AROUND 600 TO 800 PEOPLE. ACCORDING TO ALL THESE PROJECTS INFERENCE AND THE STUDY OF THE ANTIQUE MARKET, THE AREA CAME INTO AN CONCLUSION OF THE SIMILAR SPACE THAT HAS GIVEN USING SHIPPING CONTAINERS AND THE USAGE OF SPACE.

THERE WILL BE CHANGE FROM THE PRESENT AREA STATEMENT BECAUSE THERE NEEDED TO ADD RESTROOMS AND OTHER SPACES LIKE OSR, ETC FOR THE FUTURE DEVELOPMENT.

SITE AREA:

32,460 SQ.M

BUILDUP AREA:

10,174 SQ.M

TYPOLGY	SPACE	UNIT AREA	NO. UNIT	AREA	TOTAL AREA
Retail and Entertainment area	Large shops	60	4	240	
	Medium shops	30	8	240	
	Small shops	15	10	150	
	Storage	30	1	30	
					660
Cafeteria	Administrative office	15	1	15	
	Dining area	200	4	1200	
	Food service area	60	4	240	
	Restroom	-	-	-	
	Storage area	30	5	150	
					1610
Antique Shop	Reception	30	1	30	
	Exhibition space	120	20	2400	
	Storage area	60	3	180	
					2610
Textile and Art galleries	Reception	30	1	30	
	Exhibition space	100	15	1500	
	Storage area	30	10	300	
	Workshop area	210	2	420	
					2250
Spice market	Administrative office	30	1	30	
	Stalls	15	20	300	
	Storage rooms	30	3	150	
					480
Outdoor spaces	Community space	90	10	900	
					900
Loading & Unloading Area		25	5	125	
					125
Studio rooms	Reception	20	4	80	
	Party	20	4	80	
	Workspace	75	4	300	
	Cabins	30	4	120	
	Meeting room-1	25	4	100	
	Meeting room-2	30	4	120	
	Reception	20	2	40	
	Party	20	2	40	
	Workspace	100	2	200	
	Cabins	60	2	180	
	Meeting room-1	30	2	60	
	Meeting room-2	40	2	80	
	Dining	200	1	200	
					1520
					10174

Figure 16; Area requirements

5.2 CONCEPT

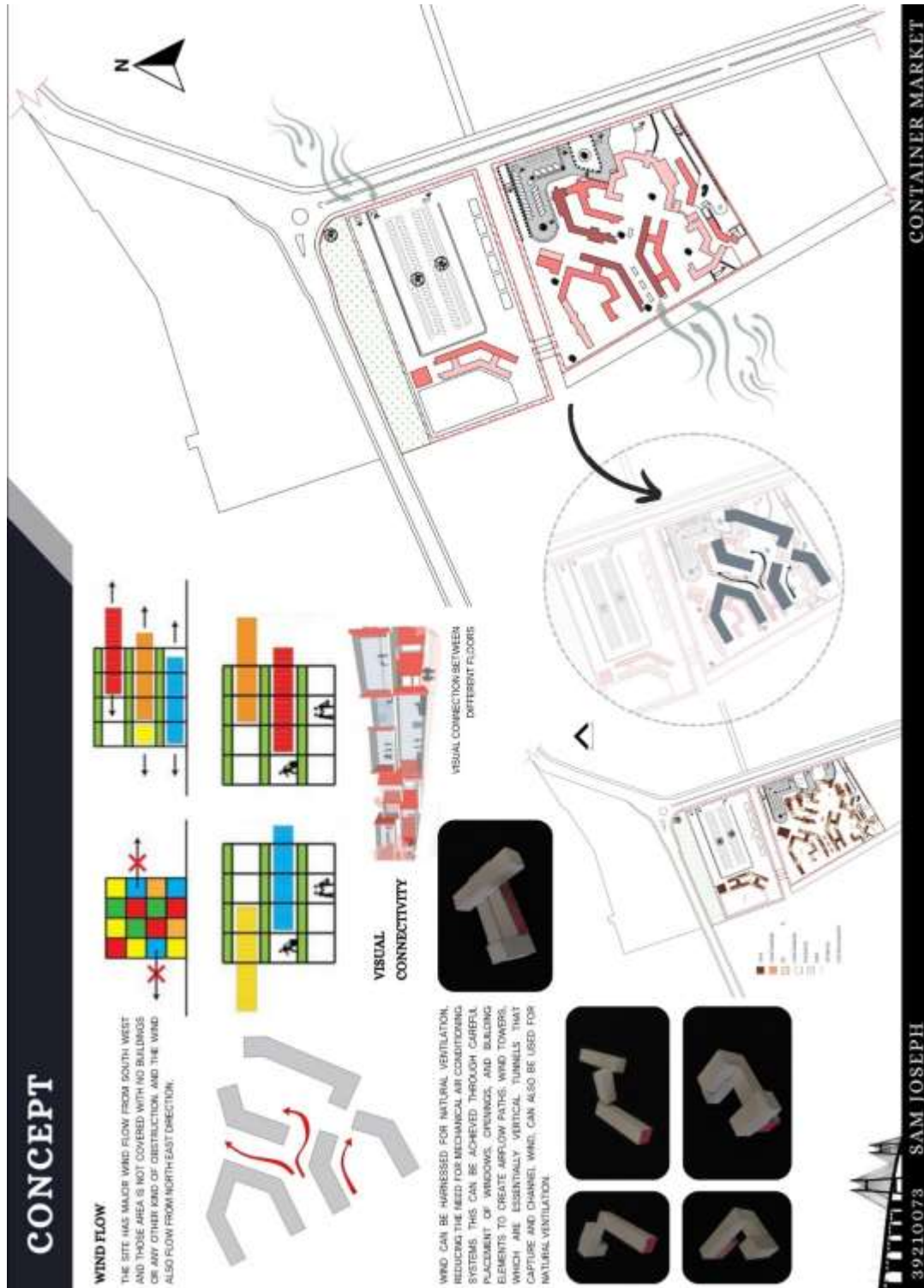


Plate 10; Concept sheet

5.3 ZONING



Plate 11; Site zoning 1

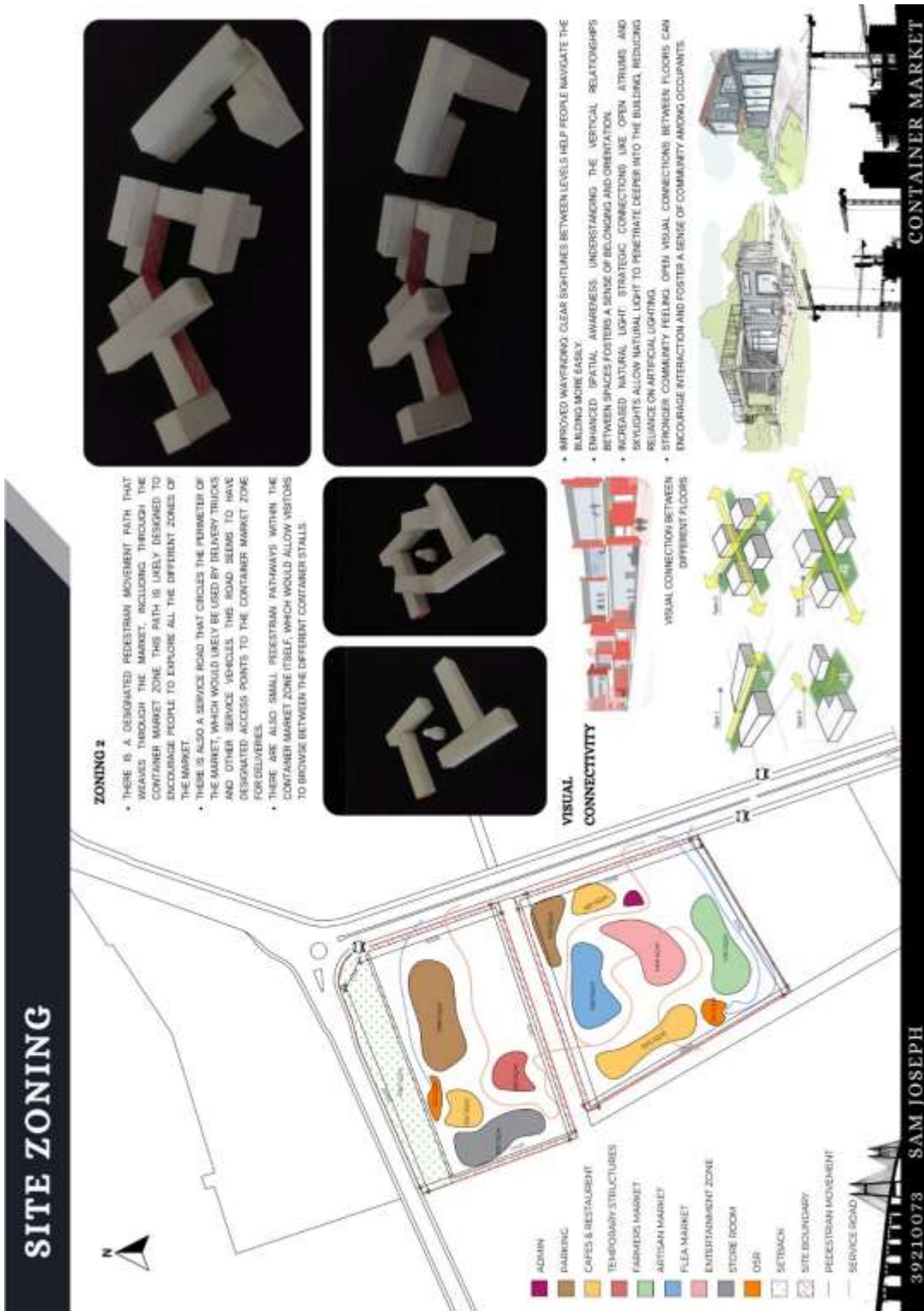


Plate 12; Site zoning 2

5.4 MASTER PLAN



Plate 13; Master plan of site

5.5 GROUND FLOOR PLAN

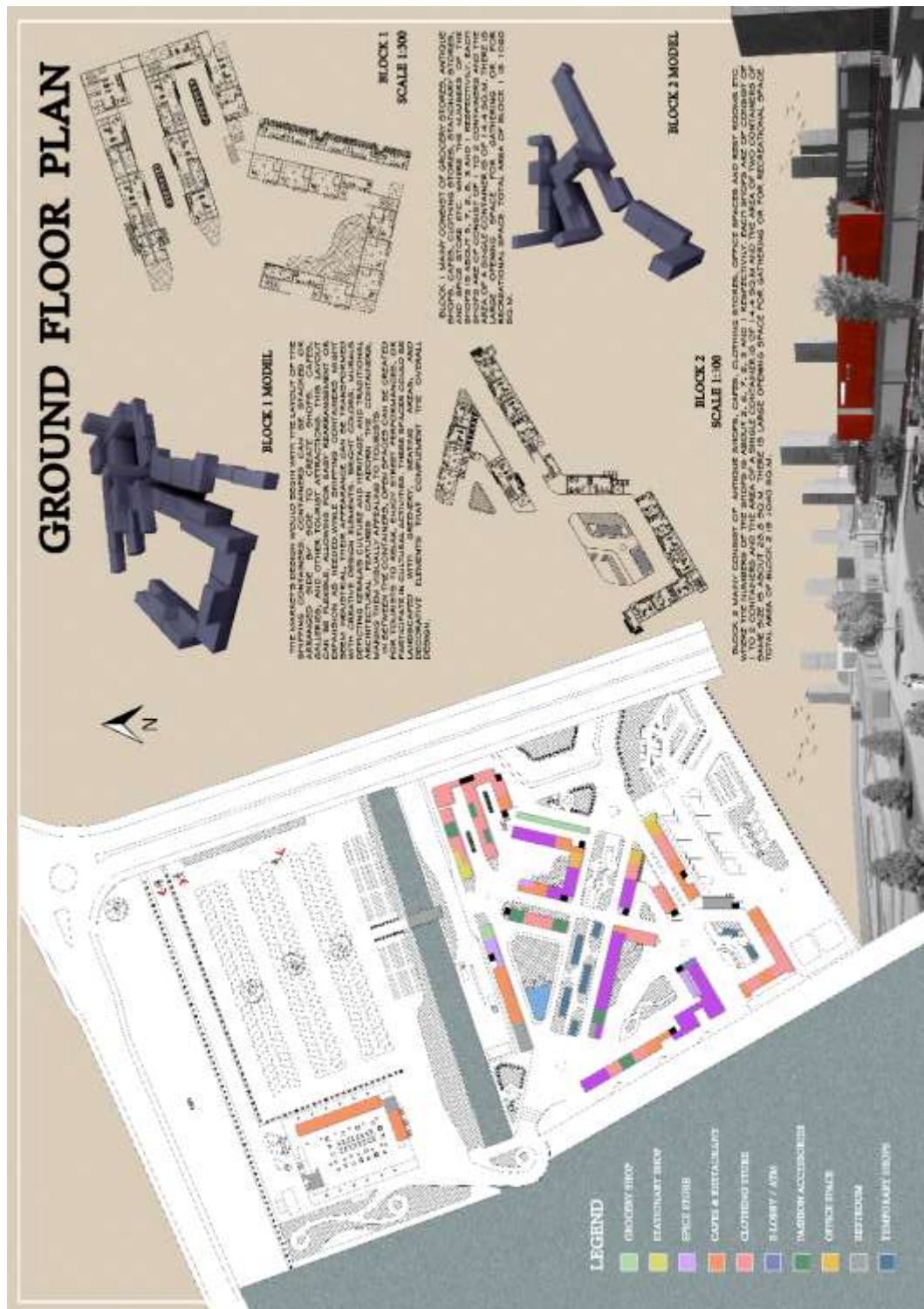


Plate 14; Grond floor plan of block 1 & 2



Plate 15; Ground floor plan of block 3 & 4

5.6 FIRST FLOOR PLAN

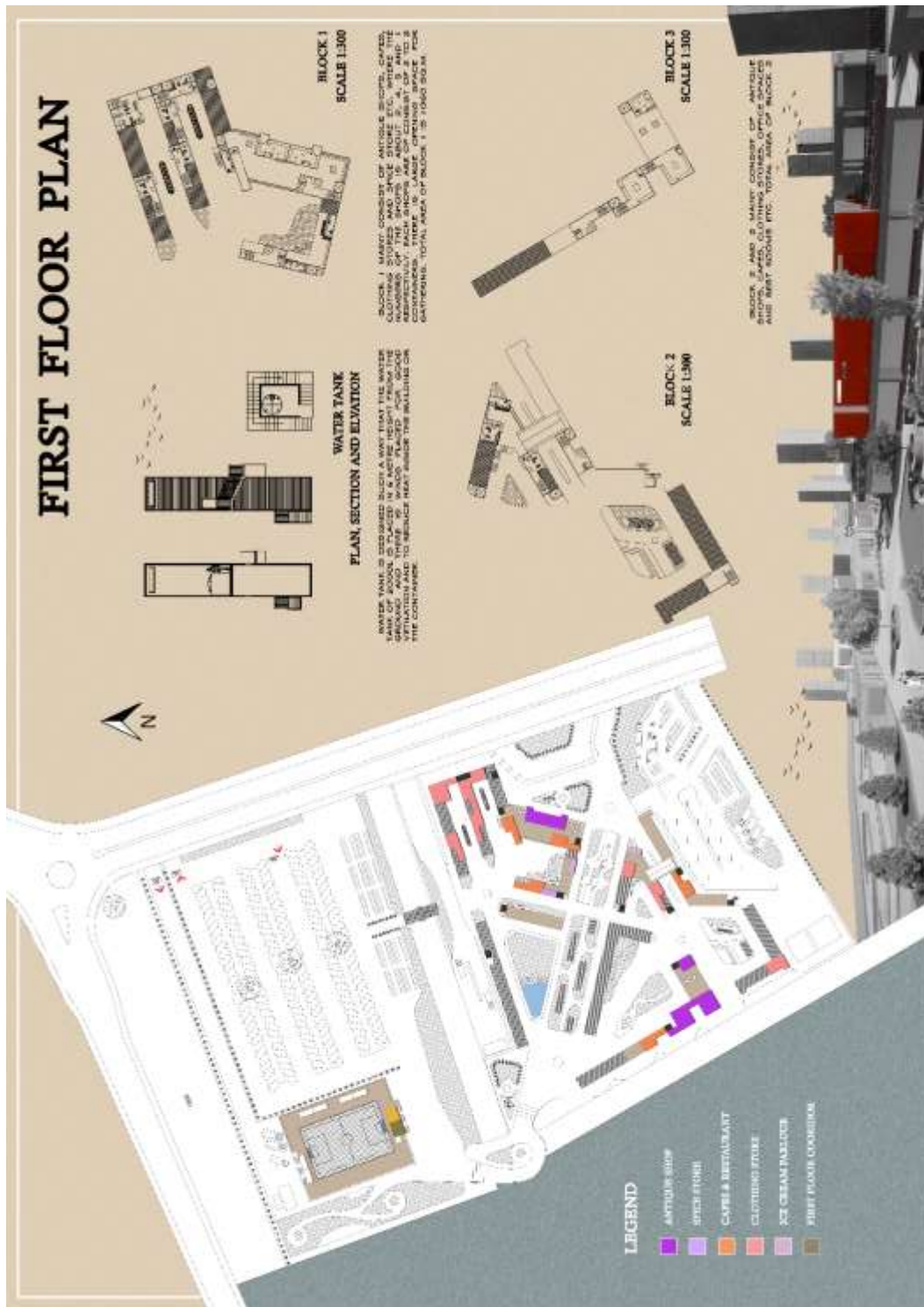


Plate 16; First floor plan

5.7 DETAIL STORE PLAN

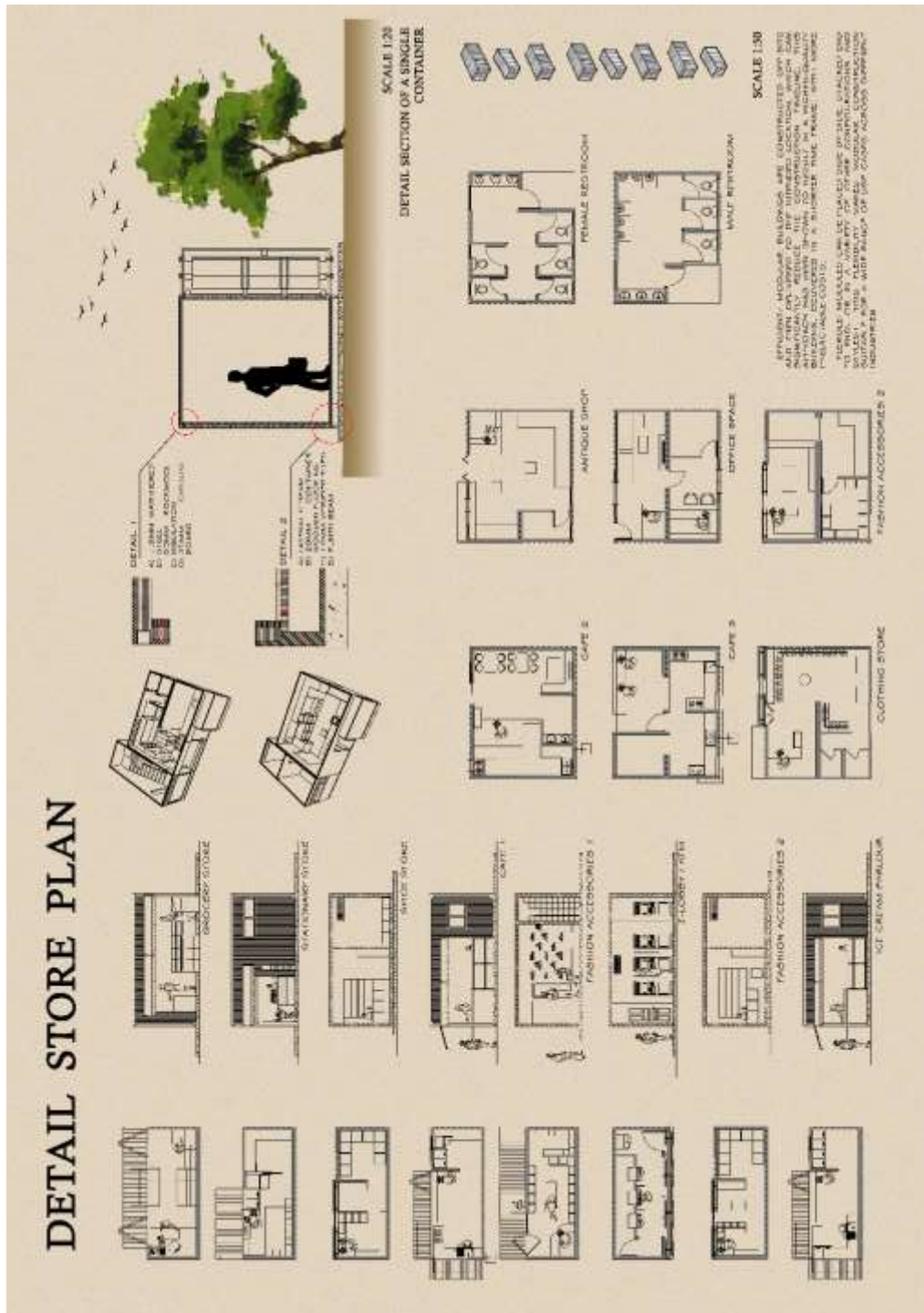


Plate 17; Store plan 1

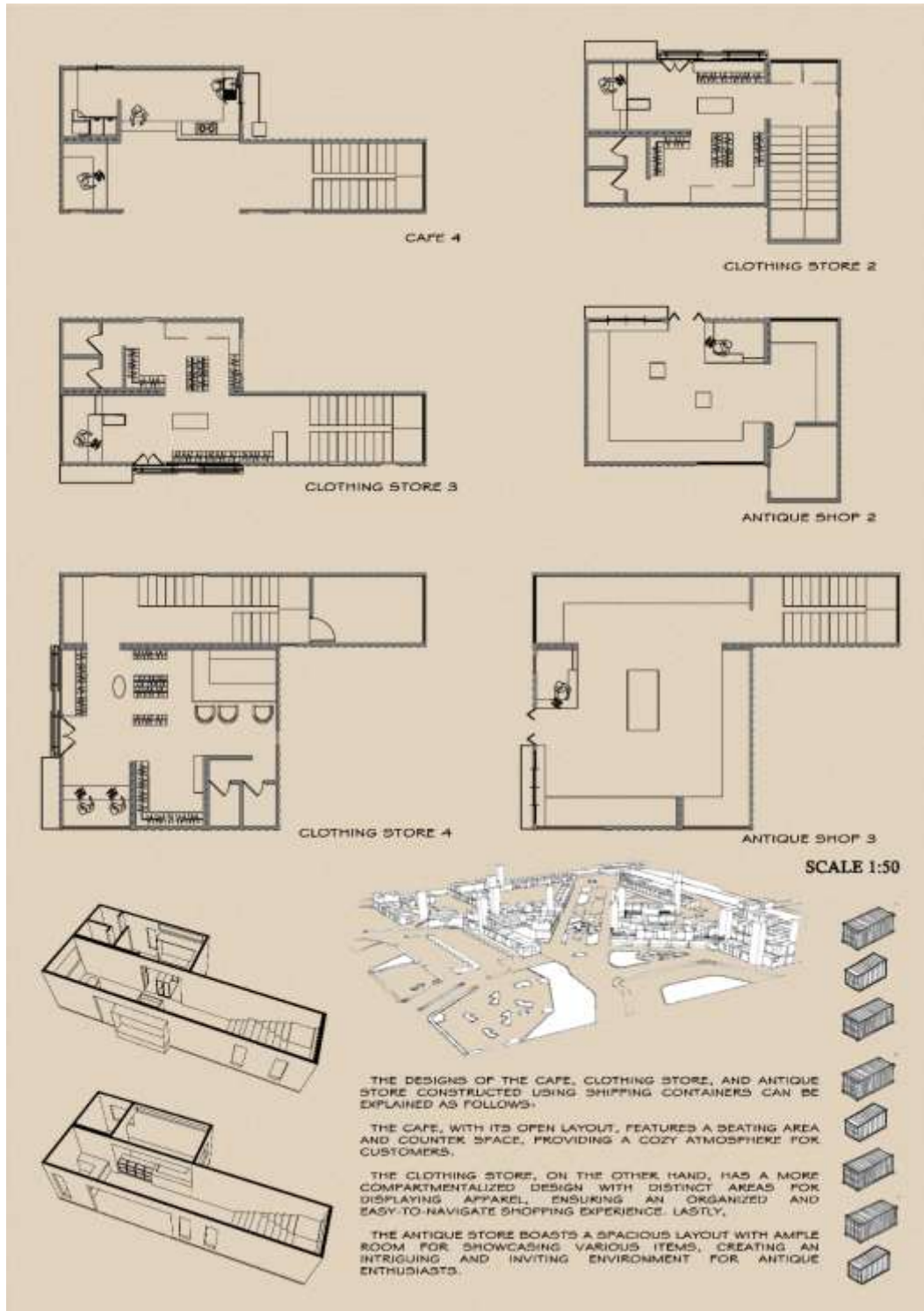


Plate 18; Store plan 2

5.8 BLOCK MODEL

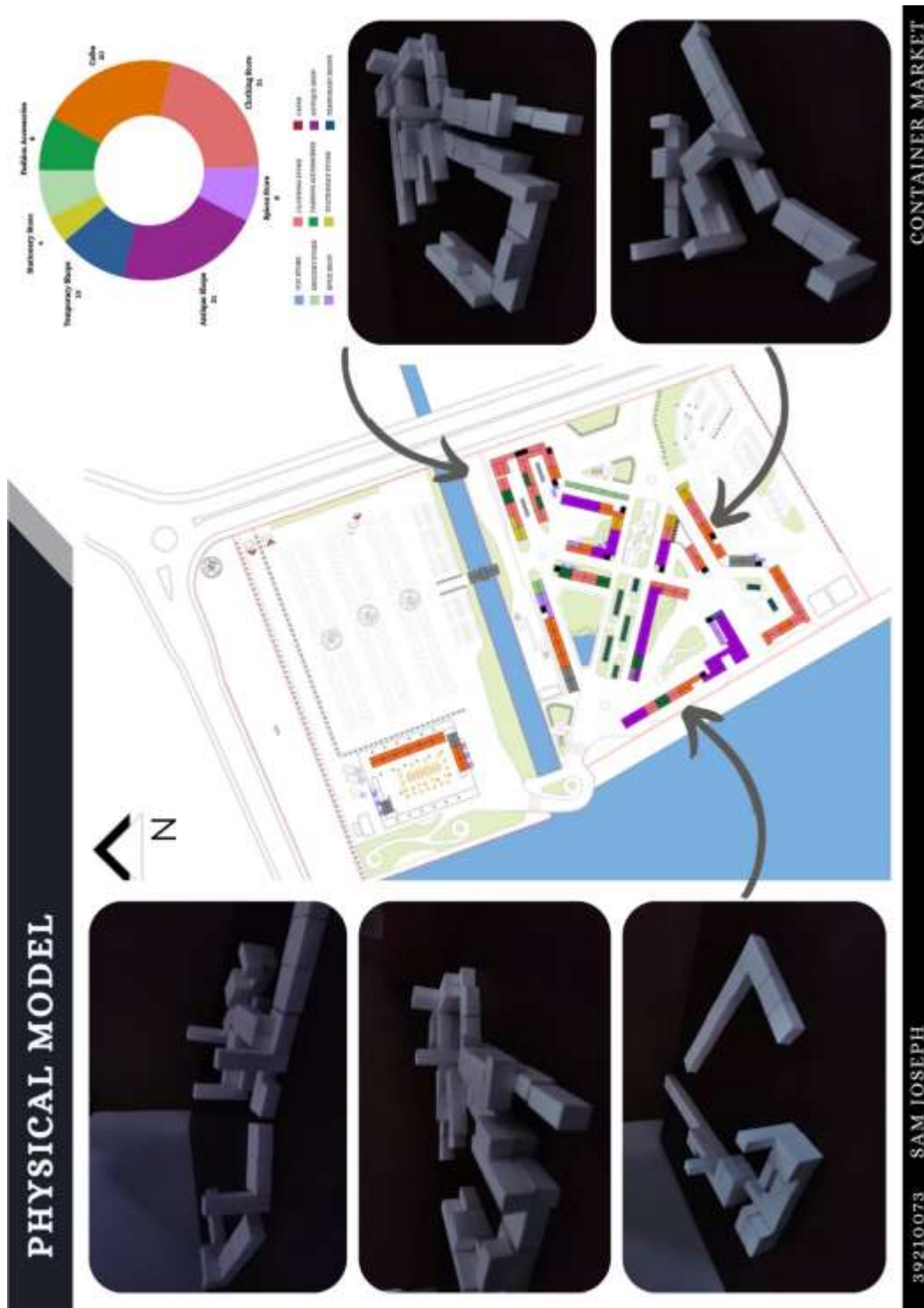


Plate 19; Physical model

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