

INTEGRATED DEVELOPMENT AND BEAUTIFICATION OF WARF ROAD CANAL IN KAKINADA



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HISTORY OF KAKINADA

- KAKINADA IS A CITY AND A MUNICIPAL CORPORATION IN THE INDIAN STATE OF ANDHRA PRADESH.
- IT IS LOCATED 465 KILOMETERS (289 MI) EAST OF THE STATE CAPITAL, HYDERABAD. IT IS ALSO THE HEADQUARTERS OF EAST GODAVARI DISTRICT.
- IT IS NICKNAMED 'FERTILIZER CITY' (OWING TO THE LARGE CONCENTRATION OF FERTILIZER PLANTS), 'PENSIONER'S PARADISE' AND 'SECOND MADRAS'.
- THE CITY HAD AN URBAN POPULATION OF 312,255 IN 2011, MAKING IT THE FOURTH LARGEST CITY BY AREA AND THE SIXTH LARGEST CITY BY POPULATION IN ANDHRA PRADESH.
- ITS URBAN/METROPOLITAN POPULATION IS 442,936 OF WHICH 217,573 ARE MALES AND 225,363 ARE FEMALES. THE SEX RATIO OF KAKINADA CITY IS 1046 PER 1000 MALES.
- IT IS SPREAD OVER AN AREA OF 90 KM. KAKINADA IS PART OF A SPECIAL ECONOMIC ZONE AND A PROPOSED 'PETROLEUM, CHEMICAL AND PETROCHEMICAL INVESTMENT REGION (PCPIR)'.
- IT IS A HUB TO ALL THE DEEP SEA EXPLORATORY ACTIVITY IN THE REGION DUE TO ITS DEEP-WATER SEA PORT AND ITS PROXIMITY TO THE GAS FIELDS.

HISTORY OF KAKINADA

DISTANCES TO OTHER CITIES IN AND AROUND ANDHRA PRADESH:

HYDERABAD : 500 KM

VIJAYAWADA : 210 KM

VISAKHAPATNAM : 160 KM

RAJAHMUNDRY : 60 KM

TIRUPATI : 600 KM

WARANGAL : 390 KM

DEMOGRAPHICS

AS OF 2011 CENSUS, KAKINADA MUNICIPALITY HAD A POPULATION OF 312,255 AND THE URBAN AGGLOMERATION HAD A POPULATION OF 442,936. THE SEX RATIO WAS 1046 FEMALES PER 1000 MALES AND 8.7% OF THE POPULATION WERE UNDER SIX YEARS OLD. EFFECTIVE LITERACY WAS 81.23%; MALE LITERACY WAS 84.88% AND FEMALE LITERACY WAS 77.76%.

WHAT IS THE NEED FOR CANAL/RIVER FRONT DEVELOPMENT PROJECT?

- TODAY MANY RIVERFRONTS ARE A STAPLE OF MODERNISM AND CITY BEAUTIFICATION.
- MINIMUM AVENUES FOR RECREATION AND OPEN GREEN SPACES.
- AFFECTS THE FEEL OF BELONGING, AND THE SOCIAL COHESION WITHIN A COMMUNITY.
- CITY IMAGE-BRANDING.
- OFTEN IN LARGER CITIES THAT BORDER A RIVER, THE RIVERFRONT WILL BE LINED WITH MARINAS, DOCKS, TREES, OR MINOR ATTRACTIONS.
- HISTORIC DOCUMENTATION
- RIVERINE TOURISM ON ITS BANKS,
- ALTERNATIVE MEAN OF TRANSPORTATION.
- HUMAN/ENVIRONMENTAL CONNECTIONS
- SUSTAINABILITY OF PLACE & MAINTENANCE OF RIVER BANK.

GENERAL PRINCIPLES FOR WATERFRONT DEVELOPMENT

WATERFRONT DEVELOPMENT PLANNING IS OFTEN GUIDED BY FOUR PRIORITIES: BALANCED LAND USE; RESPECT FOR LIMITED RESOURCES; IMPROVED PUBLIC ACCESS; AND SAFEGUARDS FOR ENVIRONMENTAL QUALITY.

THE GENERAL PRINCIPLES FOR WATERFRONT DEVELOPMENT ARE SET OUT BELOW:

A. INTERCONNECTED, LINEAR WATERFRONT DEVELOPMENT WITH BROAD PUBLIC ACCESS

- ENCOURAGING THE USE OF THE RIVERFRONT GREENWAY AS A DAILY COMMUTER PATH AND RECREATIONAL AMENITY.
- DEMONSTRATING THE CONNECTION BETWEEN ACCESS, GREENWAY DEVELOPMENT AND MARKET DEMAND.

GENERAL PRINCIPLES FOR WATERFRONT DEVELOPMENT

- CREATING A COHERENT, VISUALLY PLEASING ORDER TO THE WATER'S EDGE

B. PROTECTION AND ENHANCEMENT OF THE NATURAL RIVERFRONT ENVIRONMENT

- DOCUMENTING THE ECOLOGICAL STATE OF THE WATERFRONTS IN ORDER TO PRESERVE THIS ENVIRONMENTALLY DIVERSE NATURAL HABITAT.
- PREVENTING AND, WHERE POSSIBLE, ELIMINATING INAPPROPRIATE USES AND PRACTICES FROM THE RIVERS' EDGE.
- PROTECTING EXISTING NATURAL AREAS FROM DEVELOPMENT.

C. RECLAIM THE CITY'S IDENTITY AS ONE OF THE BEST WATER CITIES

- RAISING PUBLIC EXPECTATIONS OF WHAT THE CITY'S WATERFRONT OFFERS.
- ATTRACTING PEOPLE, INVESTMENT AND THE BEST ASPECTS OF URBAN LIVING TO THE WATERFRONT.

ADVANTAGES & BENEFITS OF WATERFRONT DEVELOPMENT

THE BENEFITS AND ADVANTAGES OF DEVELOPING WATER FRONT ARE MANIFOLD RANGING FROM ECONOMIC BENEFITS, ENVIRONMENTAL BENEFITS TO SOCIAL/ COMMUNITY BENEFITS. THESE BENEFITS ARE DETAILED BELOW.

- WITH THE DEVELOPMENT OF WATERFRONT THERE WOULD BE CREATION OF JOBS IN DEVELOPING THE FRONT, JOBS AS IT GIVES WAY TO STARTING UP OF A HOST OF COMMERCIAL ACTIVITIES IN THAT REGION AND ALSO INDIRECT JOB CREATION ASSOCIATED WITH THE SET OF ACTIVITIES.
- SOURCE OF REVENUE FOR GOVERNMENT – GOVERNMENT WOULD BE ABLE TO EARN REVENUE IN TERMS OF TAXES FROM THE COMMERCIAL ACTIVITIES IN THE REGION. THE COMMERCIAL ACTIVITIES INCLUDE SHOPS, RESTAURANTS, SPORT ACTIVITIES, TRANSPORTATION, BOATING ETC WHICH CAN BE LEASED OUT OR GIVING TO PRIVATE PLAYERS TO OPERATE.
- DEVELOPMENT OF TOURISM IN THE REGION – WITH THE DEVELOPMENT OF WATERFRONT THE TOURISM IN THE REGION CAN BE INCREASED BY OFFERING A VARIETY OF ATTRACTIONS LIKE WATER SPORTS, ENTERTAINMENT ARENAS, PARKS, SHOPPING AREAS, ETC.

- ECONOMIC SPIN-OFF'S — RISE IN THE VALUE OF PROPERTIES IN AND AROUND THE REGION, ACTING AS A CATALYST FOR REDEVELOPMENT AND RENEWAL OF NEARBY PLACES.
- HABITAT PROTECTION AND RESTORATION
 1. CONSERVATION OF WATER IN THE CANAL
 2. HUMAN/ENVIRONMENTAL CONNECTIONS
 3. CONSERVATION AND DEVELOPMENT OF LAND
 4. CONSERVATION OF FLORA AND FAUNA
- MAINTENANCE OF CANAL BANK.
- WATER CONSERVATION PRACTICES - DEVELOPMENT OF RIVERFRONT PROJECTS WOULD ENSURE A PROPER DESIGN OF PROJECTS IN CONSERVING RIVER AND MAINTENANCE OF RIVERS FLOWING THROUGH LARGE CITIES.
- BEAUTIFICATION OF THE WATERFRONT WITH A NATURAL OUTLOOK WILL PROVIDE THE GENERAL PUBLIC WITH AN OPEN SPACE FOR LEISURE AND RECREATION.
- PROVIDING EMPLOYMENT OPPORTUNITIES FOR NEARBY PEOPLE AND HELPING IN DEVELOPMENT OF REGION.
- ENCOURAGING RECREATIONAL ACTIVITIES LIKE WALKING, JOGGING, BIKING, SPORTS ACTIVITIES, ETC.
- IMPROVING QUALITY OF LIFE OF NEARBY COMMUNITY BY REVITALIZING THE NEIGHBORHOOD.

APPROACH TO THE STUDY

THE PROCESS FOR PLANNING WATERFRONT DEVELOPMENTS IN THE STATE WOULD NEED TO ESSENTIALLY INTEGRATE WITH THE OVERALL DEVELOPMENT OF THE CITY WHILE ENSURING A BALANCE BETWEEN THE NEEDS OF THE CITY WITH THOSE OF THE LOCAL COMMUNITY. THIS CHAPTER DISCUSSES THE OBJECTIVES OF THE STUDY AND THE APPROACH ADOPTED FOR UNDERTAKING THE STUDY.

STUDY OBJECTIVES

THE STUDY AREA FOR THE DEVELOPMENT OF WATERFRONT COVERS 2.5 KM STRETCH STARTING FROM INDRAPALEM JUNCTION TO NTR BRIDGE.

THE STUDY WOULD NEED TO ADDRESS THE FOLLOWING KEY OBJECTIVES:

- IDENTIFICATION OF PLACES WITH AVAILABLE WATERFRONTS WITHOUT ANY DISPUTES.
- PRIORITIZATION OF LOCATION FOR WATERFRONT DEVELOPMENT, BASED ON CERTAIN KEY CRITERIA
- SELECTION OF A PILOT PLOT FOR IMPLEMENTATION OF THE PROJECT
- PRELIMINARY PROJECT VIABILITY ANALYSIS FOR THE PILOT PROJECT
- REVIEW OF ACTS, LAWS AND LEGISLATIONS GOVERNING THE WATERFRONT DEVELOPMENT
- IDENTIFY OPTIONS FOR IMPLEMENTATION OF THE PROJECT WITH PRIVATE SECTOR PARTICIPATION

Step 1

- IDENTIFICATION OF ALL LAND POCKETS OF WATERFRONTS IN THE 2.5 KM STRETCH FROM INDRAPALEM JUNCTION TO NTR BRIDGE ,BASED ON SECONDARY DATA AND ANALYSIS OF MUNICIPAL/MRO RECORDS

Step 2

- PRIORITIZATION OF FIRST 10 LOCATIONS FOR FURTHER ANALYSIS BASED ON THE FOLLOWING CRITERIA
- GROWTH POTENTIAL OF THE CITY
- GOOD ACCESS AND CONNECTIVITY
- PROXIMITY TO TOURISM SITES SELECTION

Step 3

- FREQUENT SITE VISITS TO CANAL TO COLLECT THE REALISTIC FIELD DATA

Step 4

- DISCUSSIONS WITH OFFICIALS FROM VARIOUS AGENCIES SUCH AS
- DEPUTY COMMISSIONER OF MUNICIPAL CORPORATION, DEPARTMENT OF TOURISM, KAKINADA PORT DEVELOPMENT AUTHORITY ,IRRIGATION DEPARTMENT AND OTHER NGO'S ETC..
- URBAN DEVELOPMENT AUTHORITY, TOWN PLANNING DEPARTMENTS

Step 5

- PRELIMINARY FINANCIAL VIABILITY ANALYSIS
- REVIEW OF RELEVANT ACTS, LAWS & LEGISLATIONS PERTAINING TO WATERFRONT DEVELOPMENT

Step 6

- OPTIONS FOR IMPLEMENTATION ON PPP FRAMEWORKS BROAD CONTOURS OF THE PROJECT STRUCTURE

Step 7

- KEY ISSUES & WAY FORWARD

CONCESSION STRUCTURE

UNDER THIS STRUCTURE THE OWNERSHIP OF THE LAND WOULD ALWAYS VEST WITH THE CONCESSIONING AUTHORITY AND ONLY THE DEVELOPMENT RIGHTS WOULD BE GIVEN TO THE PRIVATE PARTNER (CONCESSIONAIRE). THE TWO OPTIONS THAT COULD BE DISCUSSED UNDER THE CONCESSION STRUCTURE ARE AS FOLLOWS:

OPTION 1: DEVELOPMENT (CONSTRUCTION, O & M) BY PRIVATE PARTNER HAVING CONCESSION PAYMENT AS BID PARAMETER

OPTION 2: DEVELOPMENT (CONSTRUCTION, O & M) BY PRIVATE PARTNER HAVING CONCESSION PERIOD AS BID PARAMETER THE INDICATIVE ROLES AND RESPONSIBILITIES OF BOTH THE CONCESSIONING AUTHORITY AND CONCESSIONAIRE WOULD BROADLY REMAIN THE SAME IN BOTH THE ABOVE OPTIONS MENTIONED. THE BID PARAMETERS IN TERMS OF PAYMENT TERMS AND CONCESSION PERIOD WOULD VARY.

THE ROLES AND RESPONSIBILITIES OF THE CONCESSIONING AUTHORITY

- HANDOVER PROJECT SITE FREE FROM ALL ENCUMBRANCES TO THE CONCESSIONAIRE AS SPECIFIED IN THE CONCESSION AGREEMENT
- SHIFTING OF ANY INFRASTRUCTURE UTILITY LINES SUCH AS ELECTRIC LINES, WATER LINES, DRAINAGE LINE, ETC (IF ANY)
- PROVIDE ALL THE COMMON INFRASTRUCTURE FACILITIES SUCH AS WATER, ELECTRICITY, SEWERAGE, ROADS, SUBWAYS, ETC THAT WOULD BE REQUIRED BY THE CONCESSIONAIRE FOR EFFICIENT IMPLEMENTATION OF THE PROJECT FACILITIES.
- CLEARLY SPELL OUT THE DESIGN AND CONSTRUCTION REQUIREMENTS OF THE MANDATORY PROJECT FACILITIES
- CLEARLY SPECIFY THE PROJECT COMPLETION PERIOD ALONG WITH MILE STONES AND PAYMENT TERMS
- ASSIST THE CONCESSIONAIRE IN OBTAINING ALL REQUIRED CLEARANCE FOR SETTING UP OF THE PROJECT FACILITIES

ROLES AND RESPONSIBILITIES OF THE CONCESSIONAIRE

THE ROLES AND RESPONSIBILITIES OF THE CONCESSIONAIRE ARE SET OUT BELOW.

- MOBILIZATION OF FUNDS REQUIRED FOR THE DEVELOPMENT OF THE PROJECT
- DESIGN, CONSTRUCT, IMPLEMENT, OPERATE AND MAINTAIN THE PROJECT FACILITIES AND REQUIRED SUPPORT FACILITIES LIKE THE SERVICE ROAD, PUBLIC CONVENIENCES, ETC AS SPECIFIED BY THE CONCESSIONING AUTHORITY
- OPERATION AND MAINTENANCE THE PROJECT FACILITIES AS PER THE STANDARDS SPECIFIED BY THE CONCESSIONING AUTHORITY
- PROMOTION OF THE PROJECT AS A DESTINATION
- COMPLETION OF THE PROJECT IN A TIMELY MANNER
- OBTAIN ALL NECESSARY CLEARANCES FROM THE GOVERNMENT FOR THE COMMISSIONING OF THE PROJECT.
- MAKE PAYMENTS TO THE CONCESSIONING AUTHORITY ON TIME AS SPECIFIED IN THE AGREEMENT.
- HANDOVER THE PROJECT SITE ALONG WITH PROJECT FACILITIES TO THE CONCESSIONING AUTHORITY ON COMPLETION OF THE CONCESSION PERIOD.
- CONCESSIONAIRE SHALL HAVE RIGHT TO COLLECT REVENUES FROM THE PROJECT FACILITIES

ACTS & LEGISLATIONS

VARIOUS STATE AND CENTRAL LEGISLATIONS/ ACTS GOVERNING THE DEVELOPMENT OF WATERFRONTS IN THE COUNTRY WOULD NEED TO BE REVIEWED AS A PART OF ESTABLISHING THE FEASIBILITY OF THE LOCATIONS IDENTIFIED FOR THE WATERFRONT DEVELOPMENT. A LIST OF SUCH LEGISLATIONS/ ACTS IS SET OUT BELOW.

CENTRAL LEGISLATIONS/ ACTS

THE LEGISLATIONS/ ACTS PERTAINING TO WATERFRONT DEVELOPMENT, FORMULATED BY THE CENTRE ARE AS FOLLOWS:

- A. INTER-STATE WATER DISPUTE ACT, 1956
- B. ENVIRONMENT (PROTECTION) ACT, 1986
- C. WATER RESOURCES PLANNING ACT, 1992
- D. WATER (PRESERVATION & CONTROL OF POLLUTION) ACT, 1974
- E. RIVER BOARDS ACT, 1956
- F. WATER ACT, 1974
- G. CENTRAL GROUND WATER BOARD ACT, 1997
- H. CENTRAL BOARD FOR THE PREVENTION AND CONTROL OF WATER POLLUTION (PROCEDURE FOR TRANSACTION OF BUSINESS) RULES, 1975
- I. WATER RULES, 1975

NATIONAL LAKE CONSERVATION PLAN

MINISTRY OF ENVIRONMENT AND FORESTS HAS BEEN IMPLEMENTING THE NATIONAL LAKE CONSERVATION PLAN (NLCP) SINCE 2001 FOR CONSERVATION AND MANAGEMENT OF POLLUTED AND DEGRADED LAKES IN URBAN AND SEMI-URBAN AREAS. THE MAJOR OBJECTIVES OF NLCP INCLUDE ENCOURAGING AND ASSISTING STATE GOVERNMENTS FOR SUSTAINABLE MANAGEMENT AND CONSERVATION OF LAKES. LAKES BEING MAJOR SOURCES OF ACCESSIBLE FRESH WATER REQUIRE WELL PLANNED, SUSTAINABLE AND SCIENTIFIC EFFORTS TO PREVENT THEIR DEGRADATION AND ULTIMATE DEATH. THE MAIN OBJECTIVES OF THE NATIONAL LAKE CONSERVATION PLAN ARE:

- PREVENTION OF POLLUTION FROM POINT AND NON-POINT SOURCES.
- TREATMENT OF CATCHMENT AREA.
- DE-SILTING AND WEED CONTROL.
- RESEARCH & DEVELOPMENT STUDIES ON FLORAL AND FAUNAL ACTIVITIES AND RELATED ECOLOGICAL ASPECTS.
- OTHER ACTIVITIES DEPENDING ON THE LAKE SPECIFIC CONDITIONS SUCH AS INTEGRATED DEVELOPMENT APPROACH, INCLUDING INTERFACE WITH HUMAN POPULATIONS.

THE ENVIRONMENT (PROTECTION) ACT, 1986 (EPA)

ACCORDING TO EPA, "ENVIRONMENT" INCLUDES WATER, AIR AND LAND AND THE INTER-RELATIONSHIP WHICH EXISTS AMONG AND BETWEEN WATER, AIR AND LAND, AND HUMAN BEINGS, OTHER LIVING CREATURES, PLANTS, MICRO-ORGANISM AND PROPERTY.

SECTION 3 OF THE EPA STATES, THAT CENTRAL GOVERNMENT SHALL HAVE THE POWER TO TAKE ALL SUCH MEASURES AS IT DEEMS NECESSARY OR EXPEDIENT FOR THE PURPOSE OF PROTECTING AND IMPROVING THE QUALITY OF THE ENVIRONMENT AND PREVENTING CONTROLLING AND ABATING ENVIRONMENTAL POLLUTION.

THE WATER (PREVENTION AND CONTROL OF POLLUTION) ACT, 1974

THE WATER (PREVENTION AND CONTROL OF POLLUTION) ACT, 1974 SUGGEST THAT ONLY STATE GOVERNMENTS CAN ENACT WATER POLLUTION LEGISLATION. ARTICLE 252 EMPOWERS PARLIAMENT TO ENACT LAWS ON STATE SUBJECTS FOR TWO OR MORE STATES, WHERE THE STATE LEGISLATURES HAVE CONSENTED TO SUCH LEGISLATION. UNDER THIS ACT, THE STATE BOARDS WERE VESTED WITH THE REGULATORY AUTHORITY AND WERE EMPOWERED TO ESTABLISH AND ENFORCE EFFLUENT STANDARDS FOR FACTORIES DISCHARGING POLLUTANTS INTO WATER BODIES. A CENTRAL BOARD PERFORMS THE SAME FUNCTIONS FOR UNION TERRITORIES AND COORDINATES ACTIVITIES AMONG THE STATES.

THE WATER (PREVENTION AND CONTROL OF POLLUTION) CESS ACT OF 1977

THE MAIN OBJECT OF THIS ACT IS TO MEET THE EXPENSES OF THE CENTRAL AND STATE WATER BOARDS.

ECONOMIC INCENTIVES ARE PROVIDED FOR CONTROL OF POLLUTION BY DIFFERENTIAL LEVY OF TAX STRUCTURE. THE LOCAL AUTHORITIES AND CERTAIN DESIGNATED INDUSTRIES ARE REQUIRED TO PAY A CESS FOR WATER CONSUMPTION. THE REVENUES ACCRUING THUS ARE IN TURN USED FOR IMPLEMENTATION OF THE WATER (PREVENTION AND CONTROL OF POLLUTION) ACT, 1977. THE CENTRAL GOVERNMENT, AFTER MAKING DEDUCTIONS FOR COLLECTION EXPENSES, PAYS THE CENTRAL BOARD AND THE STATES SUCH SUMS AS IT DEEMS NECESSARY TO ENFORCE THE PROVISIONS OF THE WATER (PREVENTION AND CONTROL OF POLLUTION) ACT, 1974. ON THE INSTALLATION OF EFFLUENT TREATMENT EQUIPMENT AND MEETING THE APPLICABLE NORMS THE POLLUTER IS ENTITLED TO GET A REBATE OF 25% ON APPLICABLE CESS.

INDICATIVE BID PROCESS

THE INDICATIVE BID PROCESS FOR THE PROJECT IS SET OUT BELOW.

- A COMPETITIVE TWO STAGE OR SINGLE STAGE BID PROCESS COULD BE FOLLOWED FOR THE SELECTION OF THE PRIVATE PARTNER (THE “BIDDER”)
- A TWO STAGE BID PROCESS COMPRISING OF QUALIFICATION STAGE AND PROPOSAL STAGE. THE PROPOSALS FROM INTERESTED BIDDERS ARE SOUGHT AT TWO STAGES. HOWEVER THE BIDDER WHO QUALIFIES THE QUALIFICATION STAGE WOULD ONLY BE QUALIFIED TO PROPOSAL STAGE.
 - (i) QUALIFICATION STAGE – REQUEST FOR QUALIFICATION DOCUMENT WOULD BE ISSUED TO INTERESTED BIDDERS
 - (ii) BIDDERS WHO QUALIFY IN RFQ STAGE WOULD BE ISSUED REQUEST FOR PROPOSAL DOCUMENT (RFP) ALONG WITH CONCESSION AGREEMENT.
- WHEREAS IN SINGLE STAGE – THE BIDDERS WOULD BE ISSUED A BID DOCUMENT WHICH WOULD COMPRISE OF QUALIFICATION STAGE AS WELL AS PROPOSAL STAGE
- A SINGLE STAGE BID PROCESS IS PREFERRED FOR THIS PROJECT AS TWO STAGE BID PROCESS TAKES MORE TIME AND IT BECOMES DIFFICULT TO SUSTAIN THE INTEREST OF THE BIDDERS FOR A LONGER TIME.
- A SINGLE STAGE BID PROCESS WITH THREE COVER SYSTEM IS RECOMMENDED FOR SUBMISSION OF BIDS WHICH WOULD INCLUDE:
 - SUBMISSION OF DOCUMENTS FOR SATISFYING THE RESPONSIVENESS OF THE BIDS AND MEETING THE QUALIFICATION CRITERION
 - SUBMISSION OF TECHNICAL BID
 - SUBMISSION OF FINANCIAL BID
- CONCESSION PERIOD COULD BE FOR A PERIOD OF 30 YEARS.

KEY ISSUES

WHILE MARKET DEMAND AND ECONOMIC FEASIBILITY OF THE WATERFRONT DEVELOPMENT ARE CRITICAL PARAMETERS TO TEST THE VIABILITY OF THE DEVELOPMENT CONCEPT, THE OTHER KEY ISSUES ASSOCIATED WITH WATERFRONT DEVELOPMENT ARE SET OUT BELOW.

POLICY / REGULATORY ENVIRONMENT

IF THE CITY WANTS TO ATTRACT THE HIGHEST QUALITY DEVELOPMENT, IT SHOULD BE THE EASIEST PART OF THE CITY TO DO BUSINESS. THE PROCESS AND POLICIES WOULD NEED TO BE MORE STREAMLINED.

REMOVING REGULATORY HURDLES FOR THE PROJECT IS ITSELF A BIG INCENTIVE FOR THE PRIVATE DEVELOPER. THERE NEEDS TO BE A STRICT MONITORING FRAMEWORK AND POLICY GUIDELINES FOR DEVELOPMENT ACTIVITIES ALONG THE WATERFRONT. THE GUIDELINES WOULD NEED TO TAKE INTO CONSIDERATION THE MASTER PLAN / CITY DEVELOPMENT PLAN AND MUST INTEGRATE INTO THE OVERALL DEVELOPMENT STRATEGIES AND UTILITY INVESTMENTS (SEWER, WATER, TELECOMMUNICATIONS) OF THE CITY.

LAND RECLAMATION

THE PATTERN OF EXISTING LAND USES, POTENTIAL FOR INCORPORATING NEW DEVELOPMENTS AND TECHNICAL ISSUES (PERTAINING TO RIVER HYDRAULICS AND EMBANKMENT DESIGN) NEED TO BE STUDIED FOR DETERMINING THE ALIGNMENT OF THE PROPOSED WATERFRONT AND THE EXTENT OF RECLAMATION TO BE CARRIED OUT.

LAND ACQUISITION & REHABILITATION

THE OWNERSHIP OF THE LAND AROUND THE WATERFRONT WOULD NEED TO BE STUDIED. IF THE LAND BELONGS TO PRIVATE OWNERS, THE SAME WOULD NEED TO BE PURCHASED FROM THEM AT THE TO PART WITH THEIR LAND. IN LIEU OF THE SAME, THE GOVERNMENT MAY NEED TO DESIGN ATTRACTIVE COMPENSATION PACKAGES AND NEGOTIATE WITH THE OWNERS TO ENSURE SMOOTH AND QUICK TRANSFER OF OWNERSHIP. IN CASE THE LAND IS OCCUPIED BY LEGAL/ ILLEGAL IMMIGRANTS, THEY WOULD NEED TO BE REHABILITATED BEFORE THE PROCESS OF WATERFRONT DEVELOPMENT CAN START.

REPLENISHING WATER

AT THE VERY LEAST, THROUGHOUT THE YEAR, A CERTAIN AMOUNT OF DEPTH OF WATER IN THE WATER SOURCE MUST BE MAINTAINED. IT WOULD BECOME NECESSARY TO REPLENISH SEEPAGE AND EVAPORATION LOSSES TO THE EXTENT THAT THE WATER DEPTH IS MAINTAINED. CONSTRUCTION OF EMBANKMENTS AND USE OF TREATED SEWAGE WATER COULD BE EXPLORED AS OPTIONS.

INFRASTRUCTURE

TO THE EXTENT THAT THE CITY CAN CREATE PLANNING CERTAINTY IN ZONING, TRANSPORTATION, AND PLANNING, THE EASIER IT WILL BE TO ATTRACT INVESTMENT. COMPLETING THESE EFFORTS AHEAD OF DEVELOPMENT IS IMPORTANT

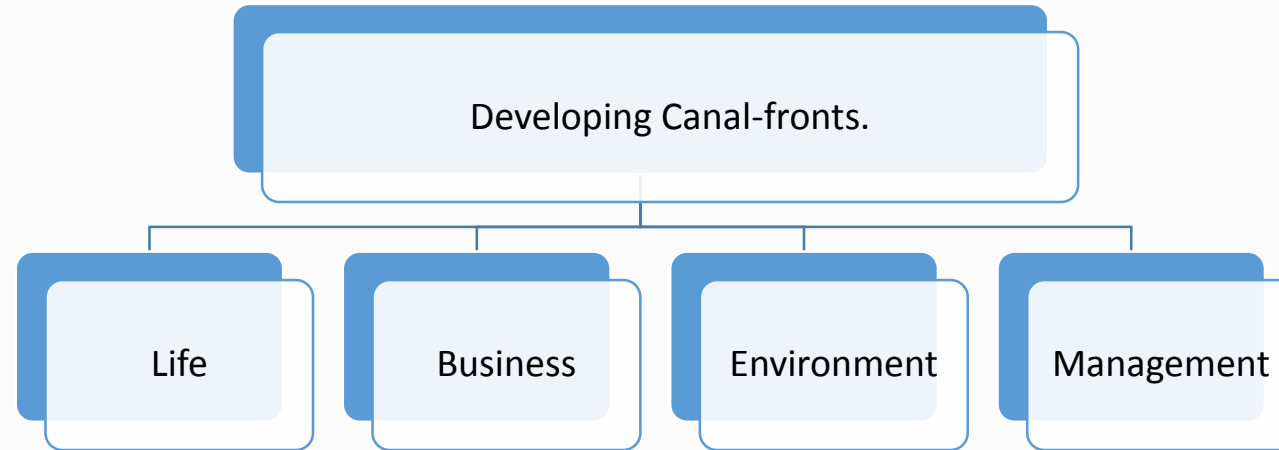
SURROUNDING AREAS

UNATTRACTIVE USES IN THE SURROUNDING AREA, SUCH AS A SOLID WASTE TRANSFER STATION, DUMPING YARD, ETC WOULD RESULT IN THE AREA LACKING A POSITIVE IMAGE THAT IS NECESSARY TO ATTRACT RESIDENTS AND HIGH-QUALITY COMMERCIAL USERS. TARGETED BLIGHT REMOVAL AND BEAUTIFICATION OF THE AREAS SURROUNDING THE WATERFRONT MAY BECOME NECESSARY SO AS TO CREATE A MORE RECEPTIVE CONTEXT FOR NEW INVESTMENT.

ENVIRONMENTAL ISSUES

THE PROPOSED WATERFRONT DEVELOPMENT WOULD NEED TO ARREST ENVIRONMENTAL POLLUTION AND CONTRIBUTE IN MAINTAINING A POLLUTION FREE ENVIRONMENT ALONGSIDE THE WATERFRONT. THE DEVELOPMENT MUST ENSURE EQUITABLE GROWTH WITHOUT COMPROMISING ON ENVIRONMENT SUSTAINABILITY ISSUES.

THEMES FOR DEVELOPING CANAL-FRONTS



ASPECTS FOR EVALUATING THE EFFICIENCY OF THE DEVELOPMENT OF THE CANAL-FRONT

Social congregation	<ol style="list-style-type: none">1-Presence of public- semi public and private spaces2-Public participation.3-Communal interaction
tourism/Cultural/Sports aspects	<ol style="list-style-type: none">1-Educational trips, school projects & Documenting the ecological state of the waterfronts in order to preserve this2-Awareness about , other emerging technologies (grey water recycling systems). environmentally diverse natural habitat.3-Facilities for offshore sports(fishing, boating, & jet skiing) & on Shore sports (Running, walking, bicycling, rollerblading, & jogging)4-Cultural nodes or landmarks and connecting networks between existing ones.
Aesthetic Aspects/ landscaping	<ol style="list-style-type: none">1-Landmarks.2-Levels.3-Elevations.4-contextual coherent.

OTHER CITIES AND THEIR WATERFRONTS

New York



London



Singapore



Shanghai



Mumbai



**THESE WATERFRONTS WERE DESIGNED AND
DEVELOPED AS MEANINGFUL PUBLIC SPACES FOR
ENHANCING LIFE IN THE CITY**

Sydney-1888



Sydney-1990



Newyork-1930



New York - 1995



Singapore - 1960



Singapore - 1994





WATERFRONT DEVELOPMENT INITIATIVES HAVE BEEN UNDERTAKEN SUCCESSFULLY IN MANY PLACES ACROSS THE WORLD, AND ARE INCREASINGLY BEING ATTEMPTED IN INDIA AS WELL. SOME SUCH INITIATIVES WHICH ARE IN THE PIPELINE OR HAVE ALREADY BEEN IMPLEMENTED ARE DESCRIBED BELOW:

SABARMATI RIVERFRONT DEVELOPMENT

AHMEDABAD, SEVENTH LARGEST POPULOUS CITY OF INDIA AND THE COMMERCIAL CAPITAL OF GUJARAT STATE HAS A UNIQUE IDENTITY RECOGNIZED BY THE RIVER SABARMATI. AHMEDABAD MUNICIPAL CORPORATION ESTABLISHED THE SABARMATI RIVER FRONT DEVELOPMENT CORPORATION LIMITED (SRFDCL) IN THE YEAR 1997 FOR THE DEVELOPMENT OF THE RIVERFRONT IN THE CITY. THE SRFDCL WAS PROVIDED WITH A SEED CAPITAL OF RS. 1 CRORE AND CHARGED WITH THE RESPONSIBILITY OF DEVELOPING THE SABARMATI RIVERFRONT.

A DETAILED PLAN IS BEING WORKED OUT ON THE DEVELOPMENT OF THE PROJECT AND IS IN THE PROCESS OF IMPLEMENTATION. THE PROPOSED DEVELOPMENT IS A MIX OF COMMERCIAL, RECREATIONAL AND RESIDENTIAL DEVELOPMENTS ALONG BOTH THE BANKS OF THE RIVER FROM GANDHI BRIDGE TO SARDAR BRIDGE. IT IS PROPOSED TO RECLAIM ABOUT 30 HECTARES OF LAND, OF WHICH A PART WOULD BE SOLD OR LEASED FOR COMMERCIAL DEVELOPMENT. THE PROPOSAL SHOWED THAT THE ENTIRE DEVELOPMENT COULD BE SELF-FINANCING.

THE MAJOR COMPONENTS OF THE PROJECT INCLUDE EMBANKMENT & RECLAMATION WORKS, CONSTRUCTION OF ROADS & INSTALLATION OF INFRASTRUCTURE SUCH AS WATER, SEWER NETWORK, STORM WATER DRAINAGE, ETC., RESETTLEMENT & REHABILITATION WORKS, CONSTRUCTION OF PROMENADES & GARDENS AND MAINTENANCE OF PUBLIC SPACES.

THE ESTIMATED COST OF THE PROJECT IS RS.361 CRORE WHICH IS INCLUSIVE OF INFLATION AND INTEREST COSTS. THE REVENUE EXPECTED FROM SALE OF RECLAIMED LAND IS APPROXIMATELY RS.1955 CRORE. THE CONSTRUCTION IS ASSUMED TO BE COMPLETED IN FIVE YEARS. THE SALE OF LAND IS CRUCIAL TO FINANCING THE PROJECT. THE SOURCES OF FUNDING FOR THE PROJECT ARE SET OUT BELOW:

- ***EQUITY CAPITAL*** – AMC HAS COMMITTED TO CAPITALIZE THE SRFDCL. TITLE TO THE LAND, WHICH IS TO BE CREATED AS A RESULT OF THE PROJECT WOULD BE VESTED IN SRFDCL



LOAN FUNDS— TO BRIDGE THE GAP BETWEEN THE EQUITY CAPITAL AVAILABLE AND THE CASH FLOW REQUIREMENTS OF THE PROJECT. THIS COULD INCLUDE COMMERCIAL BANK LOANS, SPECIAL INFRASTRUCTURE LOAN FUNDS, DIRECT BORROWING FROM THE CAPITAL MARKET THROUGH A SPECIAL BOND ISSUE

- ***PROCEEDS FROM LAND SALES***— WOULD COVER FULL COST OF THE PROJECT INCLUDING COST OF INTEREST PAID ON CONSTRUCTION PERIOD LOANS AND REPAYMENT OF EQUITY INVESTMENTS.

THE PROJECT COULD BE IMPLEMENTED BY HIRING IN-HOUSE STAFF, OR BY ENTERING INTO A PARTNERSHIP WITH A REAL ESTATE DEVELOPMENT FIRM OR BY CONTRACTING OUT THE DEVELOPMENT AND O&M OF SERVICES TO A PRIVATE CONTRACTOR.





As a place for the poor to build their hutments

Rehabilitation of Slum Dwellers

There were nearly 12000 hutments on both banks of the river occupying nearly 20 per cent of the critical project area. A committee was formed under an ex-High Court Judge for finalization of beneficiaries and a Comprehensive Settlement was arrived at under the supervision of the hon'ble Gujarat High Court. More than 10000 families have already been allotted houses for resettlement. 9078 odd families have already been shifted and the remaining is under the process. Of the total allotments, 6 were Christian, 3874 were Muslims and 5198 were Hindus. Each house is of 26.77 sq m carpet area. They were provided with a playing area for kids along with recreation facility. Normally, such relocations of slums usually happen in far-off outskirts areas of the city, whereas in this case the resettlement areas were very much in the prime locations in the city. Current market value of these houses is in the range of INR 10 to 25 Lakhs.

Since a river is treated as the mother in India, it was decided to empower the women in this rehabilitation project by allocating the house in the name of the woman member or in joint name.



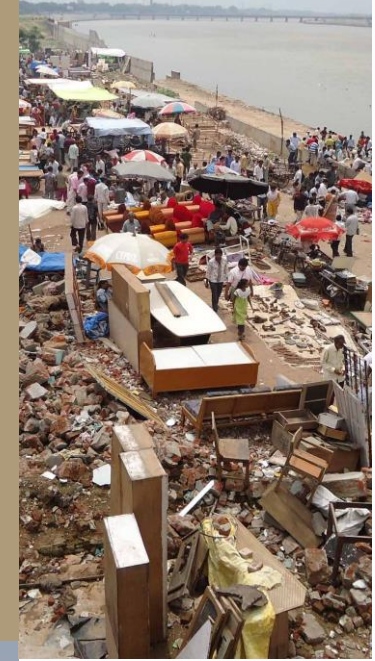
Now

Gujari Bazaar - Sunday Market

Gujari Bazaar is an age old Sunday Market, where women traders comprise close to 40 per cent and half of these describe themselves as Dalits. The bazaar provides livelihood for an estimated 200,000 lower-income residents, through a complex regional chain of artisan entrepreneurs, home workers, mechanics, technicians and small traders. It used to operate near Ellis Bridge on the Riverfront without any infrastructure and used to spill out on the adjoining approach road. It was unhygienic and subjected to risk of flooding during monsoons. Now, it has become the first well developed informal market in India. A MoU was signed between the Ahmedshah Gurjari Association and Sabarmati riverfront Development Corporation. Out of 1200 members of association, 726 members (60.5%) are Hindus and 474 members (39.5%) are Muslims.

Today it is spread over 70,000 sq.mt and 1600 vendors can do their business on 778 pucca platforms and 783 laris. Adequate parking space is provided for 280 two wheelers, 425 four wheelers (1700 two wheelers) and 8 no's of heavy vehicles. More than 200 street lights have been provided in this Market and 800 trees have been planted. Also other basic facilities like toilets, food-court, drinking water, and seating area have been provided. With this unique rehabilitation exercise, the litigation and the stay order from the High Court could also be vacated to pave way for the new initiative.

Before



Now



Dhobi Ghat

There were nearly 172 Dhobis using both the banks of the river for washing activities. They were relocated into the Dhobi ghat (laundry campus), which is constructed on the eastern bank of the River near Vasna Barrage.

There are 7 blocks in the Modern Dhobi Ghat and each block is having 24 units i.e. 168 units. Well developed water supply and drainage system has been provided with water meter for inlet watering. Washer men can dry washed cloths on the top floor of the area provided to him. Facility has been provided to use pulley to take the washed cloths to top floor.

This modern Dhobi Ghat spread over approx. 9400 sq.mt area has an utility area of about 6000 Sq.mt. Internal RCC road, adequate lighting and parking facility are provided along with compound wall and providing security to washmen's stuff.

Now



Before

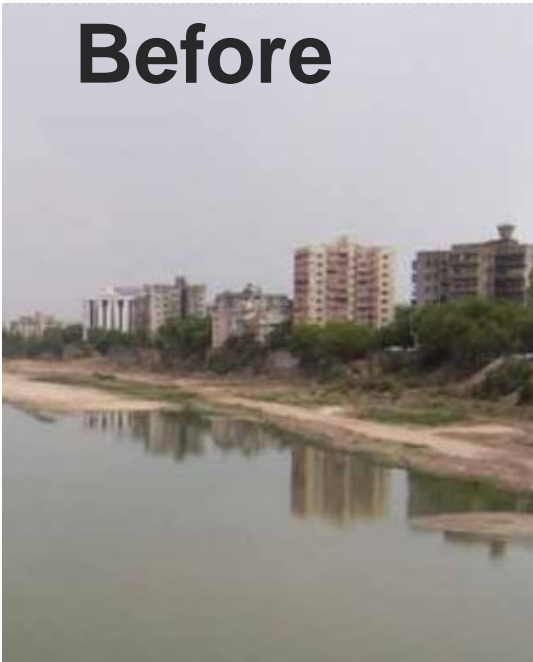


Event Area

A mega city like Ahmedabad requires a proper event management ground equipped with modern facilities for hosting mega events. Hence an area of 60,000 sq mt, spread between Sardar Bridge and Ellis Bridge on the West Bank has been designated for hosting such events like the Kite festival, the Marathon, the Cyclothon, and Garib Kalyan Mela(for the urban poor) are organized.

Earlier the dry river bed was used to host events like circus and cricket etc. But, now the redeveloped riverfront provides unique opportunities to host mega events.





Before

Urban Forestry

This unique afforestation project is spread over 1 lakh sq mt, is situated between Vasna Barrage and Ambedkar Bridge. Natural forestry is being developed with different plant species from Gujarat, including certain very rare species.

This garden comes with a mediation area as well and provides the citizens an escape into vast greenery in the midst of a sprawling metropolis.



Now

Sewage System

An interceptor sewer system was constructed on both the banks of the river to intercept the sewer running into the river and divert it to the treatment plants.

The sewage from drainage points used to fall directly into the river earlier, making the water dirty, mosquito ridden and creating a unhealthy environment. All sewage now goes to pumping stations, leading to transformation in river quality, and drastic improvement in the environment around the river.



Before

A few drains brought sewage into river

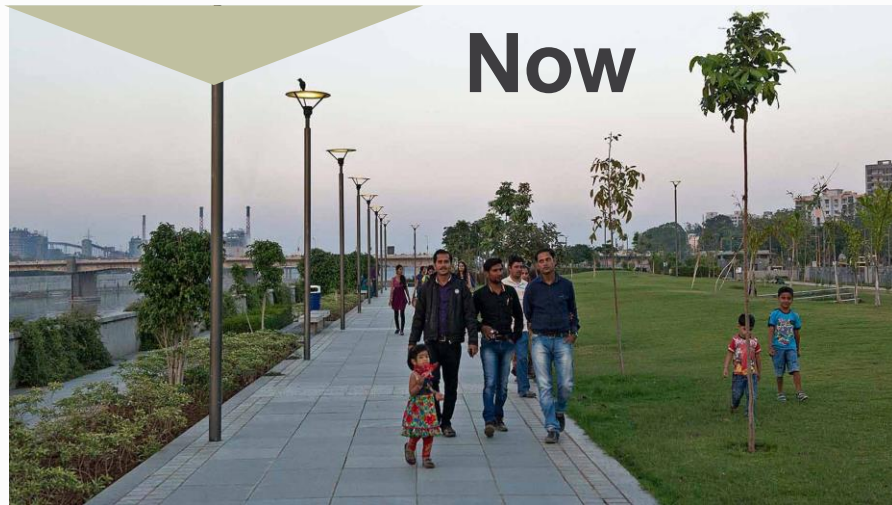


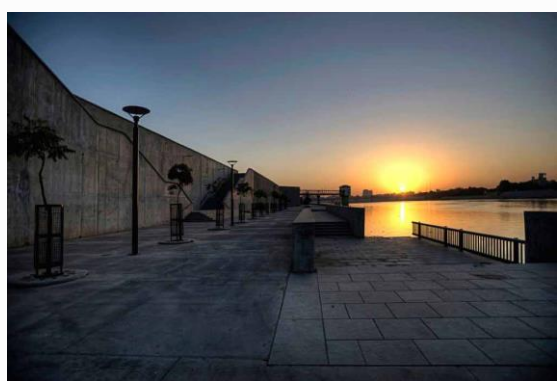
Now

Public Gardens/ Flower Garden

27 per cent of project land is being developed for parks and garden space for cultural facilities. There are 3 gardens. One garden of 60000 Sq mt, between Subhash Bridge and Dadhichi Bridge on east bank and another Garden of 25000 sq mt at Usmanpura between Gandhi Bridge and Nehru Bridge on west bank have already been open to public.

There will be a flower garden near the event area spread over 40,000 sq mt. It will be on west bank of the river.





SOUTH DELHI GREENWAY

SOUTH DELHI GREENWAY IS A CONCEPT INSPIRED BY SEVERAL THEME PARKS ABROAD. A PROPOSAL HAS BEEN SUBMITTED BY OASIS COMPANY TO THE GOVERNMENT - CONVERTING THE SOUTH DELHI DRAIN INTO A BEAUTIFUL GREENWAY-CUM-RECREATIONAL CORRIDOR THAT MAY WELL BE A STAR TOURIST ATTRACTION IN FUTURE. THE PROJECT LOOKS AT BIOLOGICALLY TREATING THE FOUL SMELLING, NONMONSOON SEWAGE THAT FLOWS THROUGH NALAS AND RECYCLE AND USE THE TREATED WASTE FOR LANDSCAPE IRRIGATION AND GROUNDWATER RECHARGE. IT IS PROPOSED THAT NALAS WOULD BE BEAUTIFIED WITH PROPER LANDSCAPING AND ESTABLISHMENT OF

‘GREENWAY’ – AN ECO-CORRIDOR OR A NATURE TRAIL ALONG THE ROUTE.

THE GREENWAY IS ALSO GOING TO HAVE 5 OF ITS OWN DESTINATIONS – THEME ATTRACTIONS

- A. FASHION CREEK AT LODHI ROAD
- B. CANAL BAZAR AT ANDREWS GANJ
- C. BIRD & BUTTERFLY AVIARY AT PANCHSHEEL ENCLAVE
- D. STREAMWALK AT SHEIKH SARAI
- E. AQUATIC ECOLOGICAL PARK AND UNDERWATER WORLD AT SATPULA



HUSSAIN SAGAR LAKE DEVELOPMENT, HYDERABAD

HUSSAIN SAGAR LAKE IN THE CITY OF HYDERABAD IS NOW A MAJOR TOURIST ATTRACTION IN THE CITY. THE LAKE WAS SOURCE OF WATER FOR THE TWIN CITIES OF HYDERABAD AND SECUNDRABAD BUT THE CONDITION OF LAKE DETERIORATED AND GOT POLLUTED DUE TO INDUSTRIALIZATION AND IMMERSION OF GANESH IDOL DURING GANESH CHATURTHI. IT WAS THE HUDA – HYDERABAD URBAN DEVELOPMENT AUTHORITY WHICH CAME FORWARD FOR THE CONSERVATION OF THE LAKE AND TURNING IT TO A TOURIST ATTRACTION. OVER A PERIOD OF TIME HUSSAIN SAGAR LAKE HAS GOT A LOT OF ATTRACTIONS DRIVING LOCAL AND TOURISTS TO VISIT THE PLACE.





THE SURROUNDINGS OF LAKE HAS AESTHETICALLY BUILT TELANGANA SECRETARIAT BUILDINGS, NTR MEMORIAL, LUMBINI PARK, PRASADS IMAX, HYDERABAD BOAT CLUB, SRI VENKATESWARA TEMPLE (BIRLA MANDIR), TELUGU THALLI FLYOVER, SECUNDERABAD SAILING CLUB, SANJEEVAIAH PARK, HOTEL MARRIOTT AND HAZRAT SAIDANI MA SAHEBA. LUMBINI PARK FEATURES A MUSICAL FOUNTAIN AND WELL LANDSCAPED GARDEN, NTR GARDENS ON THE NECKLACE ROAD IS A GOOD PLACE TO HANGOUT IN THE EVENINGS FOR THE YOUNG AS WELL AS THE OLD. NECKLACE ROAD HAS BEEN OPENED TO PUBLIC WHICH PASSES ROUND THE HUSSAIN SAGAR LAKE. "EAT STREET", A PLACE WITH SEVERAL EATERY OUTLETS, HAS BEEN BUILT ON THE BANKS OF THE LAKE

KOLKATA

AN AMBITIOUS RIVERFRONT DEVELOPMENT PROJECT HAS BEEN DRAWING MANY VISITORS IN KOLKATA. THE MILLENNIUM PARK RUNS ALONG STRAND ROAD, FOR A KILOMETER ON THE EASTERN BANK OF THE HOOGHLY RIVER AND HAS BEEN A SUCCESSFUL ATTEMPT TO BRING IT BACK TO THE FOREFRONT OF THE CITY'S LANDSCAPE.



TWO SECTIONS OF THE PARK, STRETCHING OVER 750 M, WERE OPENED TO THE PUBLIC ON JANUARY 1, 2000, WHILE THE FINAL SECTION, 300 M IN LENGTH, WAS MADE ACCESSIBLE TO PUBLIC ON JANUARY 1, 2006. ATTRACTIONS ON THE RIVERFRONT ARE: LILY POOLS, HERBAL AND COSMETIC GARDENS, FOOD KIOSKS, AN AMPHITHEATER, A PROMENADE, AMUSEMENT RIDES AND A CHILDREN'S PARK. AN ADDED ATTRACTION IS THE ACCESS TO THE SILVER JET JETTY AND FAIRLIE JETTY FOR THOSE WHO FANCY A BOAT RIDE. IN ADDITION, KOLKATA MUNICIPAL DEVELOPMENT AUTHORITY ORGANIZES FESTIVALS, WITH MUSICIANS AND ACTORS PERFORMING AT THE AMPHITHEATER.

DESIGN ANALYSIS FOR KAKINADA- WARF ROAD CANAL



10/26/2015

Kakinada - 2015

INDRA PALEM JUNCTION

40

Kasim St

NH 214

NH 214

Dugirala Vari St

Majestic St

Ganjam Vari St

Cinema Rd

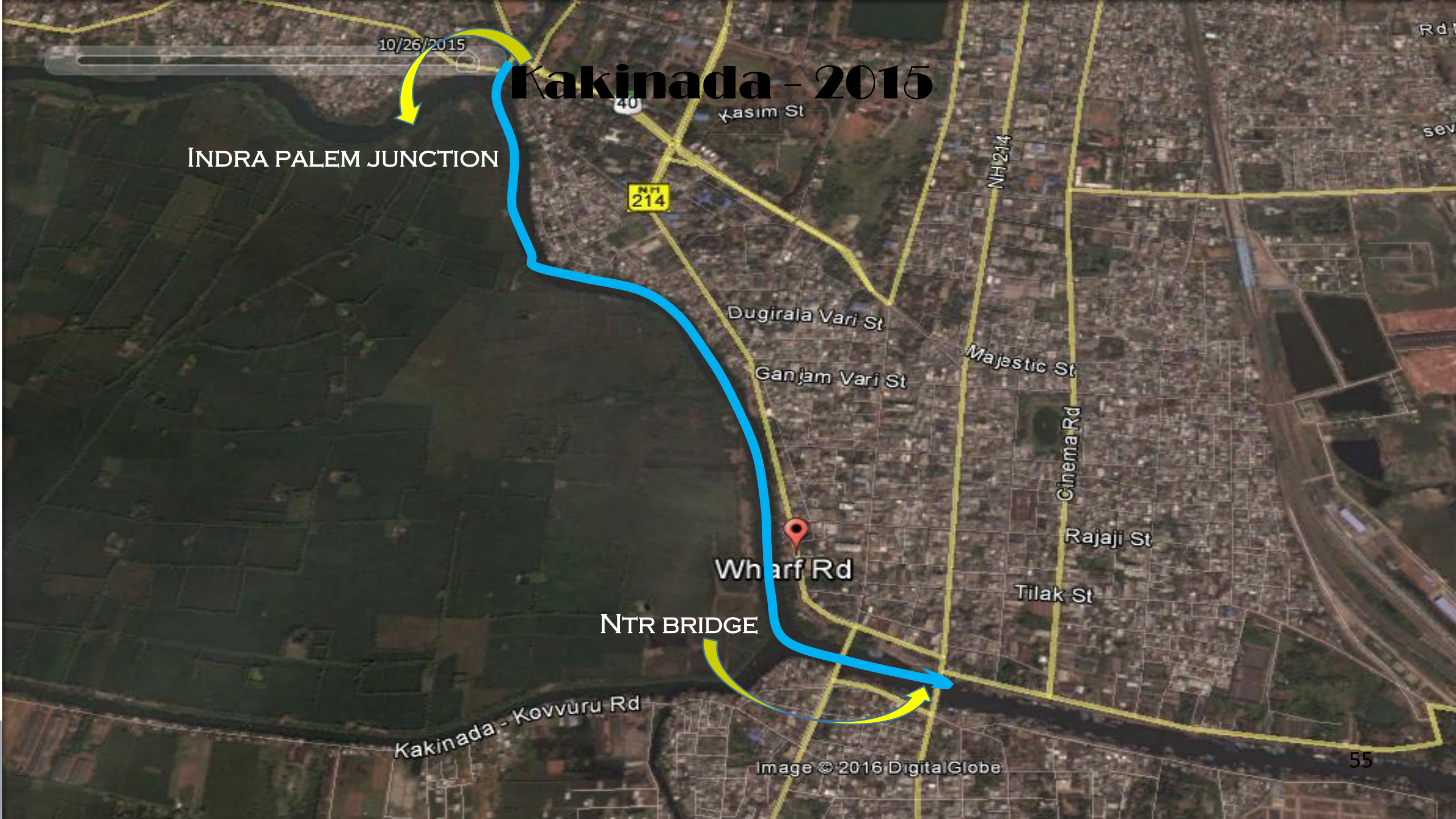
Rajaji St

Wharf Rd

Tilak St

NTR BRIDGE

Kakinada - Kovvuru Rd



MAIN AIM AND OBJECTIVES

The project aims to create a thriving, people-centric network of parks, waterside promenades, markets, cultural and recreational facilities on the city of Kakinada, making the city's riverfront a public asset.

- THE PROJECT CONSISTS OF DEVELOPMENT OF COMMERCIAL CENTRES, FOOD COURTS, ETHNIC RESTAURANTS, RESORTS ,SPA ,SAILING CLUB JOGGING/CYCLING TRACKS ETC..
- BOATING STATIONS IN THE CANAL ENABLE WATER RECREATION AND OFFER A WATER-BASED MODE OF PUBLIC TRANSPORT IN THE FUTURE.
- IN ADDITION, MANY NEW PARKS, GARDENS AND WATER SPORTS FACILITIES ARE BEING BUILT ON THE RECLAIMED LAND. THE PARKS SHALL ENHANCE LIVABILITY IN THE AREA THAT THEY ARE LOCATED IN AND STRENGTHEN THE CITY'S GREEN NETWORK.

To Make the riverfront accessible to the public by:

- STOPPING THE FLOW OF SEWAGE, KEEP THE RIVER CLEAN AND POLLUTION-FREE
- PROVIDING PERMANENT HOUSING FOR RIVERBED SLUM DWELLERS
- REDUCING RISK OF EROSION AND FLOODING IN FLOOD PRONE NEIGHBORHOODS
- CREATING RIVERFRONT PARKS, PROMENADES AND GHATS TO ENJOY THE WATER
- PROVIDE KAKINADA WITH NEW CULTURAL, TRADE AND SOCIAL AMENITIES
- REVITALIZE RIVERFRONT NEIGHBORHOODS, REJUVENATE KAKINADA
- GENERATE RESOURCES TO PAY FOR ALL OF THE FOREGOING
- CREATE A MEMORABLE IDENTITY FOR KAKINADA

METHODOLOGY

- PHYSICAL FEATURES OF THE CANAL
- RIVER HYDRAULICS
- LAND RECLAMATION AND EMBANKMENTS
- LAND OWNERSHIPS
- WATER RETENTION
- GROUND WATER RECHARGE
- LAND USE AND ROAD NETWORK
- INFRASTRUCTURE SERVICES
- RESETTLEMENT AND REHABILITATION
- IMPLEMENTATION STRATEGY
- PROJECT COSTS AND REVENUE POTENTIAL
- FINANCING , STRUCTURE OF THE MUNICIPAL CORPORATION
- AND
- DEVELOPMENT MANAGEMENT



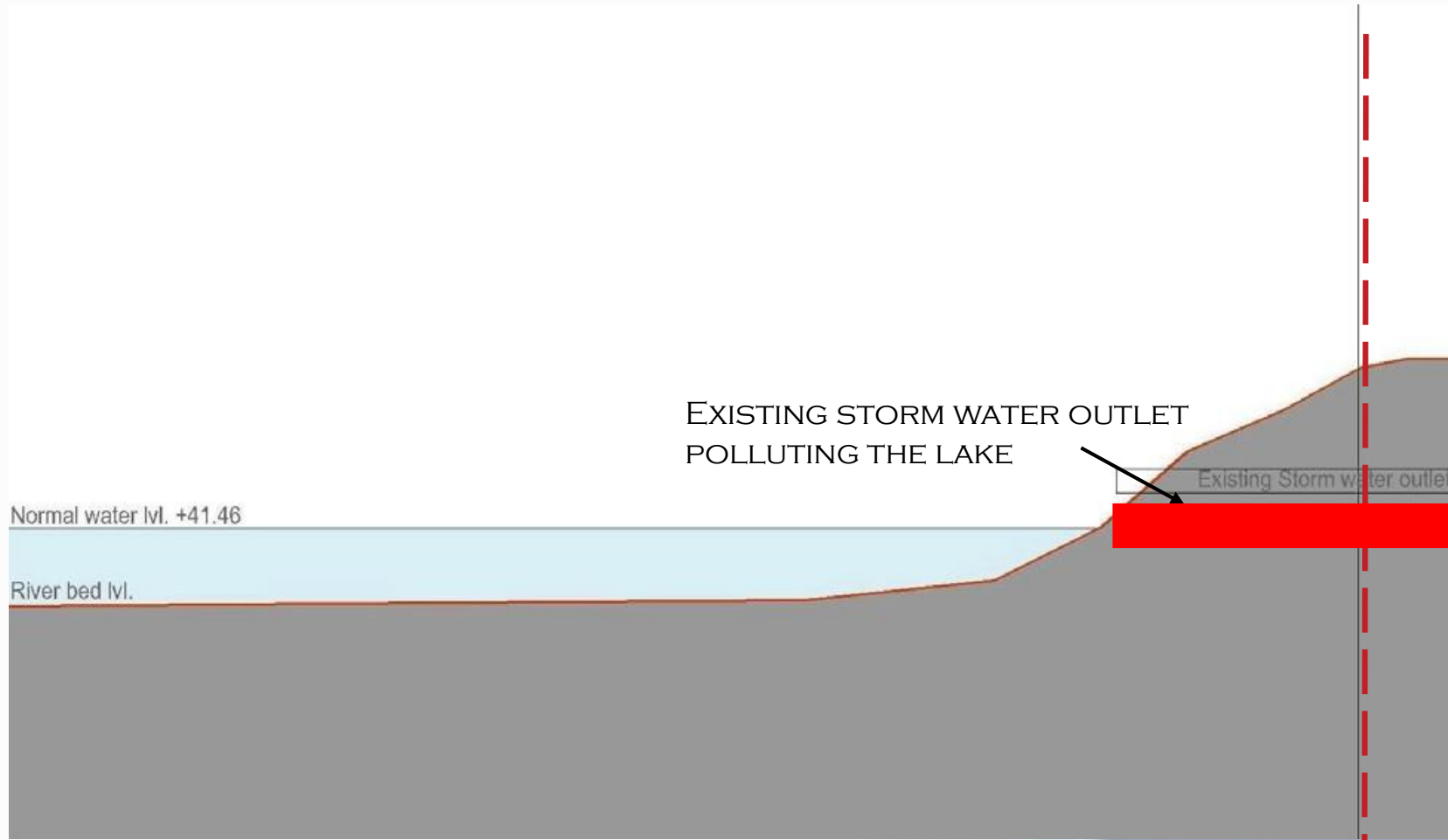
Development of public spaces

DEVELOPMENT OF PUBLIC PLACES SUCH AS PLAZAS AND WALKWAYS ALONG THE RIVER TO CREATE A CONTINUOUS AND UNRESTRICTED PUBLICALLY ACCESSIBLE RIVERFRONT.

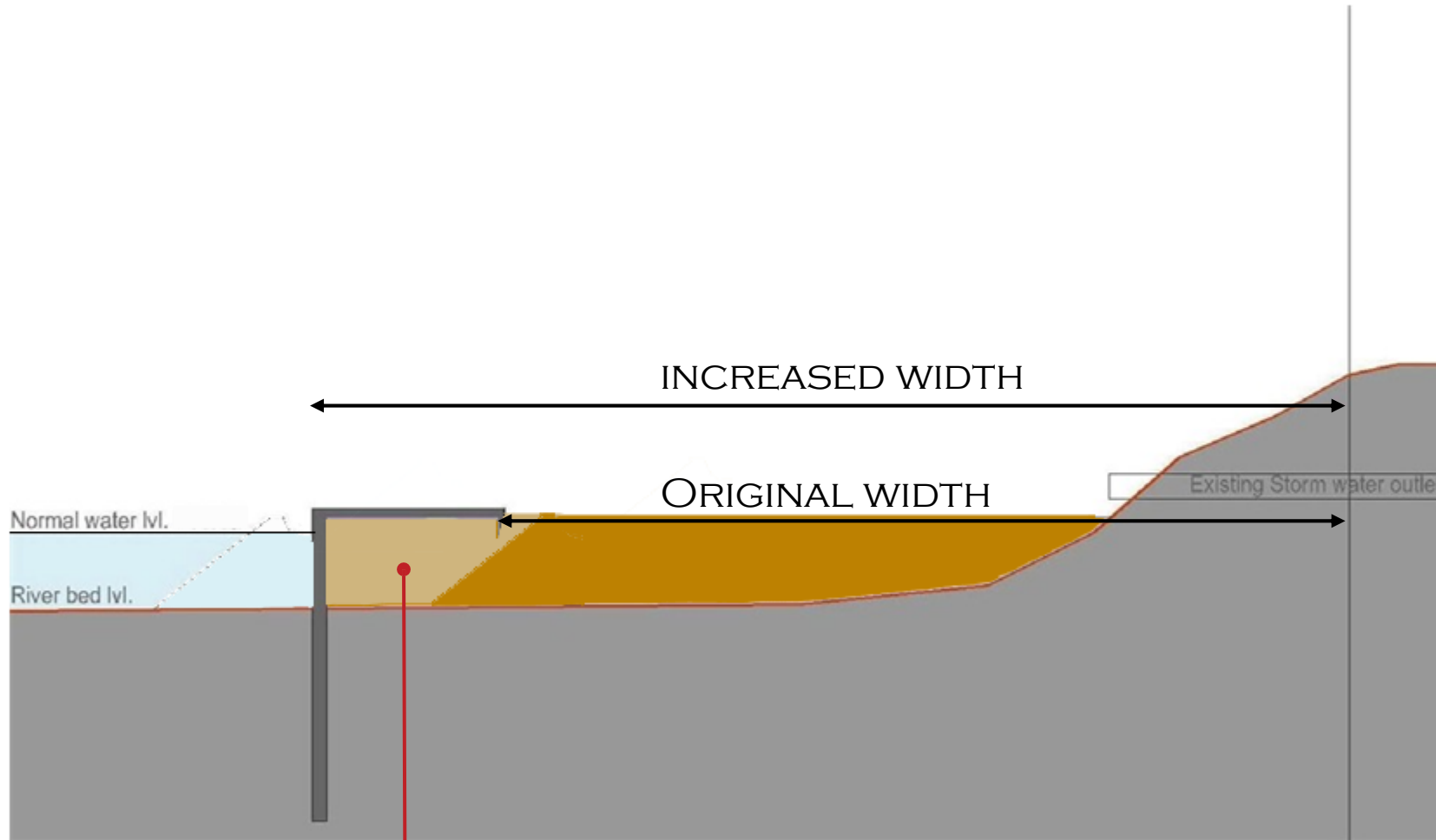
Development of parks and garden

VACANT AREAS ADJOINING THE RIVER SHALL BE DEVELOPED TO CREATE PARKS AND GARDENS AS GREEN OPEN SPACES FOR THE CITIZENS TO ENJOY THE RIVER AND THE CITY.

ORIGINAL CONDITION

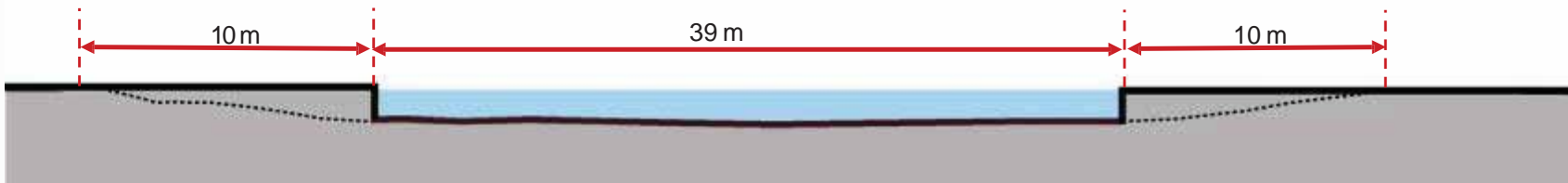
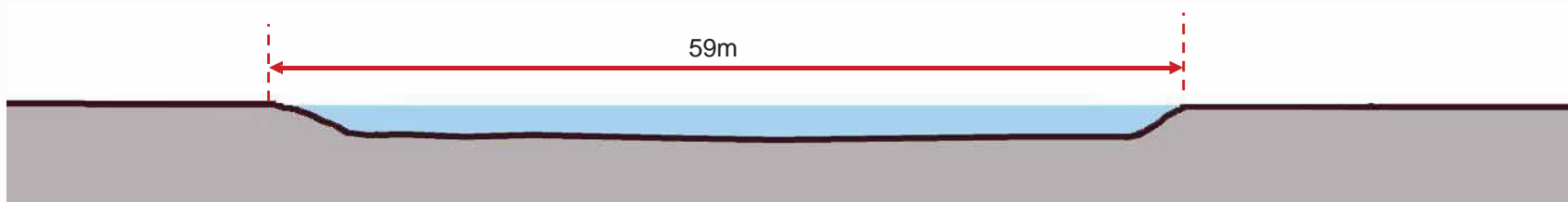


PROPOSED DIAPHRAGM WALL AND ANCHOR SLAB

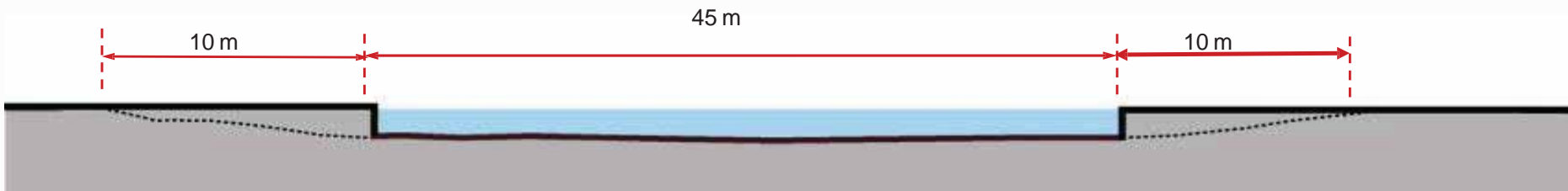
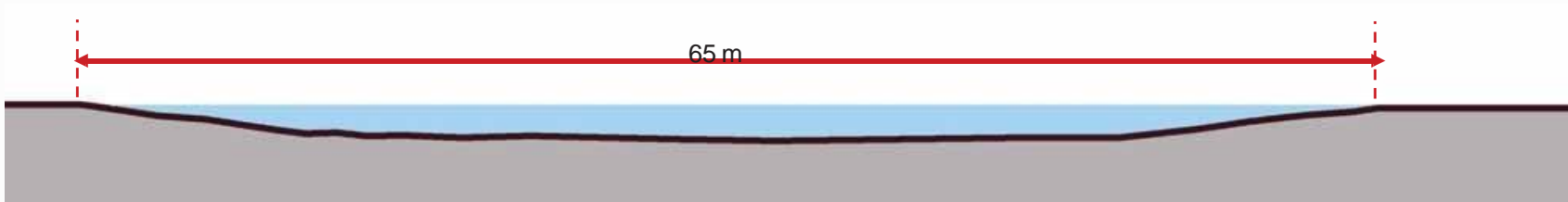


Diaphragm Wall & Anchor Slab (Promenade) to widen the ground space & protecting embankment of canal at the proposed projects

Canal Training and Land Reclamation – The Extent



NEAR WARF ROAD



NEAR INDRA PALEM JUNCTION

Canal training does not reduce the flood carrying capacity



Flood Carrying Capacity=
(Cubic metres/sec)

Cross-section area ↓
(sqm.)

X

Velocity ↑
(mts./sec)

PRIMITIVE MEASURES TO BE
TAKEN TO STOP THE FLOW OF
SEWAGE, KEEP THE CANAL
CLEAN AND POLLUTION-FREE
WHILE DEVELOPING THE
PROJECT

EXISTING INDRA PALEM JUNCTION CANAL VIEW

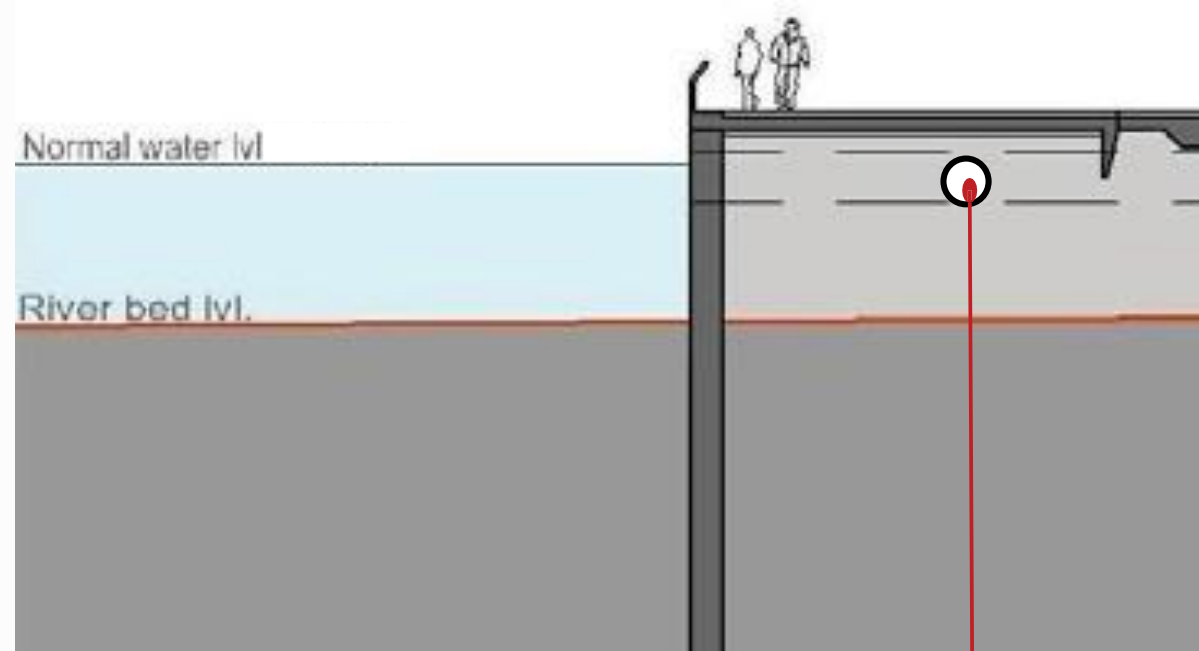


EXISTING INDRA PALEM JUNCTION CANAL VIEW



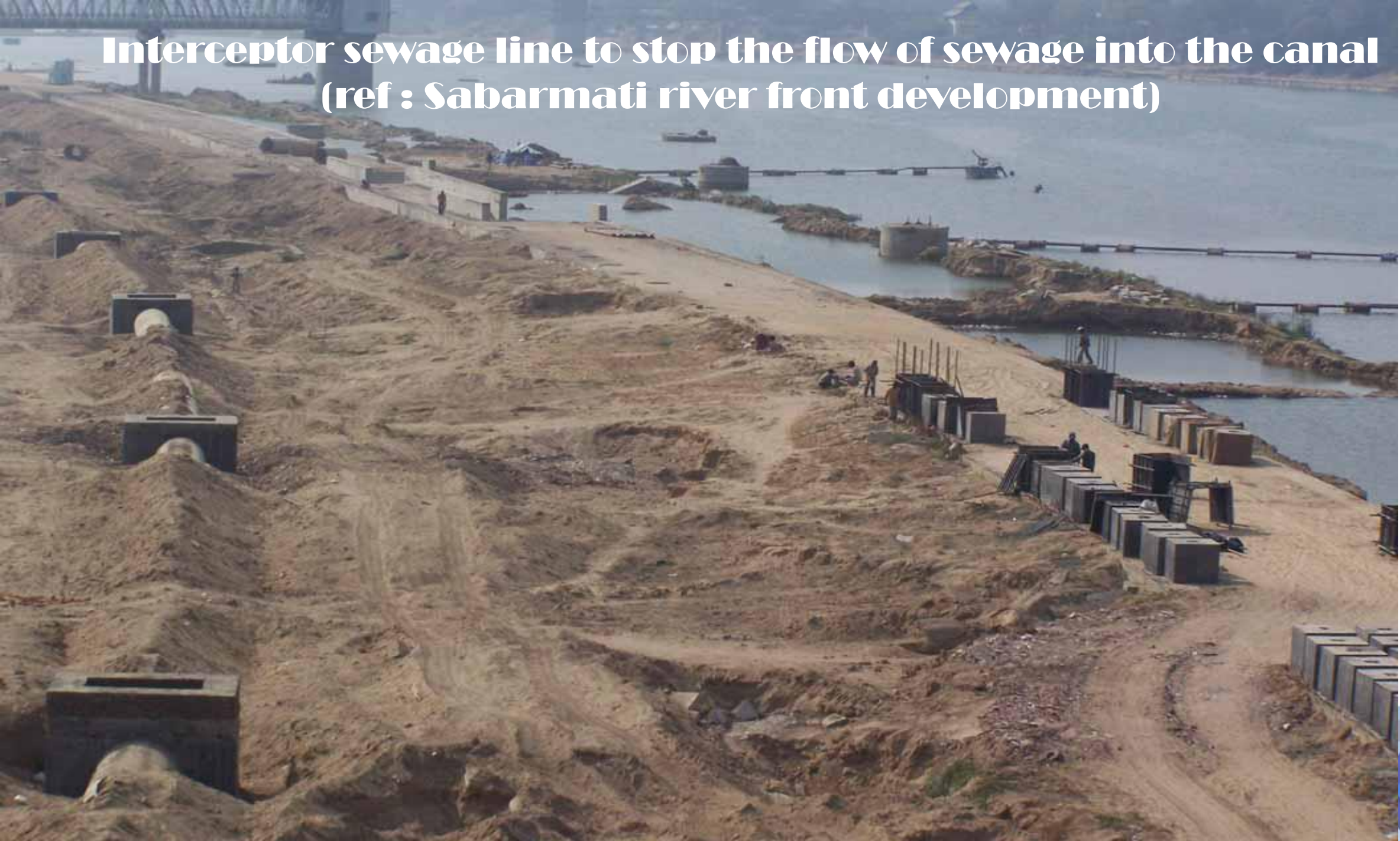
ENSURING CLEAN WATER

PROPOSED INTERCEPTOR SEWAGE LINE AND OUTFALLS EXTENSIONS



Interceptor Sewage Line to keep the canal free from pollution

**Interceptor sewage line to stop the flow of sewage into the canal
(ref : Sabarmati river front development)**



**RELOCATION OF RIVERBED SLUM
DWELLERS AND CREATING
PERMANENT HOUSING FOR THEM**

ENCROACHMENTS / SLUM DWELLINGS NEAR NTR BRIDGE



RELOCATION OF RIVERBED SLUM DWELLERS – SOCIO ECONOMIC SURVEY OF RIVERBED SLUMS (REF: SABARMATI)

Draft

SABARMATI RIVERFRONT DEVELOPMENT PROJECT

**RESETTLEMENT AND REHABILITATION
PROCESS**

FOR

SABARMATI RIVERFRONT DEVELOPMENT CORPORATION
LIMITED

BY

ENVIRONMENTAL PLANNING COLLABORATIVE

Name	Agency	Sign
Dharmendra Muniyappa Sandip Joshi	IISEM	<i>Dharmendra</i>
SREEMATH B	EPC	<i>Sreemath</i>
Dr. Ramesh	AMC	<i>Ramesh</i>
Hemibhai	Theotech	H. T. Reddy

Peg No

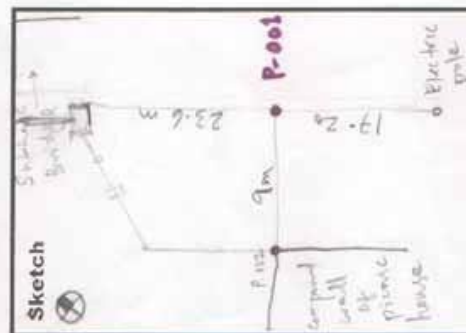
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Peg Details for Demarcation Line - SRFD Project - Nov 2000

Location | E
Near Subhash Bridge
pillar on Eastern bank.

Date | 14-11-2010

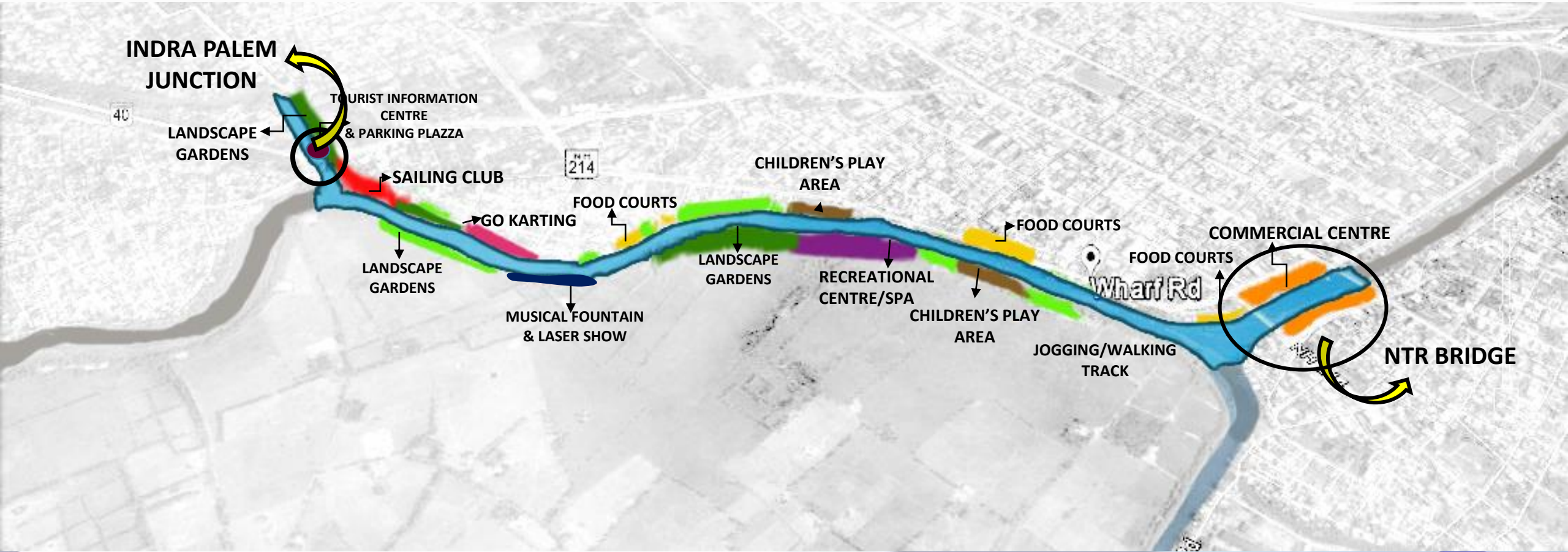


RELOCATION OF RIVERBED SLUM DWELLERS AND CREATING PERMANENT HOUSING FOR THEM REF : (SABARMATI)



DESIGN PROPOSALS

Proposed Plan Of Kakinada Canal Front Development



TOURIST INFORMATION CENTRE, FOOD COURT, PARKING & PARK

PLOT AREA : 3404 SQ.MTS

LOCATED AT INDRA PALEM JUNCTION ,THIS PLACE CATERS THE SERVICES OF PROVIDING INFORMATION CUM BOOKINGS ABOUT ALL RECREATIONAL /ENTERTAINMENT ACTIVITIES SUCH AS GO-CARTING, LASER SHOW, MUSICAL FOUNTAIN, RESORTS, SPA, SAILING CLUB, WATER SPORTS ETC., SPRAWLING ALONG THE PROPOSED 2.5 KM STRETCH OF THE CANAL. THIS CENTER IS ATTACHED WITH A FOOD COURT CATERING SERVICE FOR THE TOURISTS AS WELL AS THE COMMON PUBLIC, IT IS ALSO THE ALIGHT POINT FOR BOATING AND CANAL TRANSPORTATION FOR ALL THROUGH THE 2.5 KM STRETCH UPTO NTR BRIDGE.

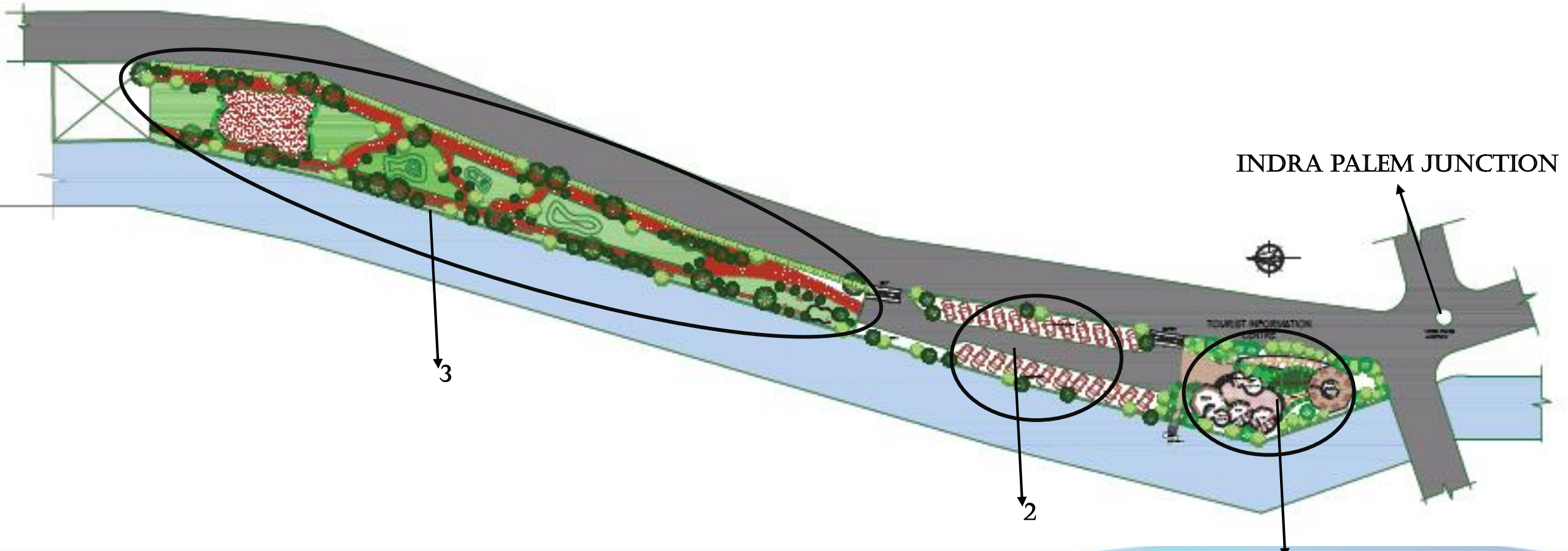
THIS LAND POCKET IS DESIGNED WITH A PARKING LOT AND A SMALL PUBLIC GARDEN WHERE THE BENCHES OVERLOOK THE CANAL FRONT JOGGING TRACK AND A SMALL CHILDREN PLAY AREA .

COST COMPONENT:

- 1) BUILT UP AREA OF THE CENTRE AND FOOD COURTS :150 SQ,MTS
- 2) COST OF THE STRUCTURES : RS. 35 LAKHS
- 3) COST OF LANDSCAPING AND HARDSCAPING, ILLUMINATION, PATHWAYS : RS. 40 LAKHS

TOURIST INFORMATION CENTRE, FOOD COURT, PARKING & PARK

TOTAL AREA : 3404.50 SQM



1. TOURIST INFORMATION CENTER AND FOOD COURT PLAN



TOURIST INFORMATION CENTRE

AREA STATEMENT

TOURIST INFORMATION CENTRE

TOTAL BUILT UP AREA = 93 SQM

FOOD COURT AREA : 57 SQM

TOTAL BUILT UP AREA : 150 SQM



ALIGHT POINT

TOURIST INFORMATION CENTRE ELEVATION

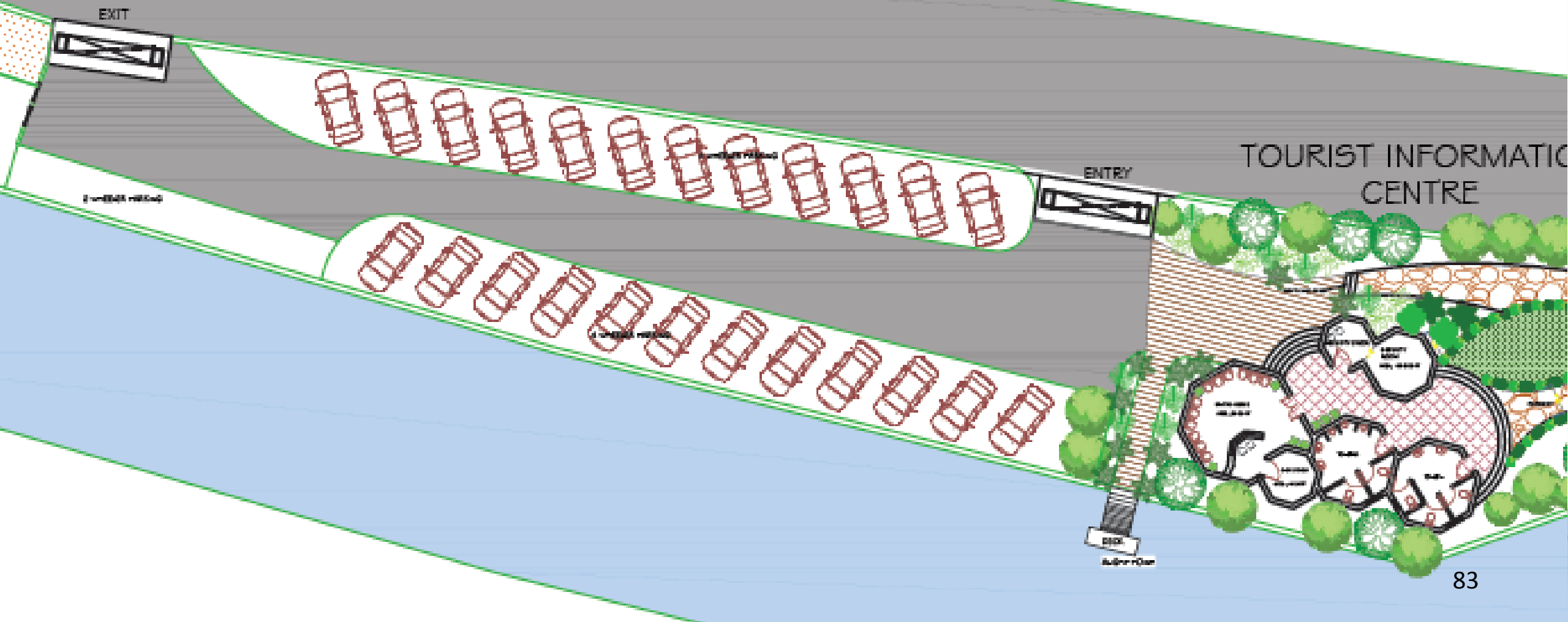
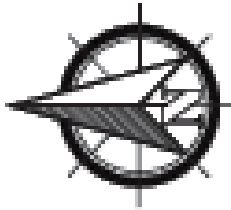


TOURIST INFORMATION CENTRE TOP VIEW



2. PARKING PLAZA

TOTAL AREA : 775.40 SQM



3. PARK LAYOUT

TOTAL AREA : 2479.12 SQM



SAND PIT / CHILDREN'S PLAY AREA

PARK BENCHES

WALKING / JOGGING TRACK

LAWN

FOOD COURT

BOATING





FISHING

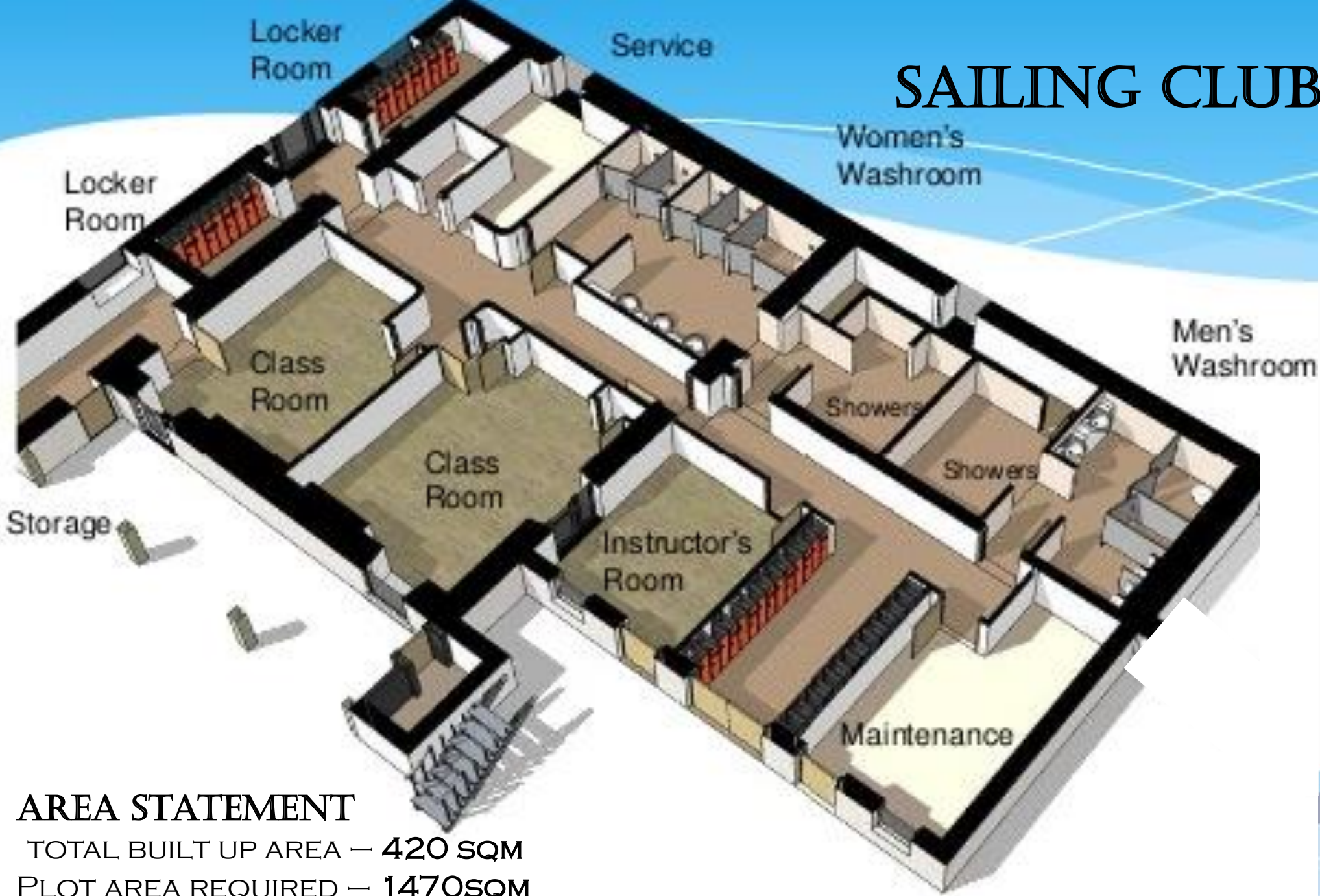


SAILING CLUB

ORGANIZED AND RUN BY THE MEMBERSHIP, SAILING CLUBS BECAME A PLACE TO PROMOTE THE SPORT OF SAILBOAT RACING AND [CRUISING](#), AS WELL AS PROVIDE A MEETING PLACE FOR THE PARTICULAR SOCIAL COMMUNITY. THE MEMBERSHIP IS A MIXTURE OF PEOPLE WITH SPECIFIC RECREATIONAL AFFINITIES. GENERALLY, THE MEMBERS INCLUDE THOSE WHO SAIL AS CREW FOR CRUISING OR RACING, AS WELL AS BOAT OWNERS. ALSO IT IS UP TO THE MEMBERS DECIDE ON THE OBJECTIVES OF THE CLUB TO SATISFY THE MEMBERSHIP AND TO ATTRACT OTHER LIKE-MINDED INDIVIDUALS.



SAILING CLUB PLAN



AREA STATEMENT

TOTAL BUILT UP AREA — 420 SQM

PLOT AREA REQUIRED — 1470SQM



TRAINING



EXPERIENCE



FACILITIES



KAYAKING

Sailing Club



MUSICAL FOUNTAIN

THE MUSICAL FOUNTAIN WILL BE A MAJOR ATTRACTION AND REJUVENATE THE EVENINGS FOR BOTH CITIZEN OF KAKINADA AND TOURISTS .

THE MUSICAL FOUNTAIN CAN HAVE **150 CHANNELS** AVAILABLE FOR WATER AND LIGHT EFFECTS .THE CONCEPT OF **THREE-TIER FOUNTAIN POOL**, WITH MUSICAL FOUNTAIN IN THE UPPER POOL SURROUNDED BY ARCHITECTURAL AND DYNAMIC FOUNTAINS IN THE INTERMEDIATE AND LOWER POOLS.

THE MUSICAL FOUNTAIN CAN HAVE A CENTRE-FED CIRCULAR WATER SCREEN OF **6 METRE HEIGHT AND 18 METRE WIDTH**. IN THE UPPER POOL AND HAVE ABOUT 99 WATER EFFECTS, WHILE THE INTERMEDIATE POOL WILL HAVE 20 WATER EFFECTS AND ANOTHER 30 SPECIAL WATER EFFECTS IN THE LOWER POOL. THERE WILL BE A LARGE WATER CASCADING AREA MORE THAN **80 METRE** LONG FROM UPPER POOL TO THE INTERMEDIATE POOL.

THE MUSICAL FOUNTAIN COMES WITH AN ENORMOUS NUMBER OF LIGHTS AS ALSO LED AND PAR LAMPS, AS ALSO HIGH WATT REFLECTORS, CAPABLE OF CONSTANTLY CHANGING THE COLOURS TO MAKE THE FOUNTAIN ATTRACTIVE AND EYE-CATCHING.

THE MUSICAL FOUNTAIN IS INTEGRATED WITH ULTRA-FAST TECHNOLOGY, IN WHICH WATER EFFECTS WILL BE CONTROLLED BY THE PNEUMATICALLY ASSISTED SOLENOID VALVES, CAPABLE OF OPENING AND SHUTTING 12 TIMES IN A SECOND, THEREBY RESULTING IN WATER SHOOTING IN AIR AT A SPECTACULAR SPEED.

THE ESTIMATED COST IS AROUND Rs. 3 CRORE.

LASER SHOW

A LASER LIGHTING DISPLAY OR LASER LIGHT SHOW INVOLVES THE USE OF LASER LIGHT TO ENTERTAIN AN AUDIENCE. A LASER LIGHT SHOW MAY CONSIST ONLY OF PROJECTED LASER BEAMS SET TO MUSIC, OR MAY ACCOMPANY ANOTHER FORM OF ENTERTAINMENT, TYPICALLY MUSICAL PERFORMANCES.

THE INSTALLATION COMBINES A FULL SPECTRUM OF MEDIA ELEMENTS, FROM DAZZLING LASER ANIMATION, LIVE VIDEO, STUNNING SOUND QUALITY, RHYTHMIC MUSICAL FOUNTAINS AND EXTRAORDINARY BEAM EFFECTS, ALL ASTONISHINGLY PORTRAYED ON LARGE WATER SCREENS. THE ELEMENTS COALESCE TO RE-CREATE STORIES AND HISTORICAL AND CULTURAL ASPECTS OF KAKINADA'S PAST, PRESENT AND FUTURE, ENTHRALLING THOUSANDS OF GUESTS EACH NIGHT.

A PARCEL OF 2.5 ACRES (10117 SQ.MTS) ADJACENT TO THE CANAL IS REQUIRED FOR CONSTRUCTING THE LASER AUDITORIUM WHICH CAN SEAT UP TO 2000 PEOPLE AT A TIME FOR A SHOW .

THE ESTIMATED COST OF LASER SHOW IS AROUND RS.3 CRORES.

LASER SHOWS AND MUSICAL FOUNTAINS



REQUIREMENTS OF LASER SHOW WITH WATER SCREEN

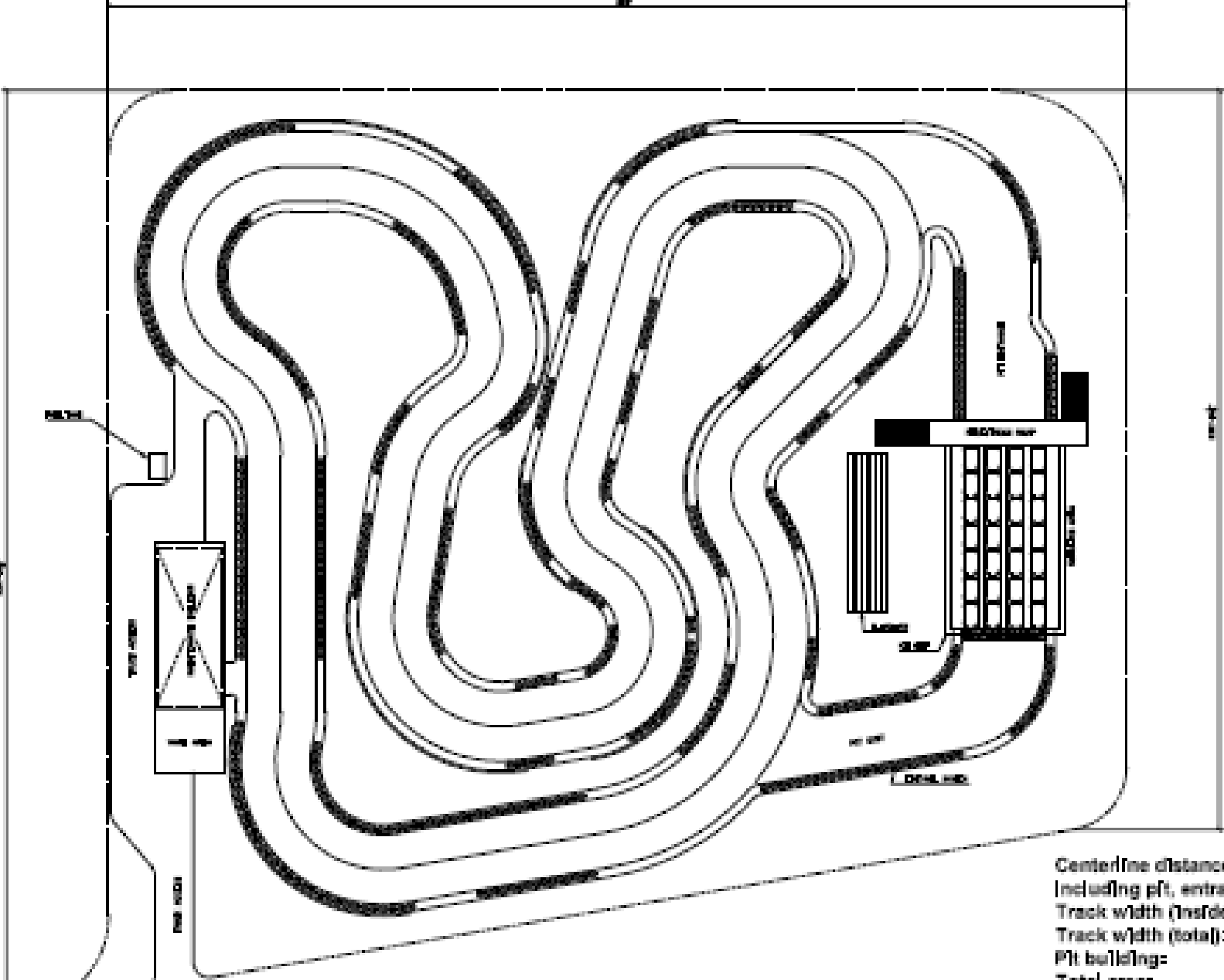
Water screen size height X width m.	Water screen nozzle inlet dia.mm/in	Recommended pool size m.	Minimum pool size m.	Pump duty lpm @ head m.	Pump hp.Single or multiple pump(s) to this total
6 x 18	100/4	36 x 20	24 x 9	1800 @ 50	40
9 x 27	100/4	54 x 27	36 x 14	2000 @ 67	50
11 x 33	150/6	66 x 33	44 x 17	2500 @ 100	80
15 x 45	150/6	90 x 45	60 x 23	2550 @ 105	120
18 x 54	150/6	108 x 54	72 x 27	2600 @ 140	150
20 x 60	150/6	120 x 60	90 x 30	3330 @ 140	160

GOKARTING

ROARING ENGINES, SCREECHING SPINS, SHARP CONTOURS, THUNDERING SPEEDS...

- THE ADVENTURE AND GLAMOUR OF MOTORSPORTS HAVE ALWAYS TURNED ON THE PASSIONS FOR BILLIONS, AROUND THE WORLD INCLUDING KAKINADA. PEOPLE IN KAKINADA HAVE THE CRAZE AND FRENZY FOR THE SPORT, AND THEY ARE OFFERING TO SPEND MONEY MAINTAINING THE FACILITIES ARE OFFERED.
- THE OTHER INTERESTING PART OF THIS ATTRACTION IS ONE DON'T NEED TO GET INTENSIVE TRAINING AND SCOUT OUT SPONSORS TO EXPERIENCE THIS FUN.
- INDUCTION OF THIS FUN-SPORT WILL DEFINITELY INCREASE THE ATTRACTION FOR THE SPORT, LEISURE & RECREATION CENTRE AND WILL ALSO BOOST UP THE REVENUE SOURCES OF THE COMPLEX.

GO KARTING



Centerline distance:	1,125'
Including pit, entrance(s) & exit(s):	1,380'
Track width (inside rail):	22'
Track width (total):	28'
Pit building:	57' x 34'
Total area:	80,510 SF

GO KARTING REQUIREMENTS :

- GO KARTING IS AN **OUTDOOR** TRACK DESIGN THAT IS **670 FEET AT CENTER-LINE**.
- THE PIT AREA HAS TWO LONG LANES AND HANDLES UP TO **24 KARTS**.
- THIS TRACK DESIGN SHOWS THE BANKS THAT WOULD BE BUILT INTO EACH TURN.

AREA ESTIMATION:

THE GO KARTING COMPLEX INVOLVES SPACES LIKE

1. GOKARTING TRACK
2. MAINTAINANCE BUILDING
3. FUEL TANK
4. ADMIN ROOM
5. STORE ROOM
6. CHANGING ROOM & TOILETS

- CENTRAL LINE DISTANCE : 420M
- TRACK WIDTH (INSIDE RAIL) : 6.5-7M
- TRACK WIDTH (TOTAL) : 8.5M

BUILDING AREA : 145 SQM

- ADMIN ROOM - 40SQM
- STORE - 40-50SQM
- CHANGING ROOM & TOILET - 25 SQM
- SERVICE SPACE (MAINTAINANCE BUILDING)– 150-180SQM
- FUEL TANK
- SERVICE ROAD

GOKARTING



Jogging and cycling track along the canal



MOST TRACKS ARE 400 METERS LONG, 100 METERS ON EACH STRAIGHTAWAY, AND 100 METERS ON EACH CURVE. 4 LAPS AROUND THE TRACK WOULD EQUAL A MILE.

Table 7.5: Separated two-way path widths

	Path width (m)		
	Bicycle path	Footpath	Total
Desirable minimum width	2.5	2.0	4.5
Minimum width – typical maximum	2.0 – 3.0	≥1.5	≥4.5

Table 7.6: Separated one-way path widths

	Path width (m)		
	Bicycle path	Footpath	Total
Desirable minimum width	1.5	1.5	3.0
Minimum width – typical maximum	1.2-2.0	≥1.2	≥3.4

Jogging and cycling track along the canal



ZORBING

A **WATER BALL** OR **WATER WALKING BALL** IS A LARGE INFLATABLE SPHERE THAT ALLOWS A PERSON INSIDE IT TO WALK ACROSS THE SURFACE OF A BODY OF WATER. THE GIANT BALL IS USUALLY TWO METERS IN DIAMETER AND HAS A ZIPPERED ENTRANCE TO ALLOW FOR EASY ENTRY AND EXIT. THE WATER BALL IS SIMILAR TO THE ZORB, BUT IT HAS ONLY ONE LAYER AND IS DESIGNED FOR WATER TRAVEL RATHER THAN DOWN-HILL ROLLING.

ESTABLISHMENT COST

TOTAL -5,00,000

Zorbing



FOOD COURT

A FOOD COURT IS GENERALLY LOCATED NEAR ONE OF THE LARGER "ANCHOR STORES" IN A SHOPPING MALL, OR ELSE IN A LOCATION CONVENIENT FOR TRUCK DELIVERIES. THE LOCATION TENDS TO MAKE IT A DESTINATION POINT, ENCOURAGING SHOPPERS TO BROWSE SMALLER STORES AND KIOSKS ALONG THE ROUTE. WHILE SOME SPECIALTY FOOD VENDORS MAY RENT MORE CENTRALIZED SPACES, MOST FULL-SERVICE RESTAURANT OWNERS PREFER THE POOL OF POTENTIAL CUSTOMERS CREATED IN A FOOD COURT.

CUSTOMERS ARE OFTEN MORE WILLING TO SAMPLE UNUSUAL OR ETHNIC FOODS WHEN ALL OF THE OPTIONS ARE GROUPED TOGETHER. IT IS NOT UNUSUAL FOR EMPLOYEES TO OFFER FREE SAMPLES OF THEIR PRODUCTS TO POTENTIAL CUSTOMERS WALKING THROUGH THE AREA.

ETHNIC FOOD COURTS



FOOD COURTS



FOOD COURTS



Food Courts And Market Areas

CHILDREN OFTEN WANT DIFFERENT TYPES OF FOOD THAN THEIR PARENTS, SO THIS FEATURE ALLOWS EACH FAMILY MEMBER TO PURCHASE DIFFERENT MEALS AT DIFFERENT LOCATIONS AND STILL EAT TOGETHER IN A COMMUNAL DINING AREA.

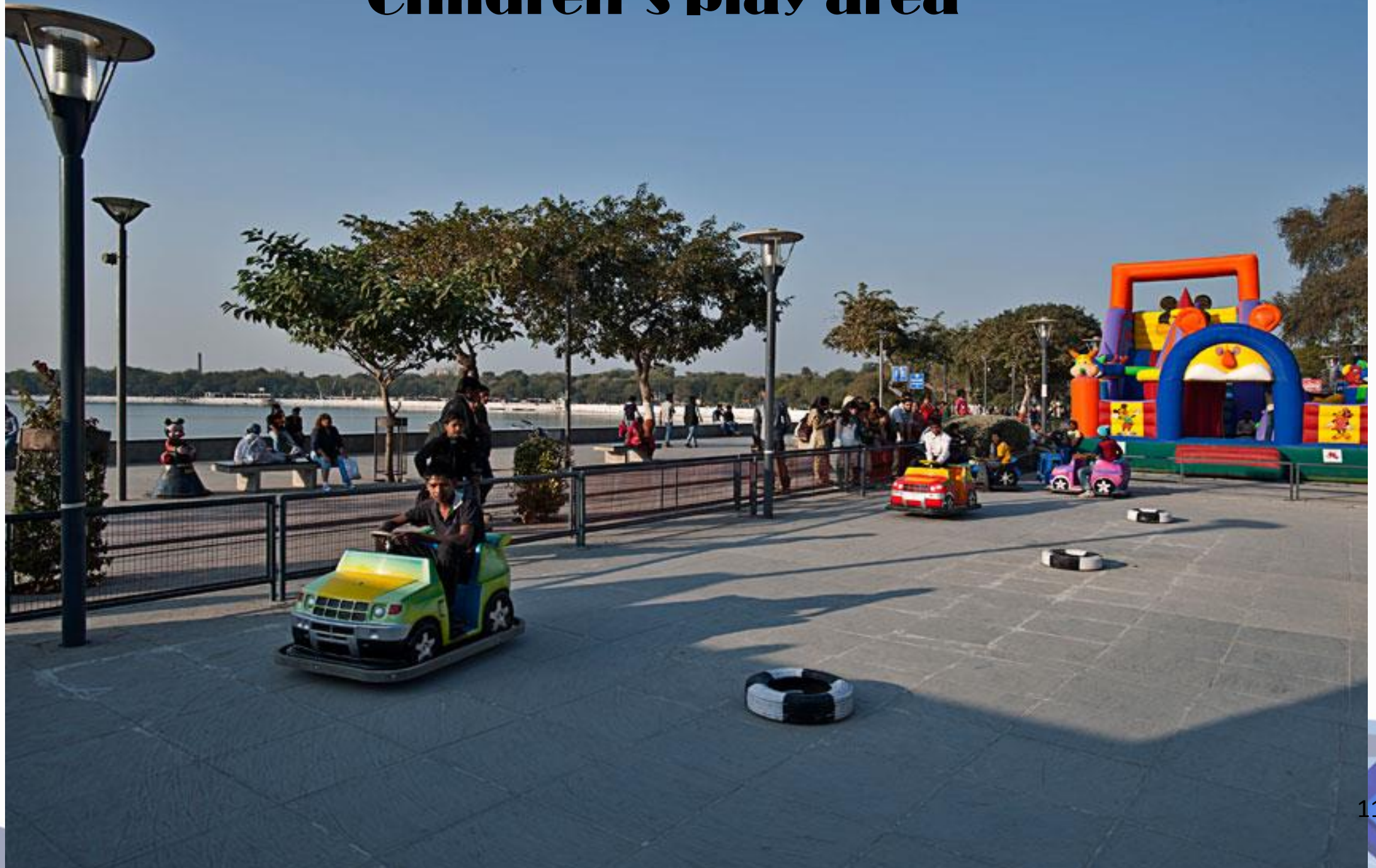
INDIVIDUAL EATERIES TEND TO BENEFIT FROM A TYPE OF SYNERGY, AS CUSTOMERS OF ONE VENUE SEEK OUT SIDE DISHES, DESSERTS OR BEVERAGES FROM ANOTHER.

A FOOD COURT IS OFTEN ONE OF THE MOST POPULAR DESTINATIONS FOR CASUAL SHOPPERS WHO WANT TO SPEND SEVERAL HOURS IN A BUSTLING SHOPPING MALL. IT MAY ALSO BE THE ONLY LOCAL OUTLET FOR CERTAIN SPECIALTY OR ETHNIC FOODS, WHICH CREATES A DIFFERENT KIND OF ATTRACTION FOR RESTAURANT OWNERS.

Food Courts And Market Areas



Children's play area





RESORT

A RESORT IS A PLACE USED FOR RELAXATION, VACATION OR AS A DAYTIME GETAWAY. ONE OF THE MOST DESIRABLE ASPECTS OF A RESORT IS THAT VISITORS ARE FREED FROM MOST DAILY RESPONSIBILITIES, WHICH ARE USUALLY TAKEN CARE OF BY THE FACILITY'S STAFF. SEVERAL ACTIVITIES ARE NORMALLY OFFERED AT RESORTS, INCLUDING MESSAGES, MEALS, COSMETIC TREATMENTS AND LIVE ENTERTAINMENT.



THERE ALSO IS THE INCLUSION OF AT LEAST FIVE SECONDARY EXPERIENCES, SUCH AS SPA OFFERINGS, SPORTS ACTIVITIES AND HIKING TRAILS THAT CAN BE UTILIZED. FINALLY, THEY SHOULD PROVIDE THEIR GUESTS WITH ROOMS FOR THE NIGHT AND OFFER SOME TYPE OF DINING OPPORTUNITY. THESE DISTINCTIONS ARE USED TO TELL WHICH DESTINATIONS ARE RESORTS, WHICH ARE SIMPLY HOTELS, AND WHICH ONES FALL INTO NEITHER CATEGORY.

RESORT VIEW





RESORT PLAN

A RESORT COMPRISING OF 10 ROOMS OF WHICH 5 ARE PROPOSED AND 5 BEING FOR FUTURE EXPANSION, REQUIRES A TOTAL PLOT AREA OF 2622.62 SQ YARDS



AREA STATEMENT

RECEPTION AND WAITING : 166.02 SQM
ROOMS : 38 SQM/ROOM X 10
RESTAURANT : 80 SQM



SPA



HEALTH SPA

A HEALTH SPA IS WELLNESS IN ITS PUREST FORM AND THE CONCEPT OF THE SPA IS TOWARDS PAMPERING, WELLNESS, ANTI STRESS, PREVENTIVE AND CURATIVE TREATMENTS BASED ON THE INDIAN AYURVEDIC PRACTICES.

HEALTH SPAS OFFER A GAMUT OF AUTHENTIC AND TRADITIONAL WELLNESS TREATMENTS AND EXPERIENCES IN MOST TRADITIONAL YET MODERN WAY. SPAS DISCOVER NATURAL THERAPY THROUGH THE COMBINATION OF TRADITIONAL AYURVEDA AND INNOVATIONS.

SESSIONS AT HEALTH SPAS OFFER RELAXATION AND REJUVENATION TO CREATE A BALANCE BETWEEN BODY, MIND AND SOUL.

IT WILL CONSIST OF AYURVEDA THERAPY ROOMS WHICH ARE TRADITIONALLY DESIGNED WITH AN INDIVIDUAL SHOWER AND STEAM ROOM WHERE THE THERAPIST DELIVERS PAMPERING & DREAMY TREATMENTS.

BASIC COMPONENTS OF A SPA FACILITY

WITH AREA ESTIMATES

1. RECEPTION DESK AND WELCOME AREA : 10 SQM
2. RESERVATION AND SCHEDULING : 9-12 SQM
3. RETAIL/SPA BOUTIQUE : 15-25 SQM
4. MEN'S/WOMEN'S LOCKER ROOMS : 10-15 SQM
5. DRY AND WET TREATMENT ROOMS : 20-25 SQM /PER ROOM
6. HYDRO MASSAGE : 20-25 SQM /PER ROOM
7. TREATMENT SHOWERS AND BATHS : 15 SQM
8. TREATMENT WAITING AREA : 8-10 SQM
9. TREATMENT LAB

TOTAL BUILT-UP AREA : 340 SQM

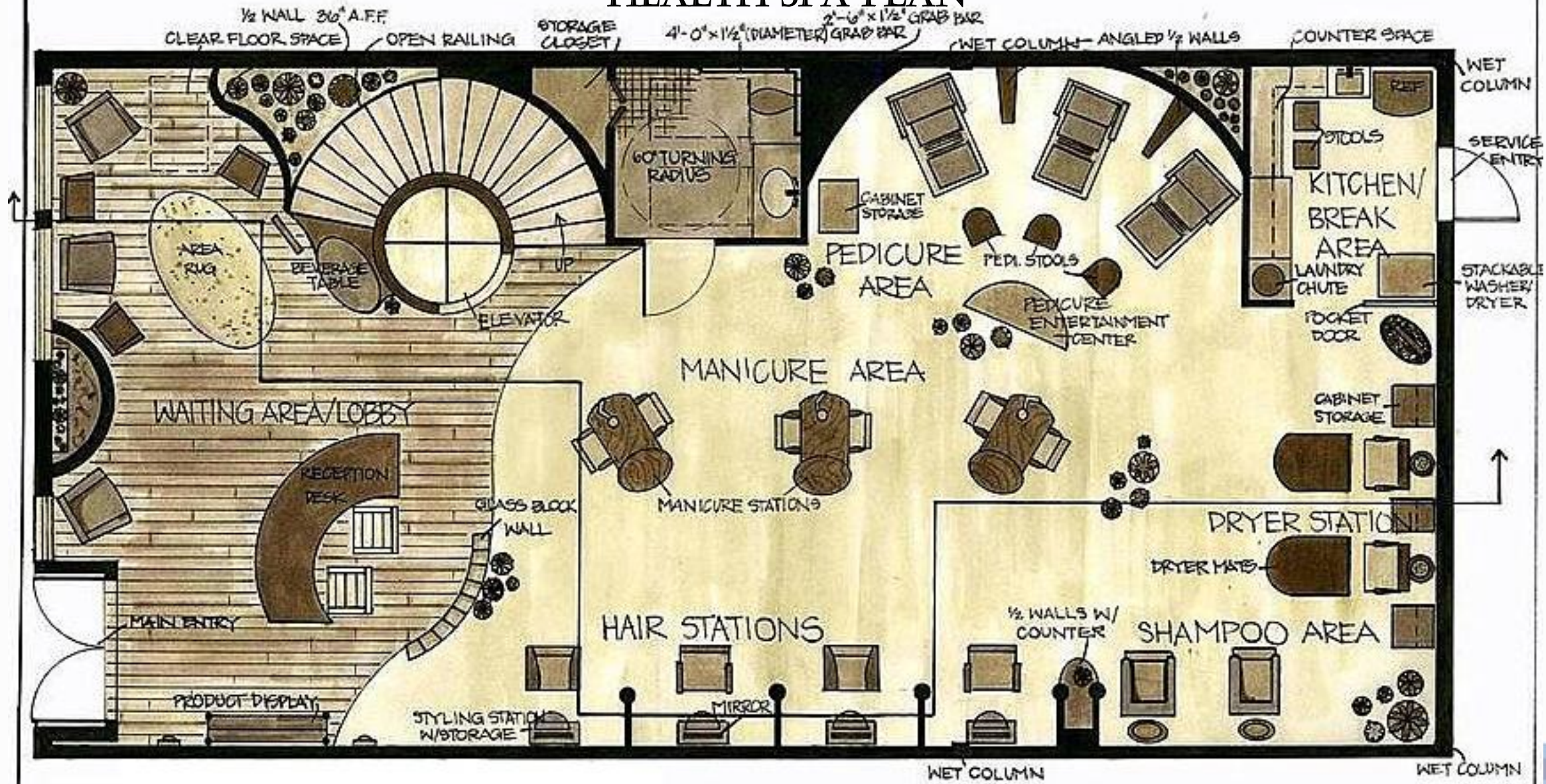
TOTAL PLOT AREA REQUIRED FOR A HEALTH SPA WITH ALL THE AMENITIES IS 1423.50 SQ YARDS (1190SQM).

OTHER (OPTIONAL) SPACES

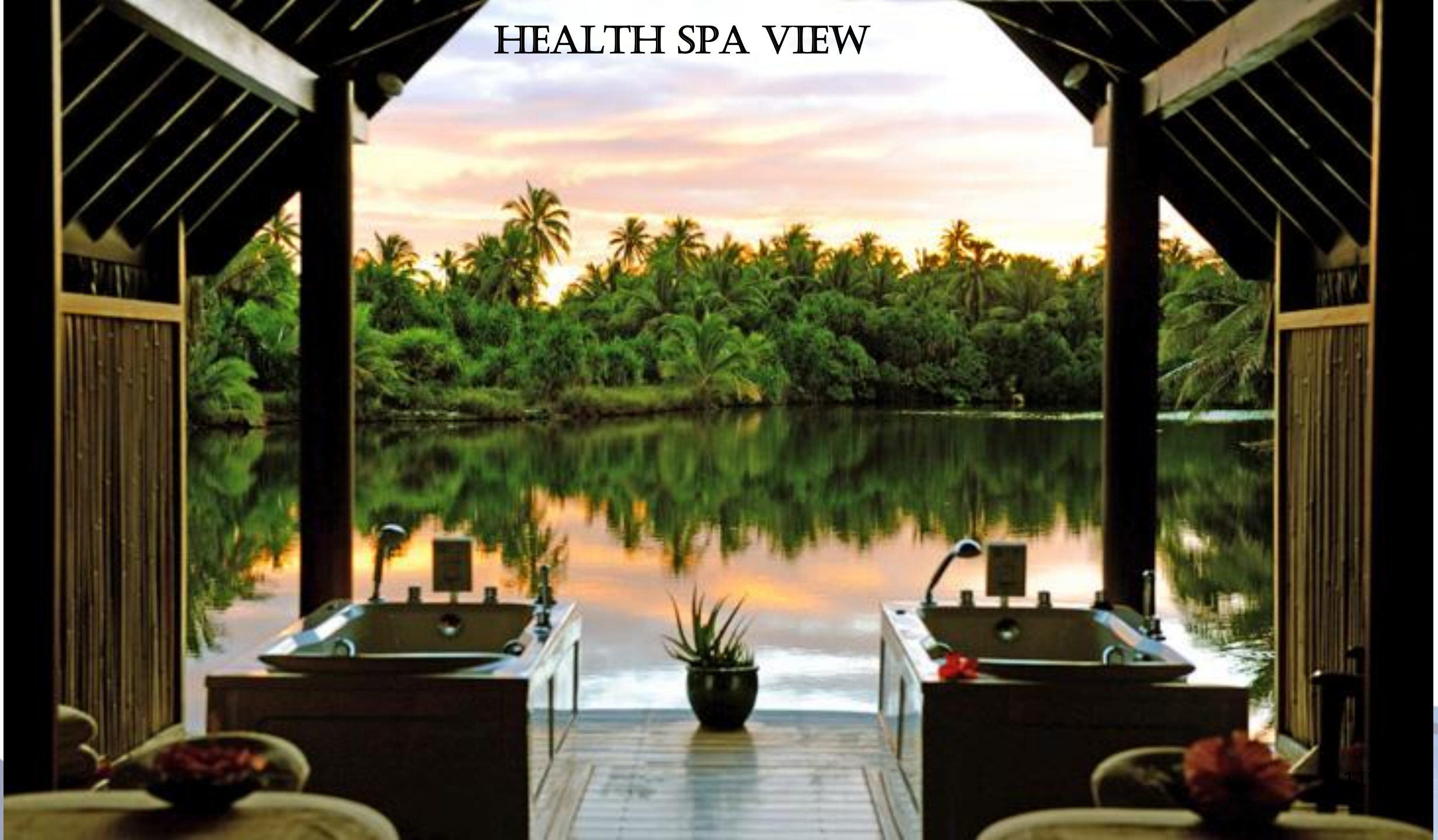
- ADMINISTRATIVE OFFICE : 8-10 SQM
- STAFF LOUNGE
- SWIMMING POOL AND AQUATICS : 30-35 SQM
- LAUNDRY ROOMS : 25-30 SQM
- STORAGE AREAS : 20 SQM
- PRIVATE OR MEDITATION AREA : 10-12 SQM



HEALTH SPA PLAN



HEALTH SPA VIEW



LANDSCAPE POCKETS



COMMERCIAL AND RECREATIONAL CENTRE

FEATURES OF COMMERCIAL AND RECREATIONAL CENTRE

ANCHOR STORES & DEPARTMENTAL STORES

THE GROUND AND FIRST FLOOR IS DESIGNED FOR THE DEPARTMENTAL STORES , FASHION STORE. AT THE MALL INCLUDE WESTSIDE , MARKS & SPENCER ETC...VARIETY OF FOODS, INCLUDING FROZEN FOODS, CANNED FOODS, FRUITS AND VEGETABLES, MEAT AND POULTRY ITEMS, BAKERY ITEMS, AND HOT FOOD COUNTERS.

MULTIPLEX

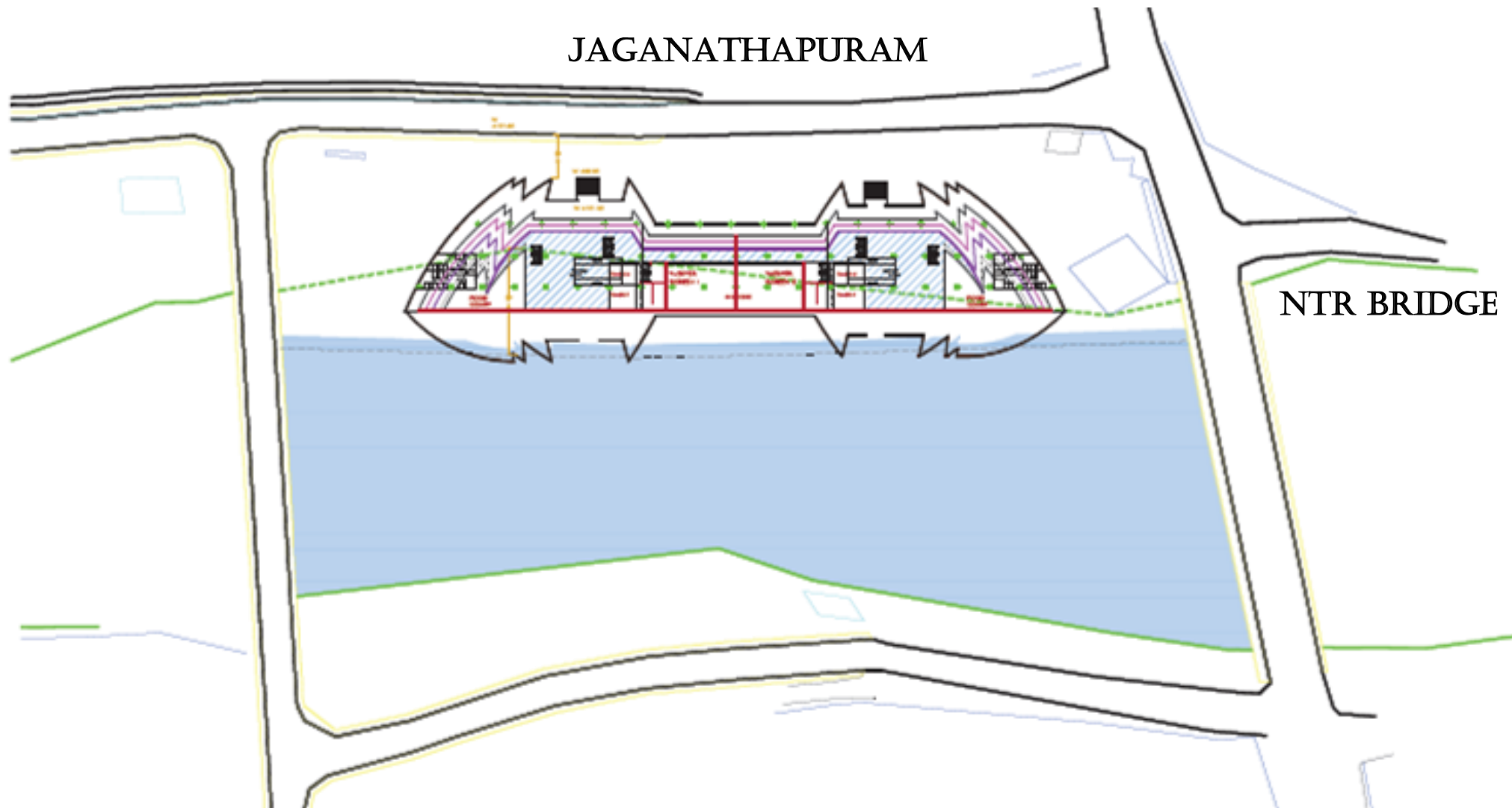
SECOND ,THIRD AND FOURTH FLOORS CONSISTS OF FOOD COURT AND RESTAURANTS AND 4 SCREEN PVR CINEMAS MULTIPLEX, WITH EXCLUSIVE ENTRY ELEVATORS FROM OUTSIDE.

AMUSEMENT AREA

FIFTH FLOOR IS DESIGNED FOR LEISURE ZONE WHICH INCLUDES AN INDOOR CLIMBING WALL, ICE SKATING RINK, 5D CINEMA, ARCADE GAMING ZONE, RIDES, PARTY HALL AND A 12 LANE BOWLING ALLEY ETC.

COMMERCIAL AND RECREATIONAL CENTRE PLAN

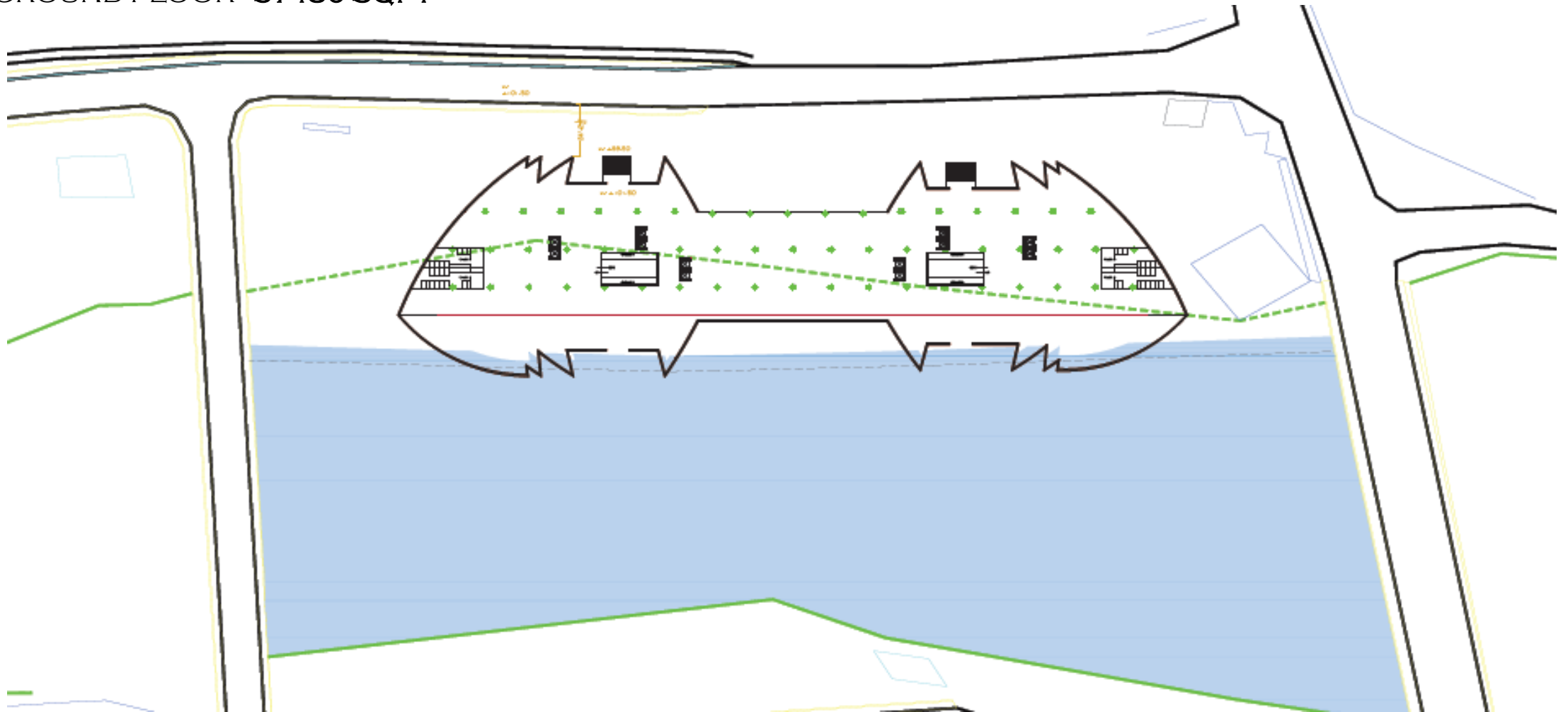
JAGANATHAPURAM



GROUND FLOOR PLAN

AREA STATEMENT

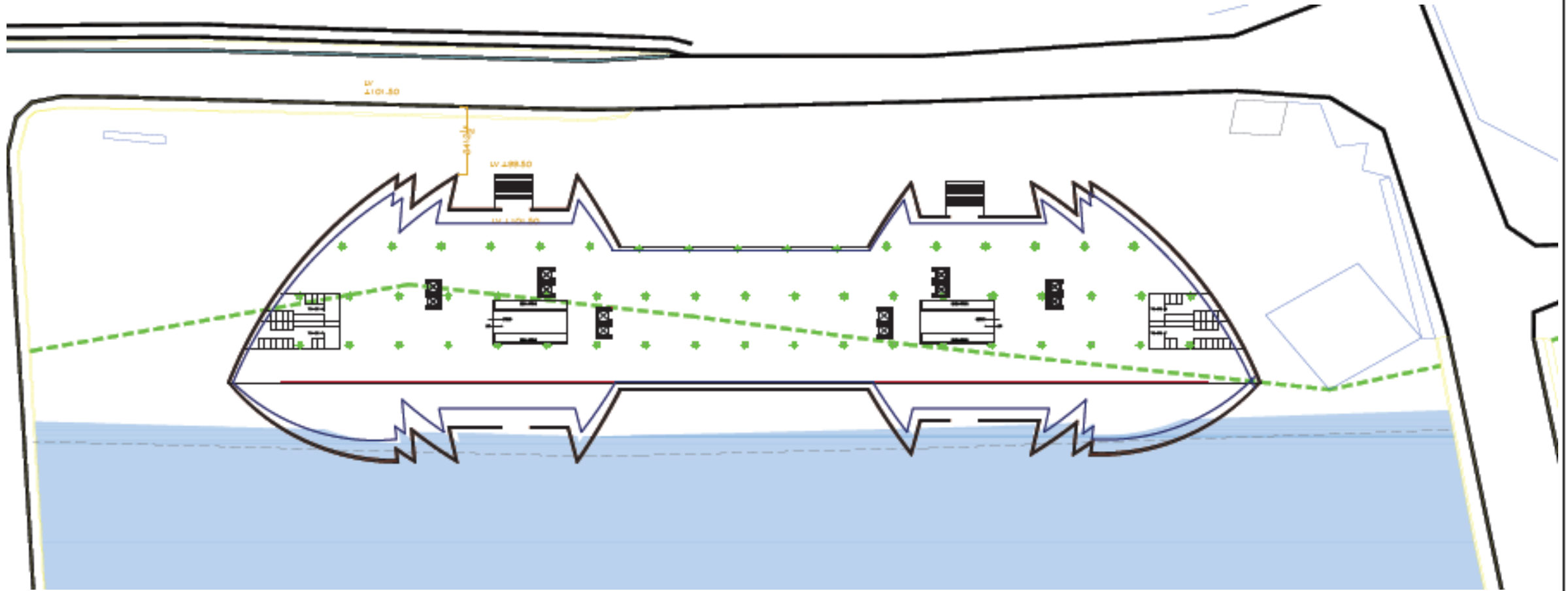
- GROUND FLOOR - 37480 SQFT



GROUND – FIRST FLOOR PLAN

AREA STATEMENT

- GROUND FLOOR - 37480 SQFT
- FIRST FLOOR - 34175 SQFT



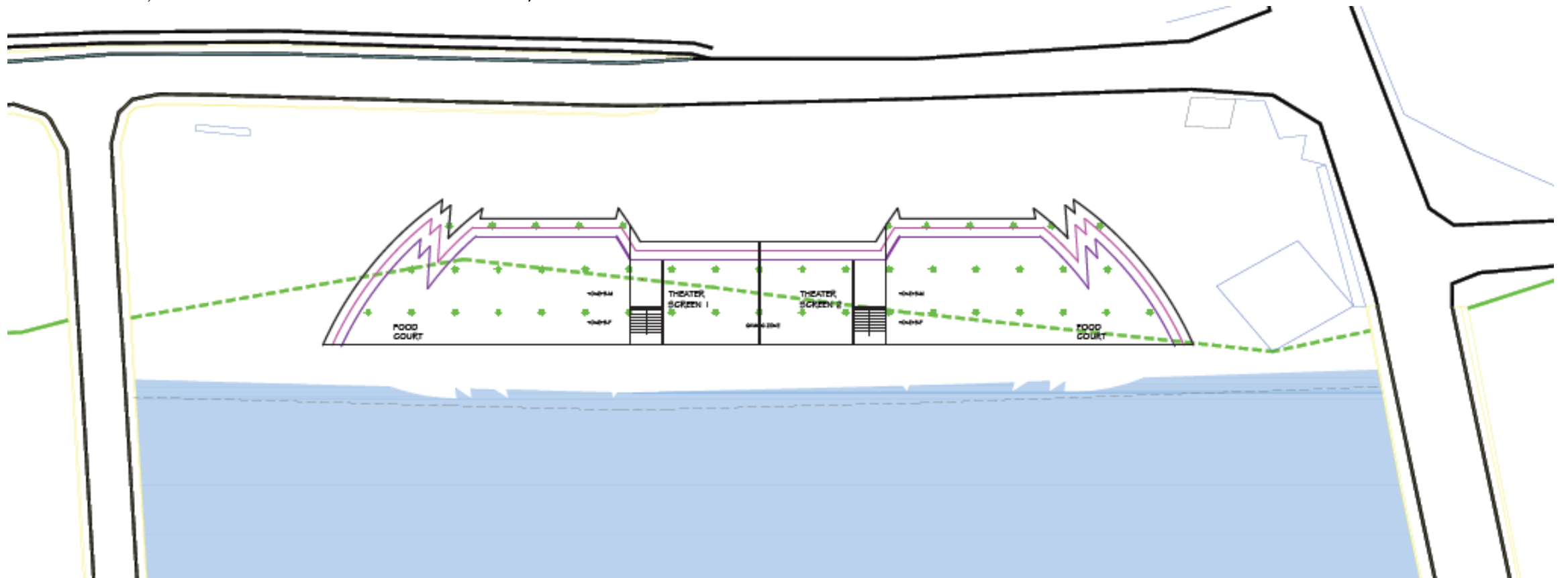
SECOND, THIRD AND FOURTH FLOOR PLAN

SPACES

- MULTIPLEX

AREA STATEMENT

- SECOND FLOOR - 30850 SQFT
- THIRD, FOURTH FLOOR - 19440 SQFT



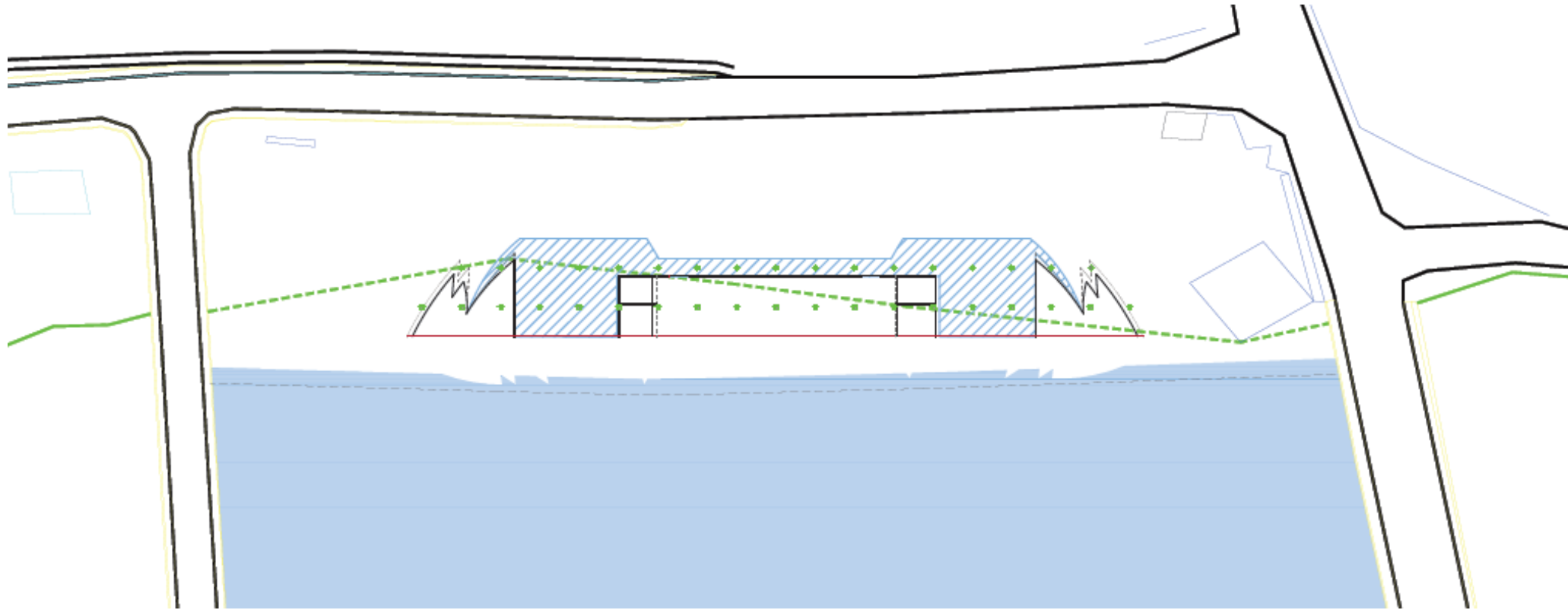
FIFTH AND SIXTH FLOOR PLAN

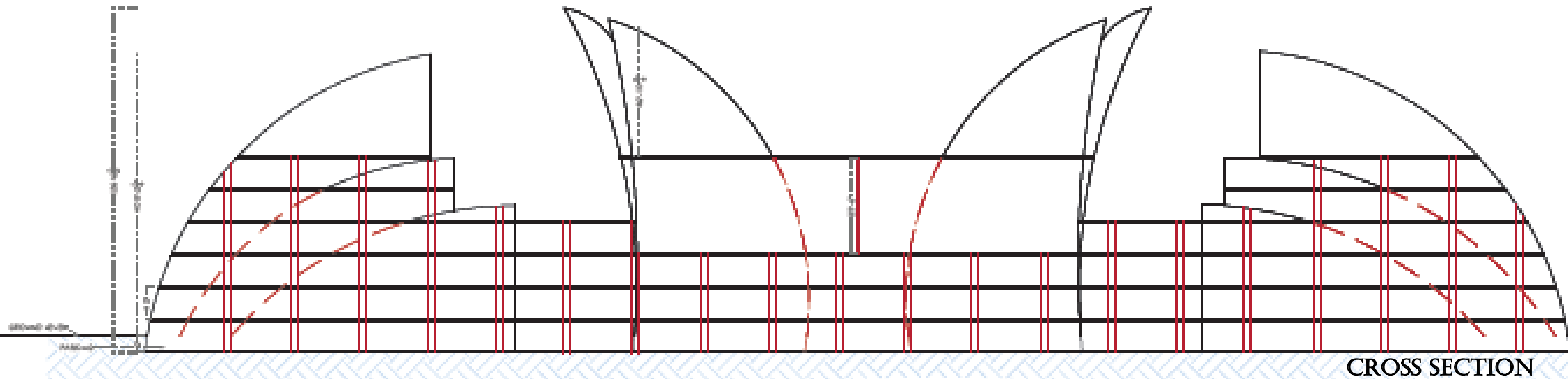
SPACES

- FOOD COURT AND GAMING ZONE

AREA STATEMENT

- FIFTH FLOOR - $7860 + 2063 = 9923$ SQFT





AREA STATEMENT

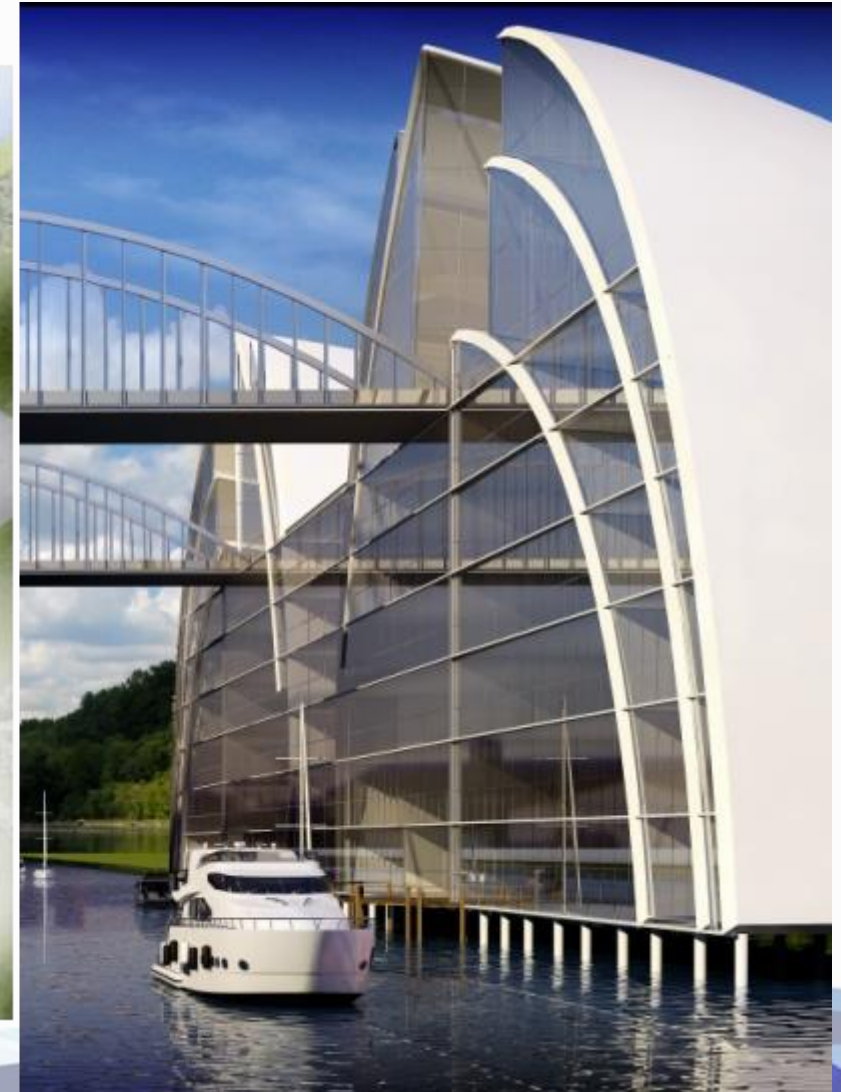
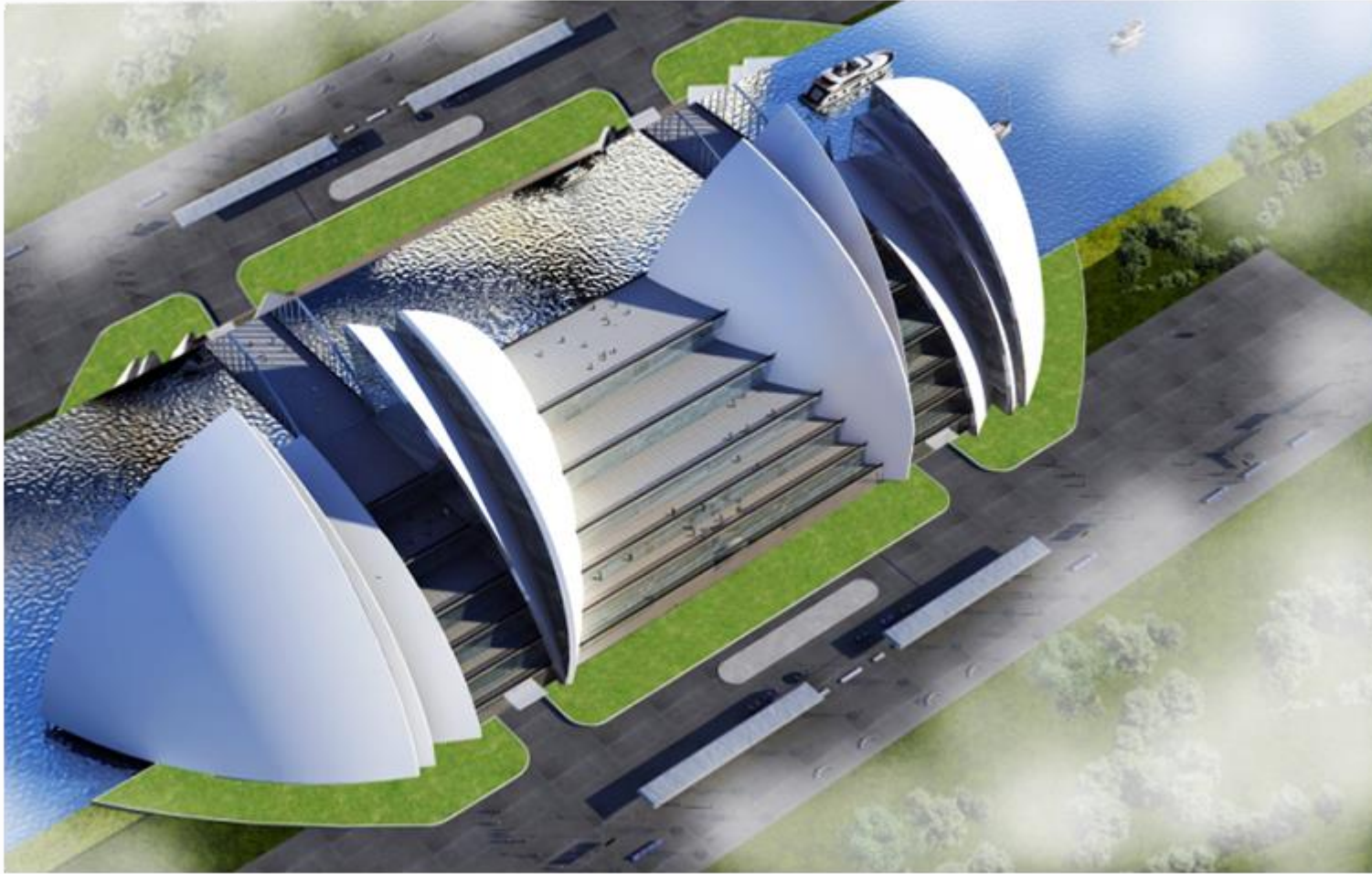
- GROUND FLOOR - 37480 SQFT
- FIRST FLOOR - 34175 SQFT
- SECOND FLOOR - 30850 SQFT
- THIRD, FOURTH FLOOR - 19440 SQFT
- FIFTH FLOOR - 7860 + 2063 = 9923 SQFT

TOTAL BUILT UP AREA – 1,31,868 SQFT

COMMERCIAL AND RECREATIONAL CENTRE VIEW



COMMERCIAL AND RECREATIONAL CENTRE VIEW



COST PROJECTIONS

THE ESTIMATED COST OF THE ENTIRE PROJECT IS **Rs.92.00 CRORES**. THE DETAILS OF THE PROJECT COST

ESTIMATION ARE SET OUT IN THE TABLE BELOW.

Sl.no	PROJECT DESCRIPTION	Cost (Rs in lakhs)
01	TOURIST INFORMATION CENTRE	200
02	SAILING CLUB	400
03	MUSICAL FOUNTAINS AND LASER SHOWS	600
04	ETHNIC FOOD COURTS	600
05	RESORT & SPA	500
06	RECREATIONAL AND COMMERCIAL CENTRE	4500
07	LANDSCAPING ALONG THE CANAL	595
	PROMENADE CIVIL WORKS & EMBANKMENT OF CANAL	1000
	TOTAL	8395

SL.No	RECREATIONAL ACTIVITIES	Cost (rs.In lakhs)
08	BOATING	84
09	ZORBING	5
10	GOKARTING	91
11	FISHING	5
12	CYCLING/JOGGING TRACK	20
13	CHILDREN'S PLAY AREA	600
	TOTAL	805

Thank you...

