

KOMAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

LAYING OF
FOUNDATION
STONE CEREMONY

MARCH 28, 2013



Sulaymania- Kurdistan

An aerial photograph of a residential development, showing several large, modern houses with light-colored roofs and walls, interspersed with green lawns and trees. A vertical blue bar is overlaid on the left side of the image, with the text 'PROJECT BRIEF' centered within it. The bar has a gradient from a lighter blue at the top to a darker blue at the bottom.

PROJECT BRIEF

PROJECT BRIEF

- Komar University of Science & Technology (KUST) Is a privately owned independent, credit-based, Internationally-designed and seeking international accreditation University.
- KUST aims to graduate professionals in Applied Sciences, business, Engineering and Engineering Technology at the undergraduate level. KUST received license to operate from the Ministry of Higher Education and Scientific Research (MHESR) Number 7-17867 in October 18, 2009.
- KUST has constitution and by laws which govern its administration, faculty members, staff and students.

PROJECT BRIEF

KUST Vision

Komar University of Science and Technology plans to become a leading higher education institution in IRAQ in producing international quality semi-professional and professionals in Applied Sciences, Business Administration and Engineering Technology.

KUST Mission

The mission of Komar University of Sciences and Technology is to provide an international standard teaching and learning environment that promotes intellectual, social and personal development of students; to assist them in developing the ability to think critically, creatively and reflectively and to prepare them for productive careers in Applied sciences, Business Administration and Engineering Technology.

PROJECT BRIEF

The university consists of the following components distributed on the proposed phases as shown in the table :

Number	Component Name	Area (m2)
Phase One Facilities		
4	College of Engineering	4000
5	Department of General Education	4000
6	Library Building (Library + Administration)	2400
7A	Engineering Workshops	1760
8	Main Student Plaza	3800
9	Indoor Sports Facilities	2000
10A	House of President	400
10B	House of Vice president	300
10C	House of Dean of Engineering	200
11A	Faculties & Staff apartments	3980
12	Guest House	400
14	Security Room & Gate	100
15	W.W.T.P	-
23	Secondary Entrance	40
32	Landmark (Elevated Water Tank - 300m ³)	-
33	Underground Water Tank (750 m ³)	-
34	Electrical Main Substation (800 m2)	-
Total Phase One Facilities		23380
Phase Two Facilities		
3	College of Engineering Technology	3600
2	College of Business	3700
7B	Engineering Workshops	950
10D	Houses for 2 Deans	400
11B	Staff and Faculty Housing	3860
13A-C	Student Housing	9300
	A	
	B	
	C	
Total Phase Two Facilities		21810
Phase Three Facilities		
1	Administration	2600
13D-F	Student Housing	10500
	D	
	E	
	F	
17	Outdoor Playfield	
Total Phase Three Facilities		13100
Future Facilities (Future Expansion)		
10E	Houses for 2 Deans	400
26	Multi storey parking structure (240 Car)	8975
27	Outdoor playgrounds on roof	-
31	2 Future Colleges	8000
Total Future Facilities		17375

PROJECT BRIEF

CONSTRUCTION COST

Div. No.	Description	Phase 1	Phase 2	Phase 3	Total
1	Design	550,000	275,000	275,000	1,100,000
2	Building Construction Cost	38,294,500	26,792,000	17,777,750	82,864,250
3	Laboratories Furniture & Equipment	7,453,500	4,542,500	0	
4	Furniture	1,375,000	1,035,000	632,500	3,042,500
5	Infrastructure & Landscape	15,147,000	6,024,000	0	21,171,000
6	Supervision	770,000	582,000	350,750	1,702,750
TOTAL SUM (US\$)		63,590,000	39,250,500	19,036,000	121,876,500



PLANNING & EDUCATIONAL POLICIES & VALUES

PLANNING & EDUCATIONAL POLICIES & VALUES

Planning Criteria for the University Campus

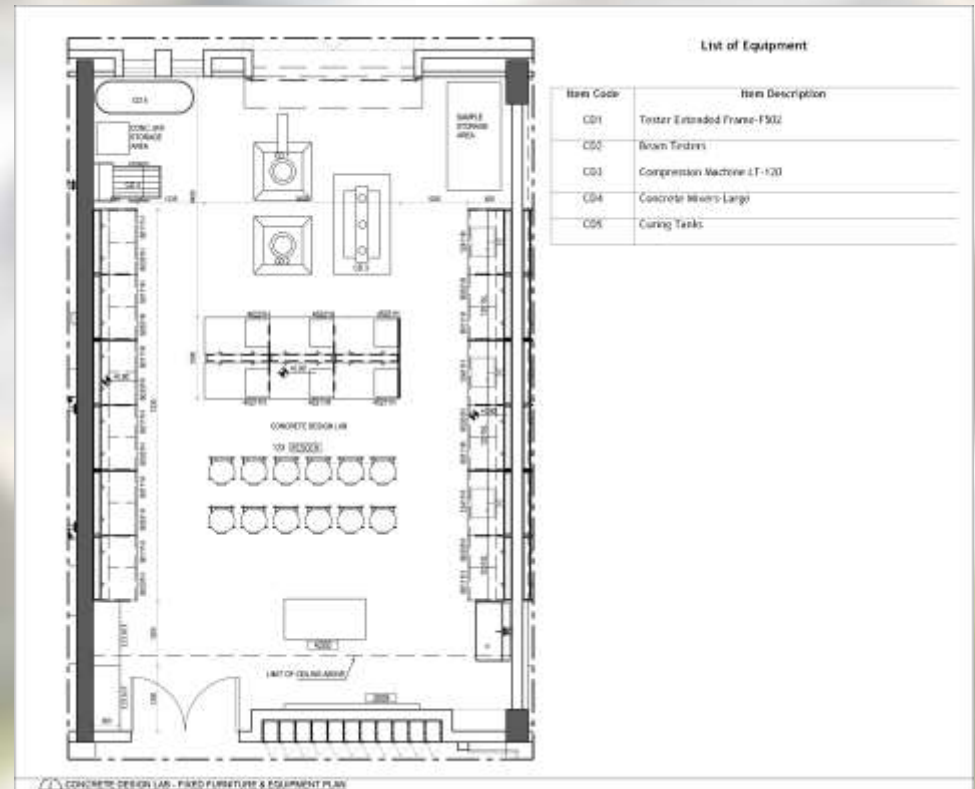
The total land area of campus is based on the rate of minimum 30 M²/student, The ratio of faculty member/student for different schools designed as follows:

a.	Engineering	1:20
b.	Business	1:30
c.	Science	1:20
d.	Humanities	1:30

PLANNING & EDUCATIONAL POLICIES & VALUES

Planning Criteria for the University Campus

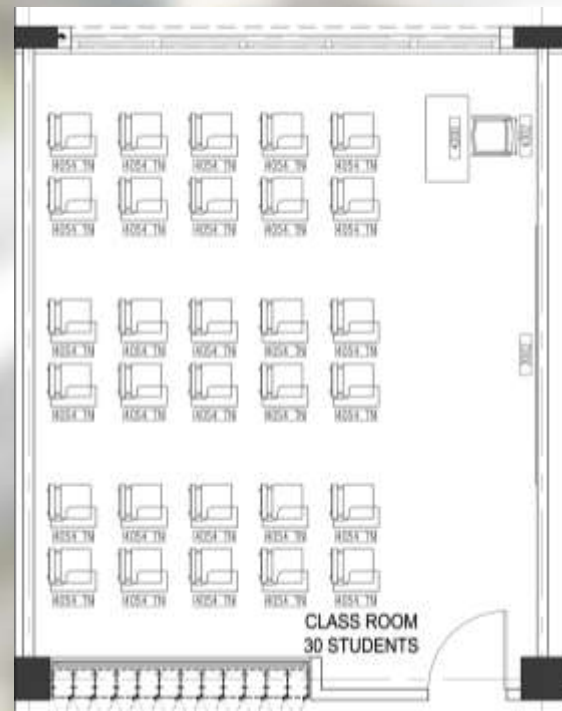
The maximum number of students in any laboratory does not exceed 20 students and 3M²/student minimum of lab area for sciences and 4 M² /student for engineering). Minimum size of lab is 60 M².



PLANNING & EDUCATIONAL POLICIES & VALUES

Planning Criteria for the University Campus

Classrooms in the Engineering and Science school does not accommodate more than 40 students. Size of class in humanities is limited to 60 students. The area assigned for a student in the classroom, is a minimum of 2M²). Minimum area of classroom is 40 M².



PLANNING & EDUCATIONAL POLICIES & VALUES

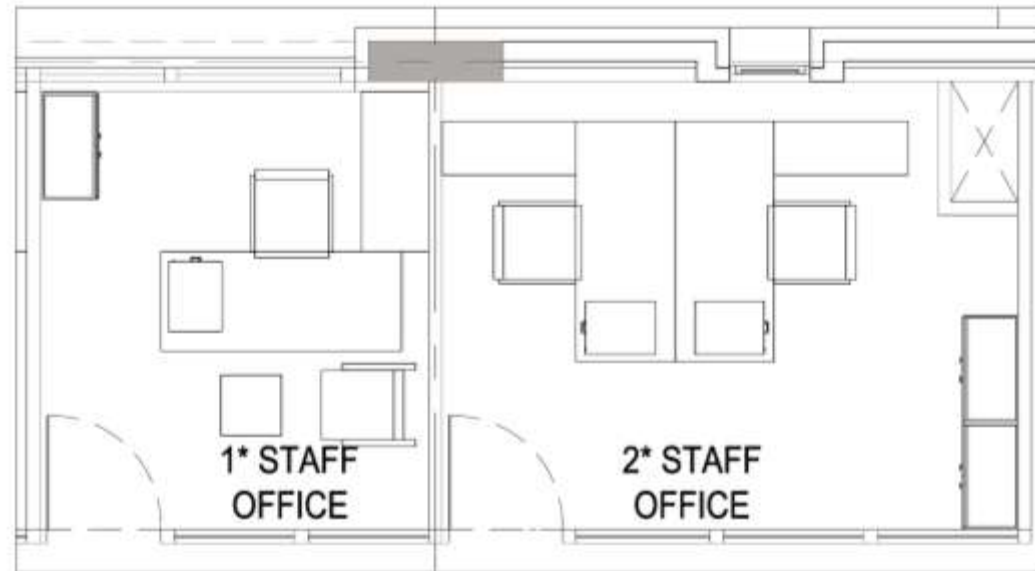
Planning Criteria for the University Campus

Total capacity of the classrooms, at a time, in the campus is based on an efficiency factor of 60% of the total number of students.

PLANNING & EDUCATIONAL POLICIES & VALUES

Planning Criteria for the University Campus

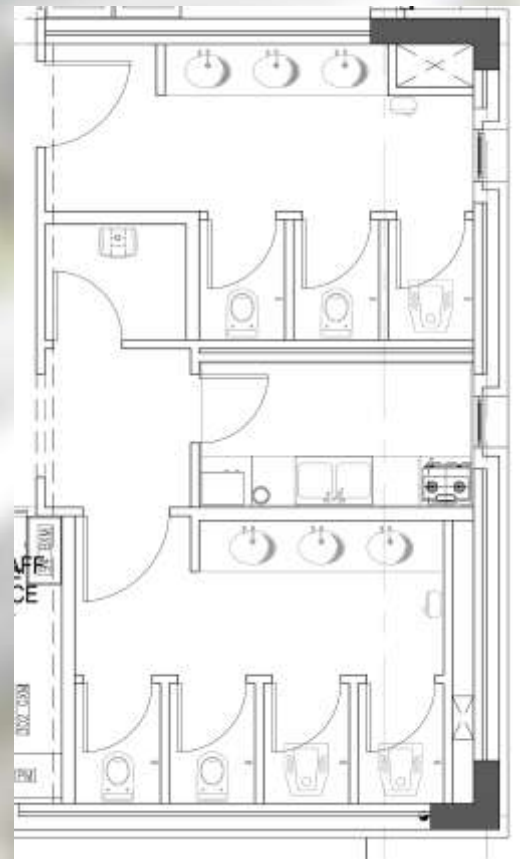
Single offices for faculty members has a minimum area of 7.5 M² plus 7 M² for every additional faculty member.



PLANNING & EDUCATIONAL POLICES & VALUES

Planning Criteria for the University Campus

The number and size of lavatories is so selected that a seat has been assigned for every 30 students and a seat for every 20 faculty and staff members.



The image features a blurred aerial photograph of a residential development with numerous houses and green spaces. A vertical blue bar is positioned on the left side of the frame. The text 'MASTER SITE PLAN DESIGN PRINCIPLES' is centered over the blue bar and the background image. The word 'MASTER' is in white, while 'SITE PLAN DESIGN PRINCIPLES' is in blue.

MASTER SITE PLAN DESIGN PRINCIPLES

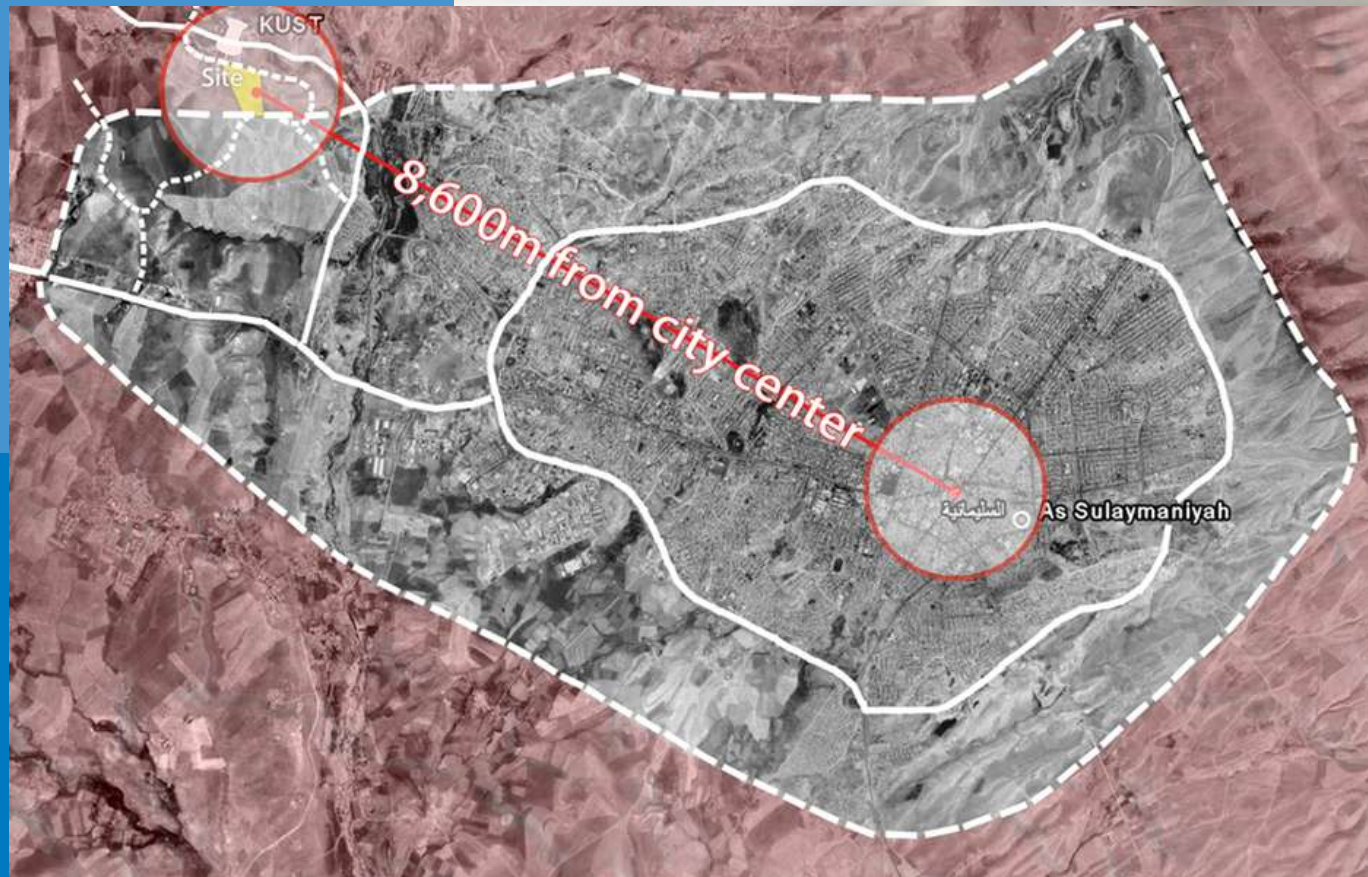
MASTER SITE PLAN DESIGN PRINCIPLES

MASTER PLAN VISION

- To create an identity for KUST and an inviting campus that will be inspirational to the users and the wider public of Sulaymania, Iraq and neighboring countries
- The developed Campus is to have a sense of place, present a distinct identity as well as be representative of local culture and respectful of community needs.
- The master plan is to provide KUST with an innovative and effective platform for higher education
- To create a sense of community and home atmosphere and encourage interaction between people in different disciplines
- The landscape design objective is to integrate with and enhance the master plan by the appropriate use of hard and soft landscape.

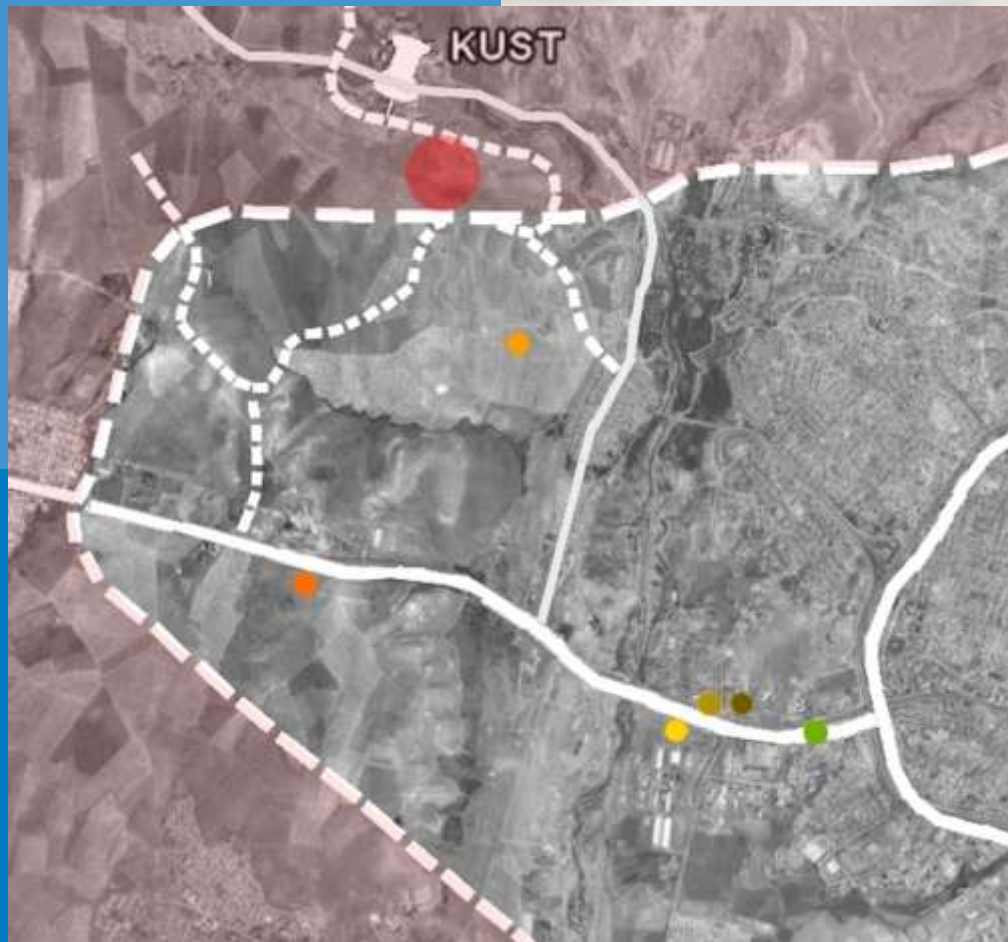
MASTER SITE PLAN DESIGN PRINCIPLES

PROJECT LOCATION



MASTER SITE PLAN DESIGN PRINCIPLES

SITE SURROUNDINGS



- KUST Site
- Sulaymaniyah University
- AUI Sulaymaniyah
- Sulaymaniyah Governorate Complex Building
- Governorate Building
- Court Of Justice

MASTER SITE PLAN DESIGN PRINCIPLES

PROJECT LOCATION



MASTER SITE PLAN DESIGN PRINCIPLES

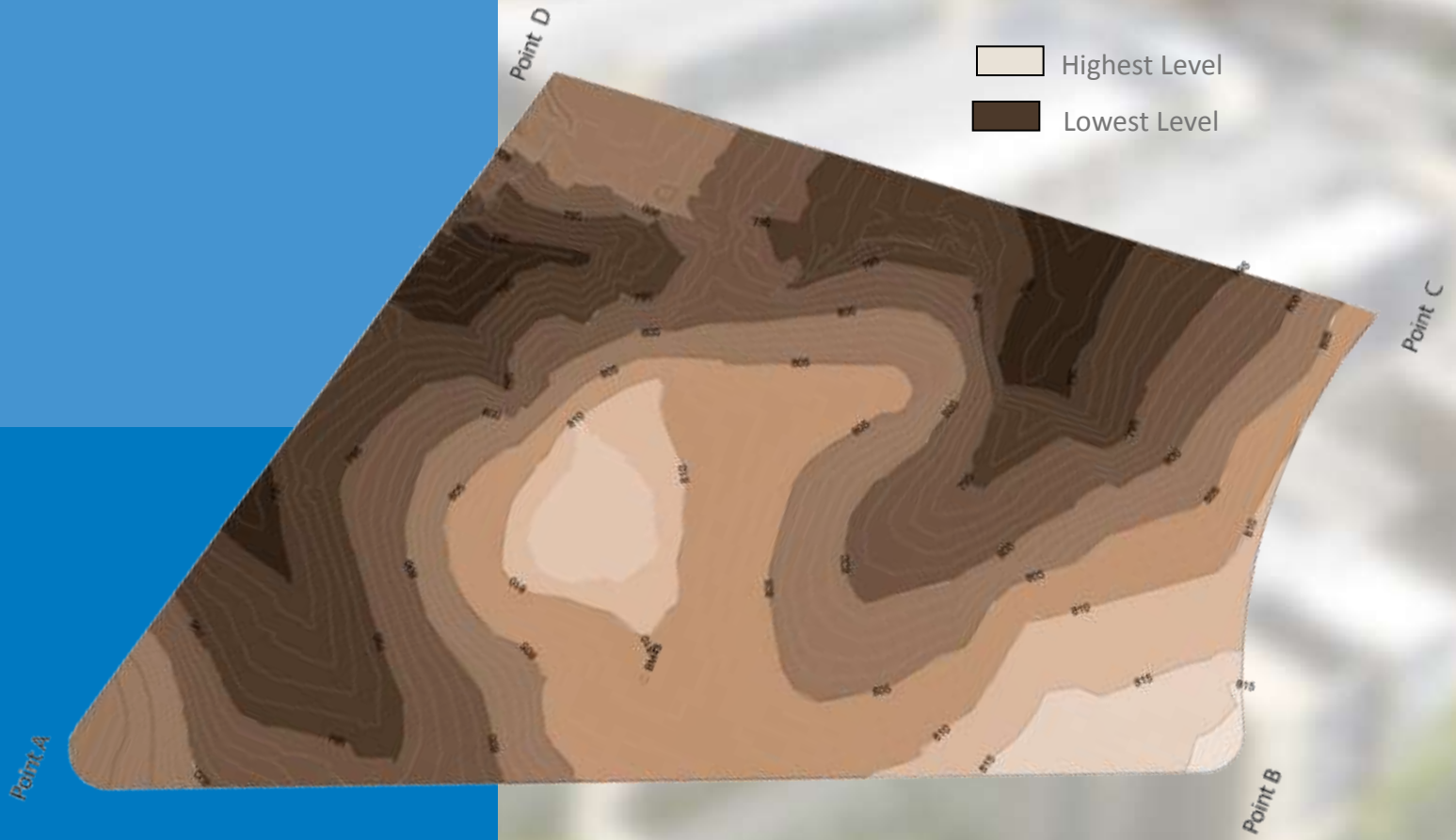
LAND LOT DATA

TOTAL AREA: 600,000m



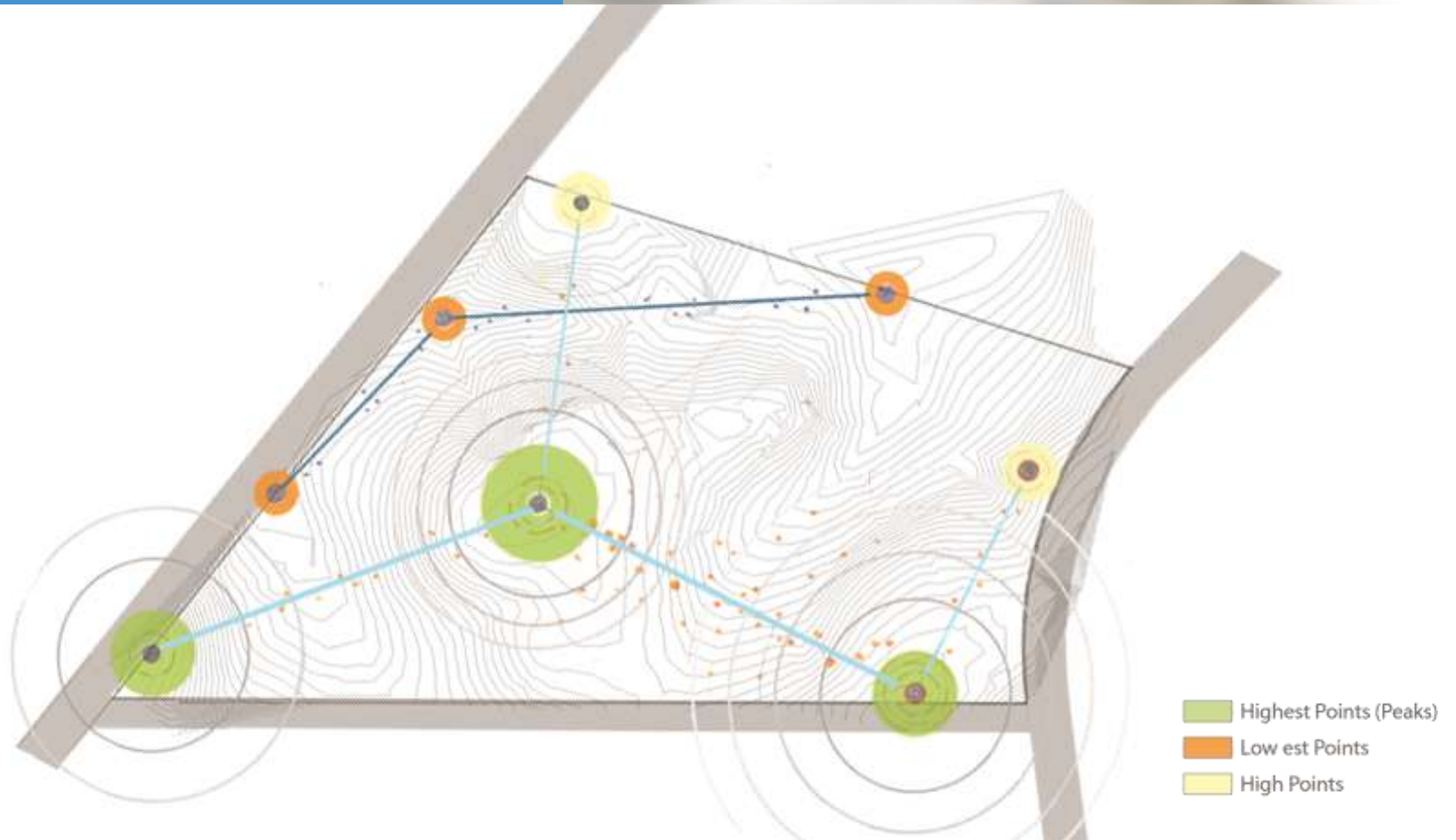
MASTER SITE PLAN DESIGN PRINCIPLES

TOPOGRAPHY



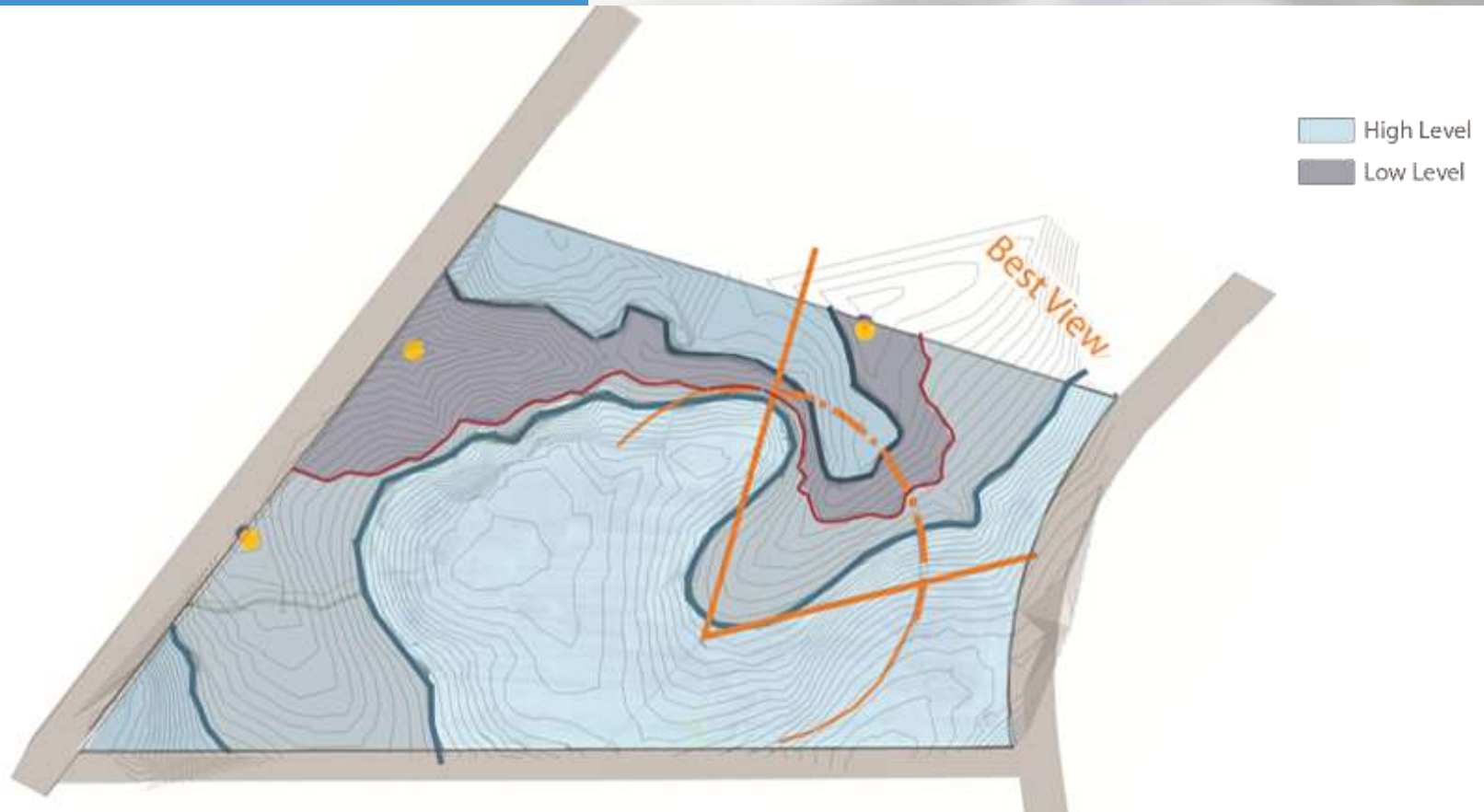
MASTER SITE PLAN DESIGN

PEAKS & CONNECTIVITY



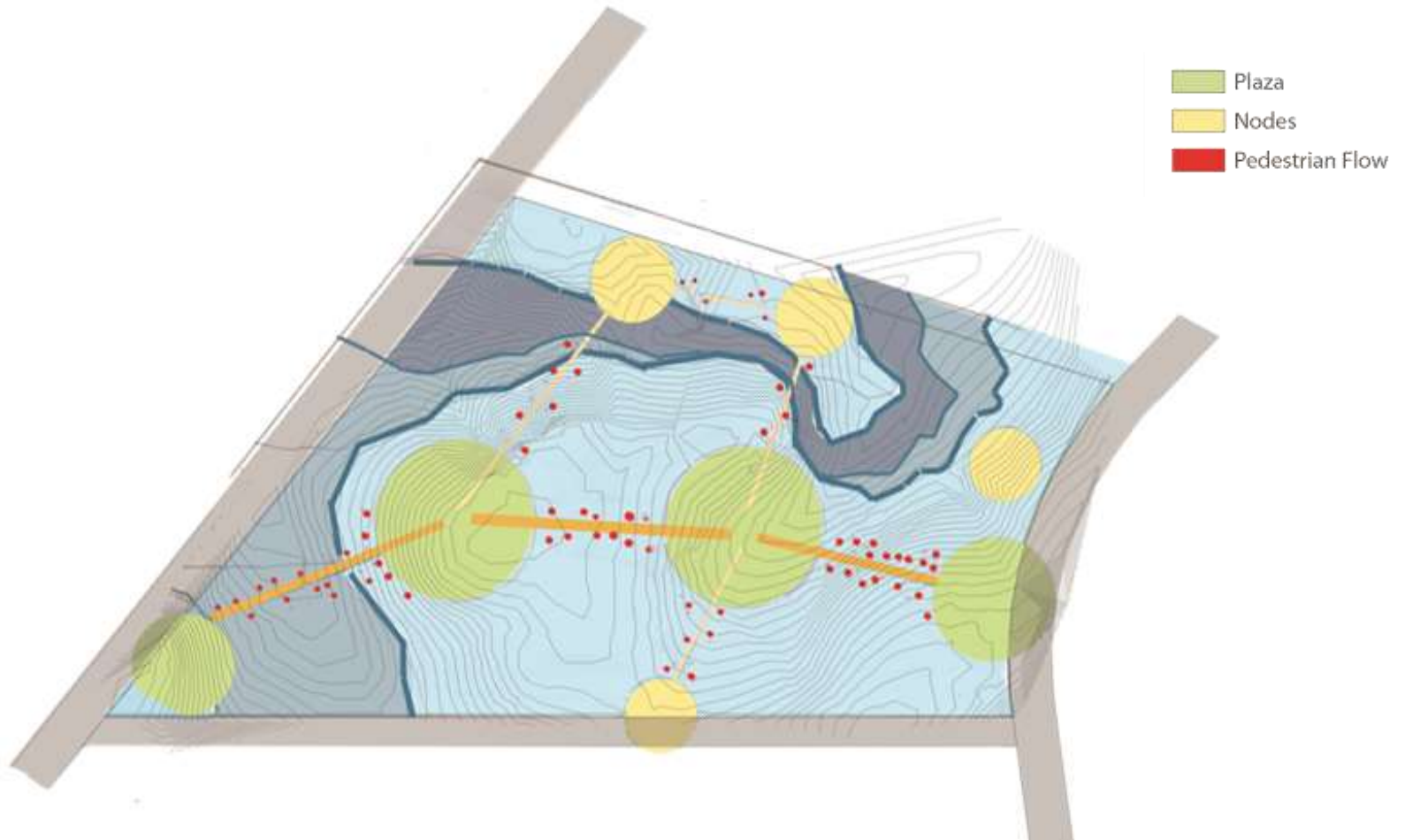
MASTER SITE PLAN DESIGN

LAND CHARACTERISTIC & VIEWS



MASTER SITE PLAN DESIGN

PLAZAS & NODES



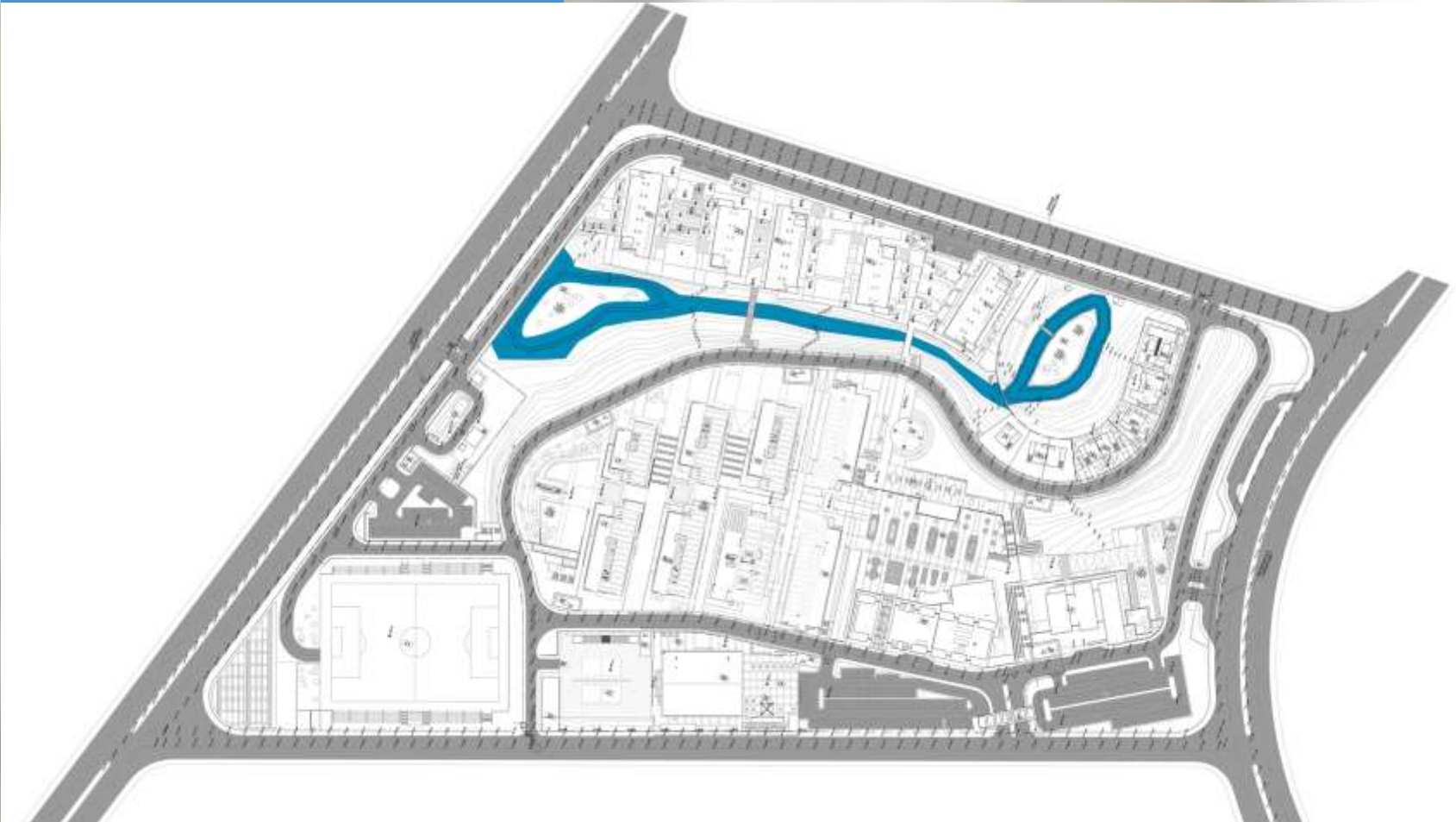
MASTER SITE PLAN DESIGN

MAIN ENTRANCES & CIRCULATION SPINES



MASTER SITE PLAN DESIGN

MASTER SITE PLAN LAYOUT



MASTER SITE PLAN DESIGN

BUILDING USE

- | | |
|--|--|
|  Administration |  Football Field |
|  Library |  Workshops |
|  Indoor Sport Facilities |  Cafeteria |
|  Faculties |  Electrical Sub-Station |
|  Future Expansion |  Elevated Water Tank |
|  Guest House |  Sewage Treatment Plant |
|  House of President, Vice-President & Deans | |
|  Staff Apartments | |
|  Students Housing | |



MASTER SITE PLAN DESIGN

CIRCULATION PATTERN

- Secondary Pedestrian Network
- Primary Pedestrian Network
- Parking
- Street Network



MASTER SITE PLAN DESIGN

LANDSCAPE



MASTER SITE PLAN DESIGN

INFRASTRUCTURE ELECTRICAL SERVICES

Infrastructure electrical and telecommunication networks shall include the followings:

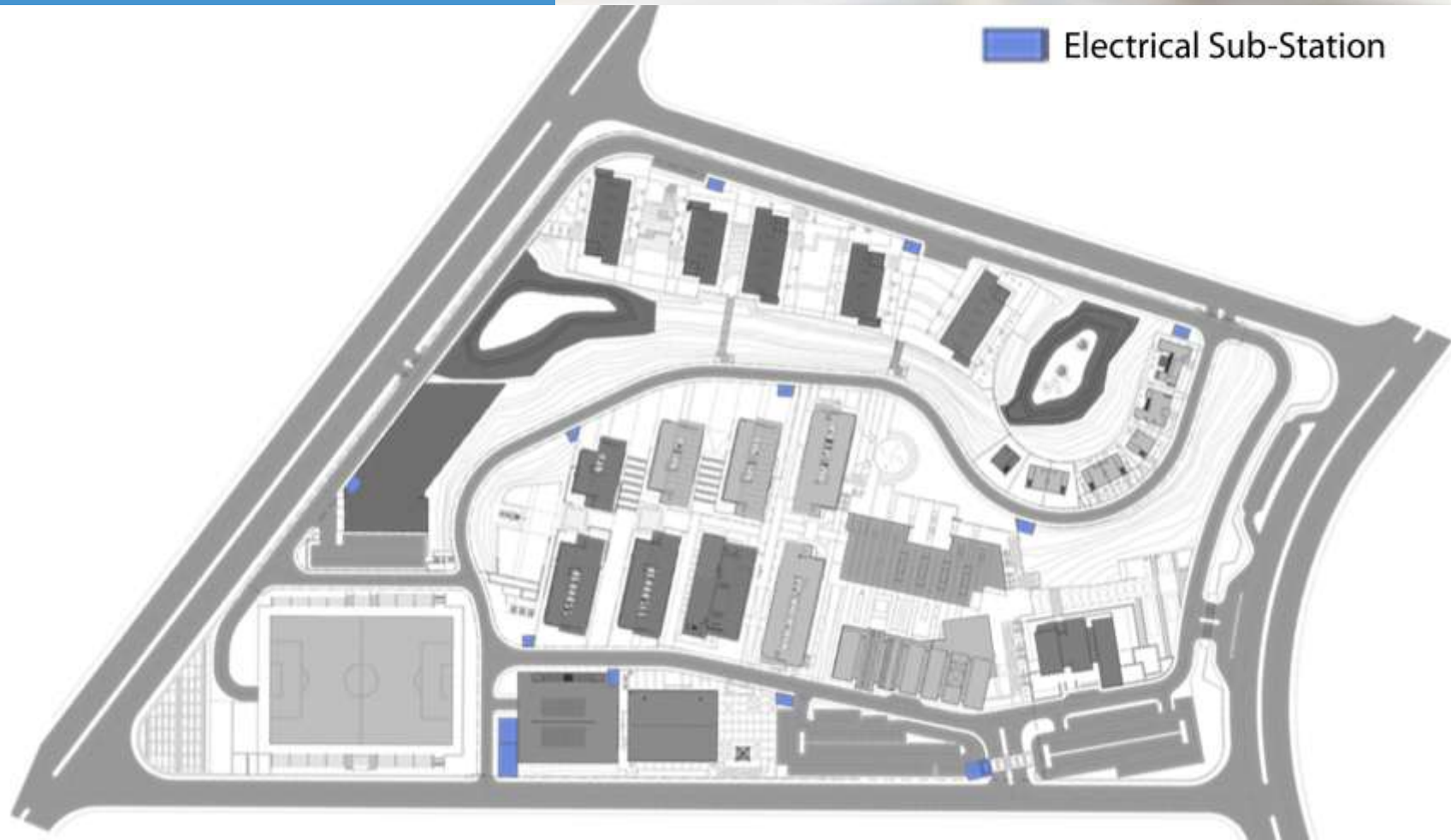
- 33 kV Switching station
- 33/0.4kV branch power
- 33 kV medium voltage network

Branch Power Transformers

- Medium voltage network will consist of 33/0.4KV branch power transformers distributes at site close to load centers, and connected to switching station via 19/33 KV underground cables distributed in 1 ring.
- 8No. 33/0.4KV branch power substations will be installed in pahse1, 2No. In phase 2 and 1 No. in phase 3.
- 3x150mm² Cu/XLPE/SWA/PVC, 19/33 KV underground cables will be used in MV ring

MASTER SITE PLAN DESIGN

INFRASTRUCTURE
ELECTRICAL SERVICES



MASTER SITE PLAN DESIGN

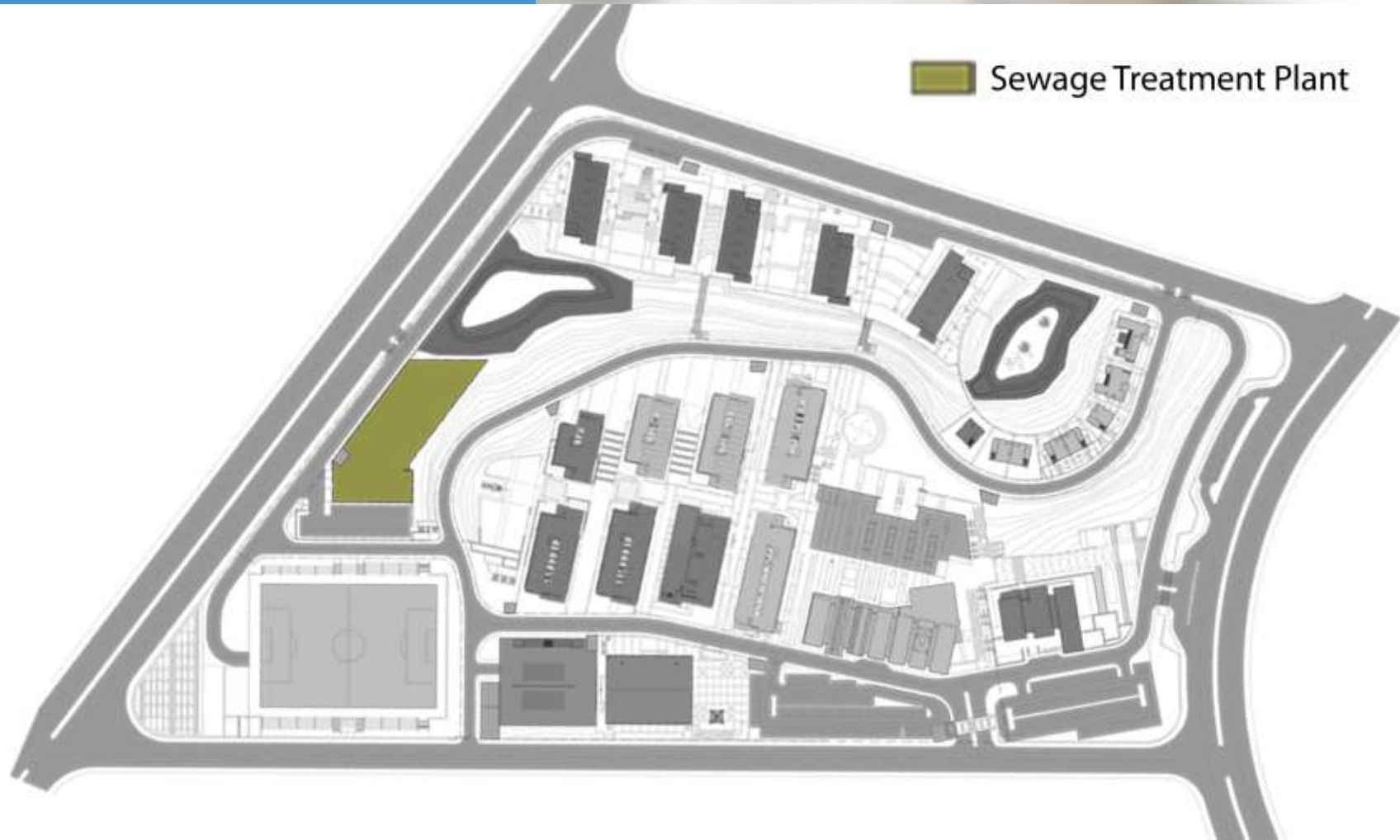
INFRASTRUCTURE

WWTP

- The main purpose of the university WWTP is to treat the collected sewerage to accepted level to be suitable to use in the restricted irrigation.
- The WWTP is comprise of two package units each 100 m³/day, equalization tank with a storage capacity of 180 m³, effluent storage tank with a storage capacity of 250 m³, sludge holding tank with a capacity of 36 m³, and chlorination chamber.

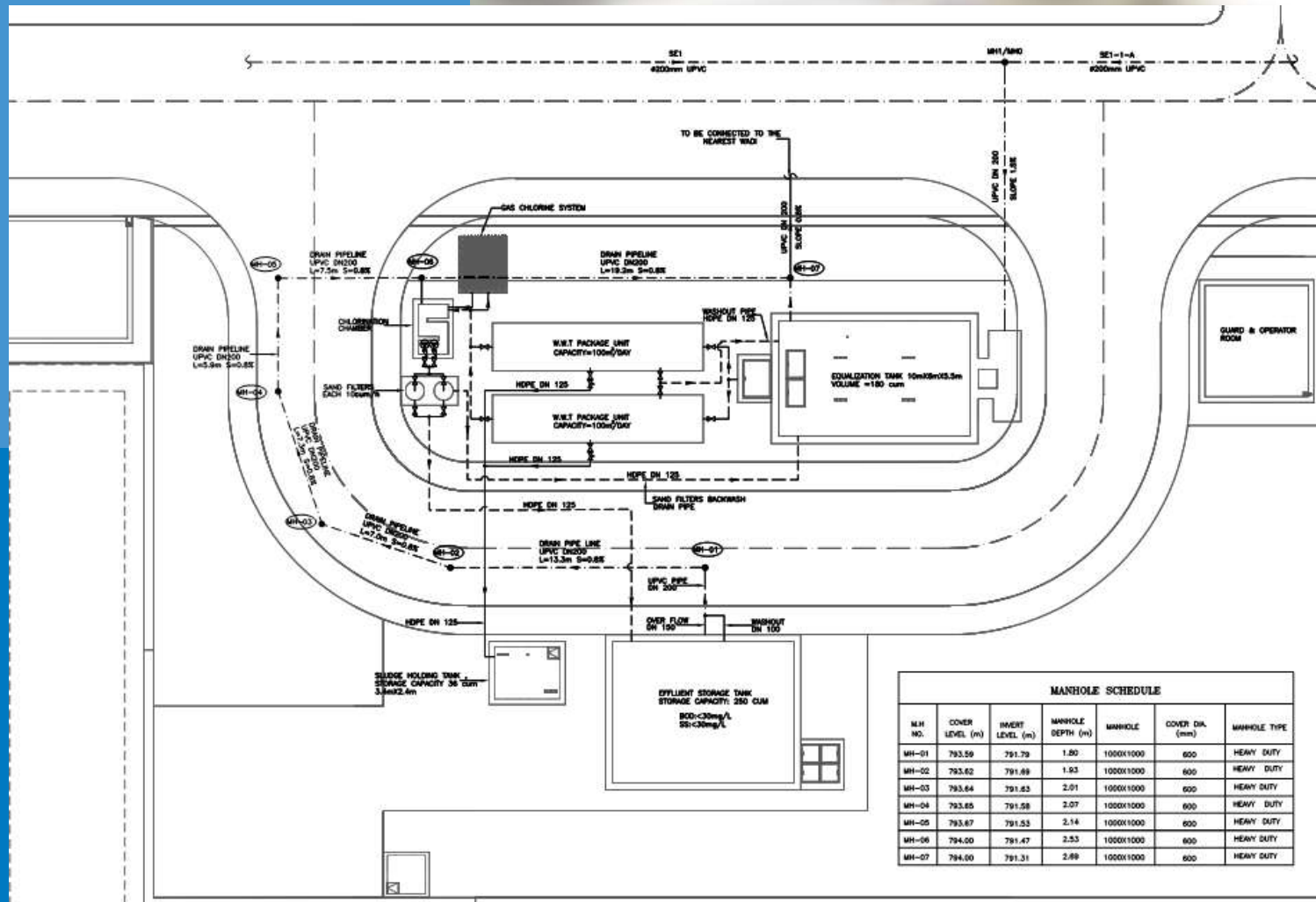
MASTER SITE PLAN DESIGN

SEWAGE TREATMENT PLANT



MASTER SITE PLAN DESIGN

SEWAGE TREATMENT PLANT



MASTER SITE PLAN DESIGN

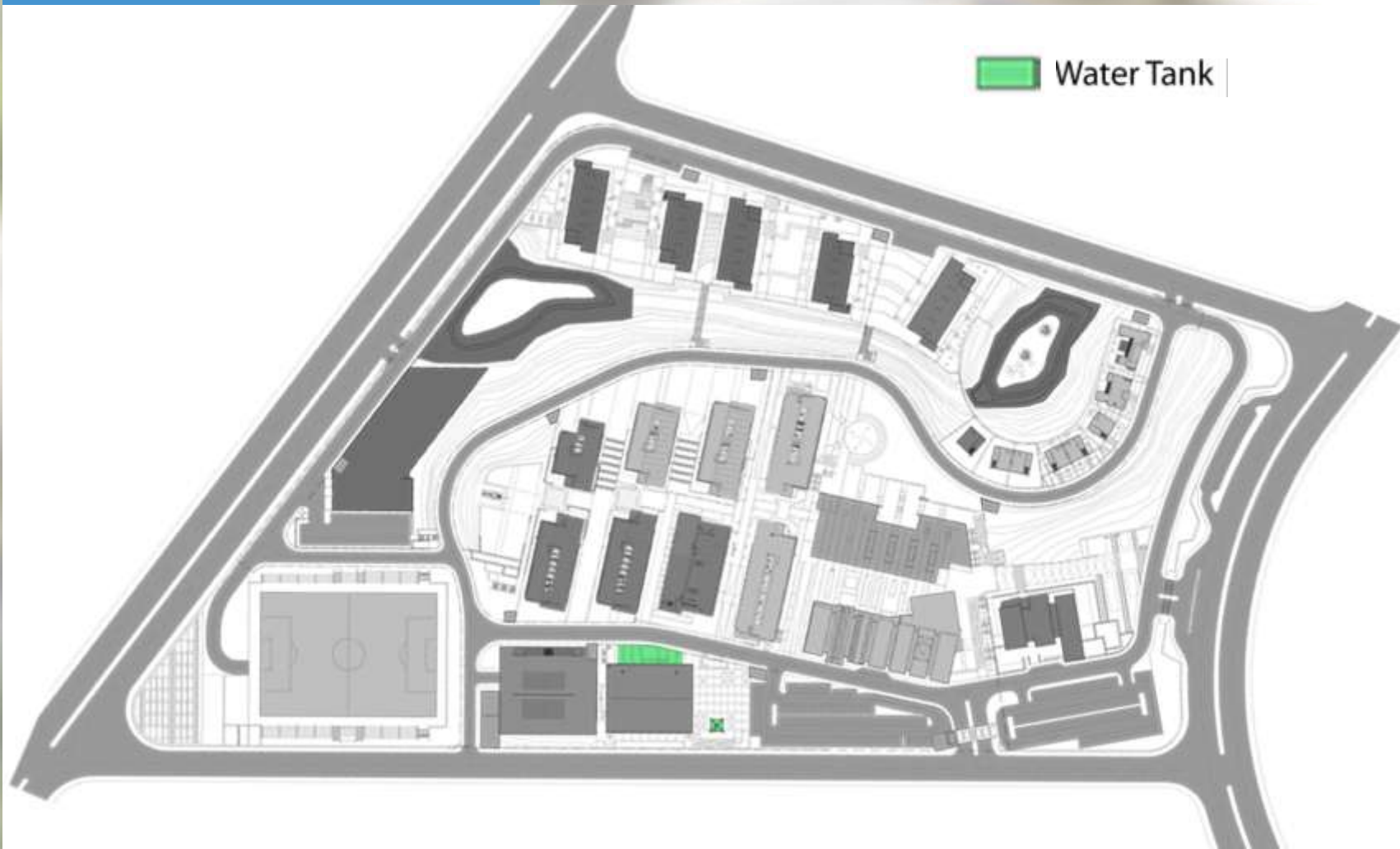
WATER SUPPLY SERVICES •

The water supply system consists of central water tank associated with pump station, elevated tank, and a distribution water supply network. Volume of the proposed central water tank will include both potable water volume and fire fighting volume. Elevated tank will supply all building with the required potable daily demand.

- The estimated volume for daily potable water use is approximately **285 m³** and **345 m³** is the volume for fire fighting purposes. The under ground central tank is designed to store **three days** demand volume and the fire fighting volume around **1200 m³**, and the elevated tank volume is around **140m³**.

MASTER SITE PLAN DESIGN

WATER TANKS



MASTER SITE PLAN DESIGN

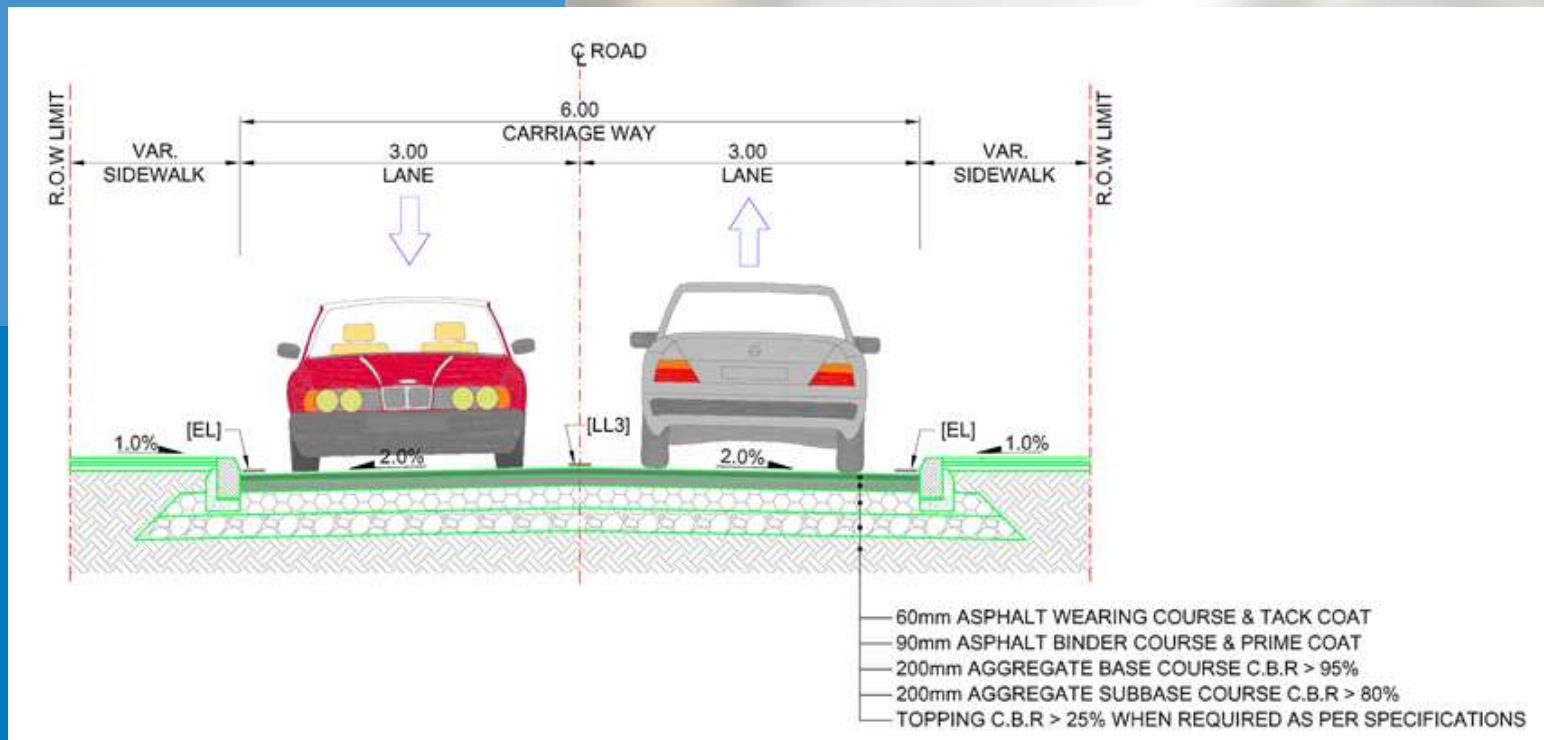
WATER SUPPLY & WASTEWATER SERVICES

Phase 1 Facilities	Total Built-Up Area (m ²)	Number of Users	Consumption Use	Water Demand (m ³ /day)
College of Engineering	4530	774	30 Liter/user/day	23.22
College of Business	4620	756	30 Liter/user/day	22.68
Library	5340	258	30 Liter/user/day	7.74
Science & Engineering Labs	2670	258	30 Liter/user/day	7.74
Main Student Plaza	3030	378	7 Liter/user/meal	7.94
Indoor Sports Facilities	2375	126	50 Liter/user/day	6.30
House of President	480	6	250 Liter/capita/day	1.50
House of Vice President	261	6	250 Liter/capita/day	1.50
House of Dean 1	256	6	250 Liter/capita/day	1.50
House of Dean 2	256	6	250 Liter/capita/day	1.50
Faculties & Staff Apartments	4315	100	250 Liter/capita/day	25.00
Guest House	430	6	250 Liter/capita/day	1.50
Security & Gate	100	2	30 Liter/user/day	0.06
Secondary Entrance	40	2	30 Liter/user/day	0.06
Phase 2 Facilities	Total Built-Up Area (m ²)	Number of Users	Consumption Use	Water Demand (m ³ /day)
Building for New College	3600	720	30 Liter/user/day	21.60
Building for New College	3600	720	30 Liter/user/day	21.60
Science & Engineering Labs	950	240	30 Liter/user/day	7.20
Future Expansion (Science Labs)	-	240	30 Liter/user/day	7.20
Future Expansion (Restaurants)	-	240	30 Liter/user/day	7.20
Houses for 2 Dean	512	12	250 Liter/capita/day	3.00
Staff & Faculty Housing	3880	100	250 Liter/capita/day	25.00
Student Housing	9300	300	250 Liter/capita/day	75.00
Phase 3 Facilities	Total Built-Up Area (m ²)	Number of Users	Consumption Use	Water Demand (m ³ /day)
Administration	2600	240	30 Liter/user/day	7.20
Total Potable Water Demand/Day =				283.24
Estimated Fire Fighting Volume (m ³) =				345.00
One Day Storage Volume (m ³) =				628.24
Three Day Storage Volume (m ³) =				1194.71

MASTER SITE PLAN DESIGN

ROADS DESIGN CRITERIA

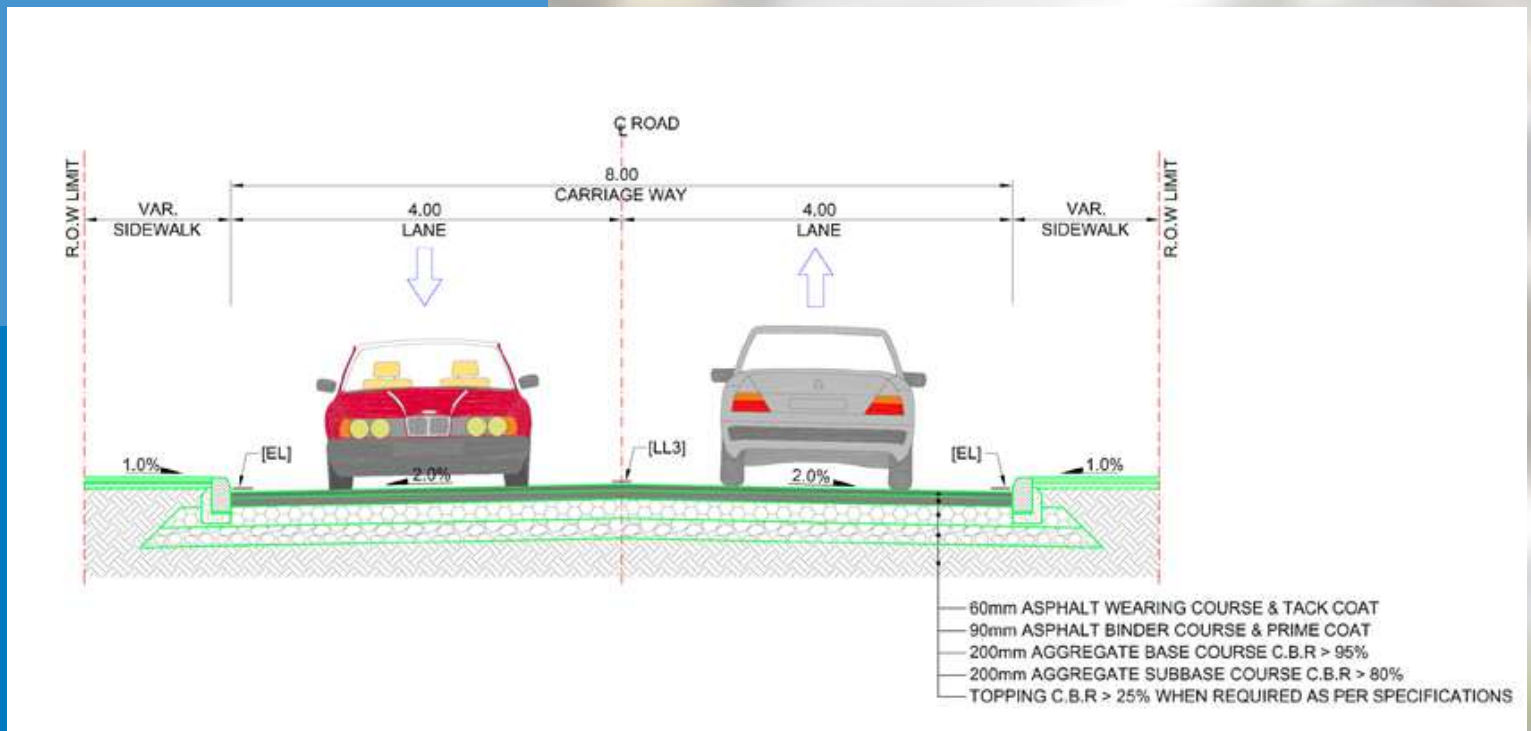
Proposed types of typical cross section are applied for the different widths of the road network as shown in the following figures:



Proposed Typical Cross Section with (6m) width Carriage way

MASTER SITE PLAN DESIGN

ROADS DESIGN CRITERIA



Proposed Typical Cross Section with (8m) width Carriage way

MASTER SITE PLAN DESIGN

FLOOD AND STORMWATER SYSTEM

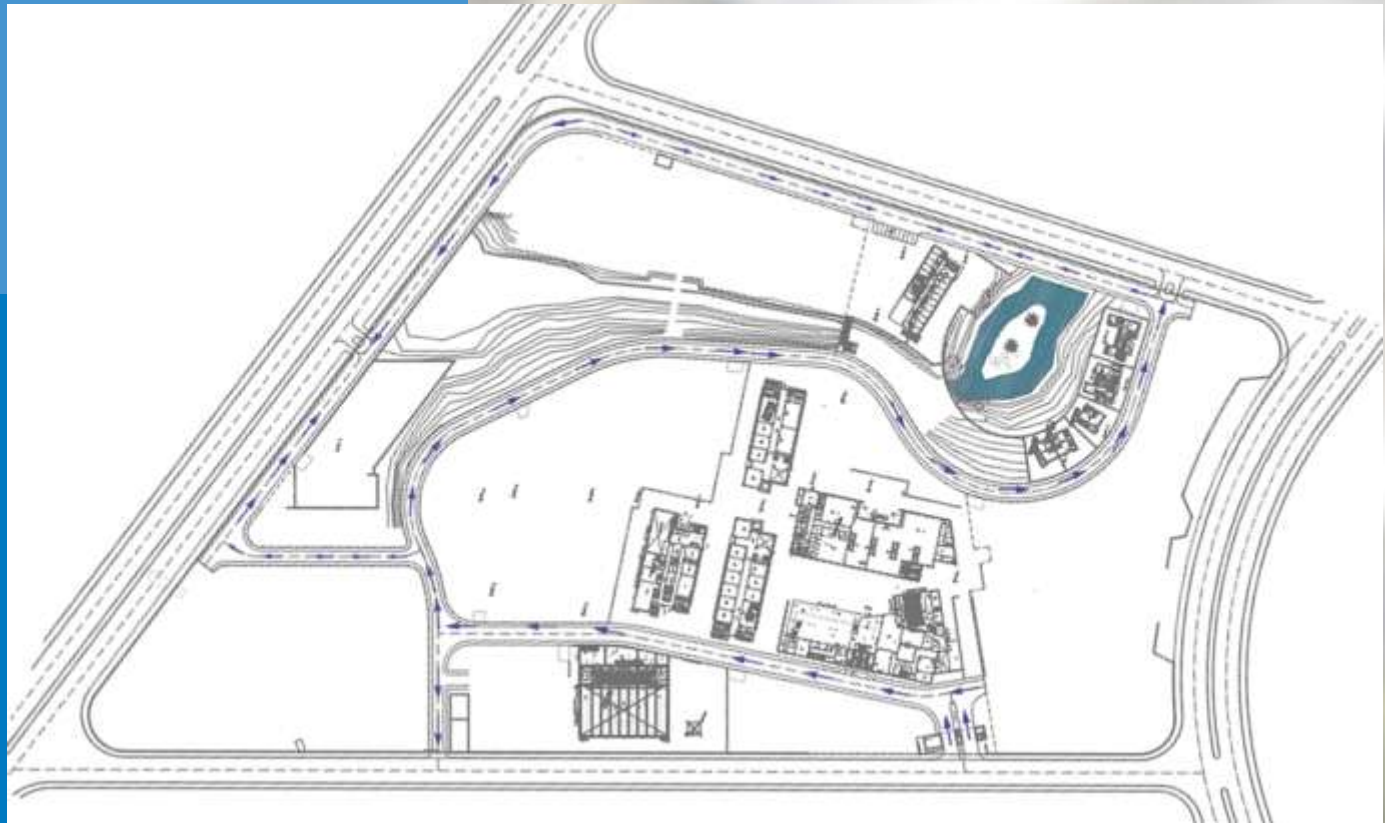


Relationship between project area, Wadi Serchinar and streams.

MASTER SITE PLAN DESIGN

STORMWATER NETWORK •

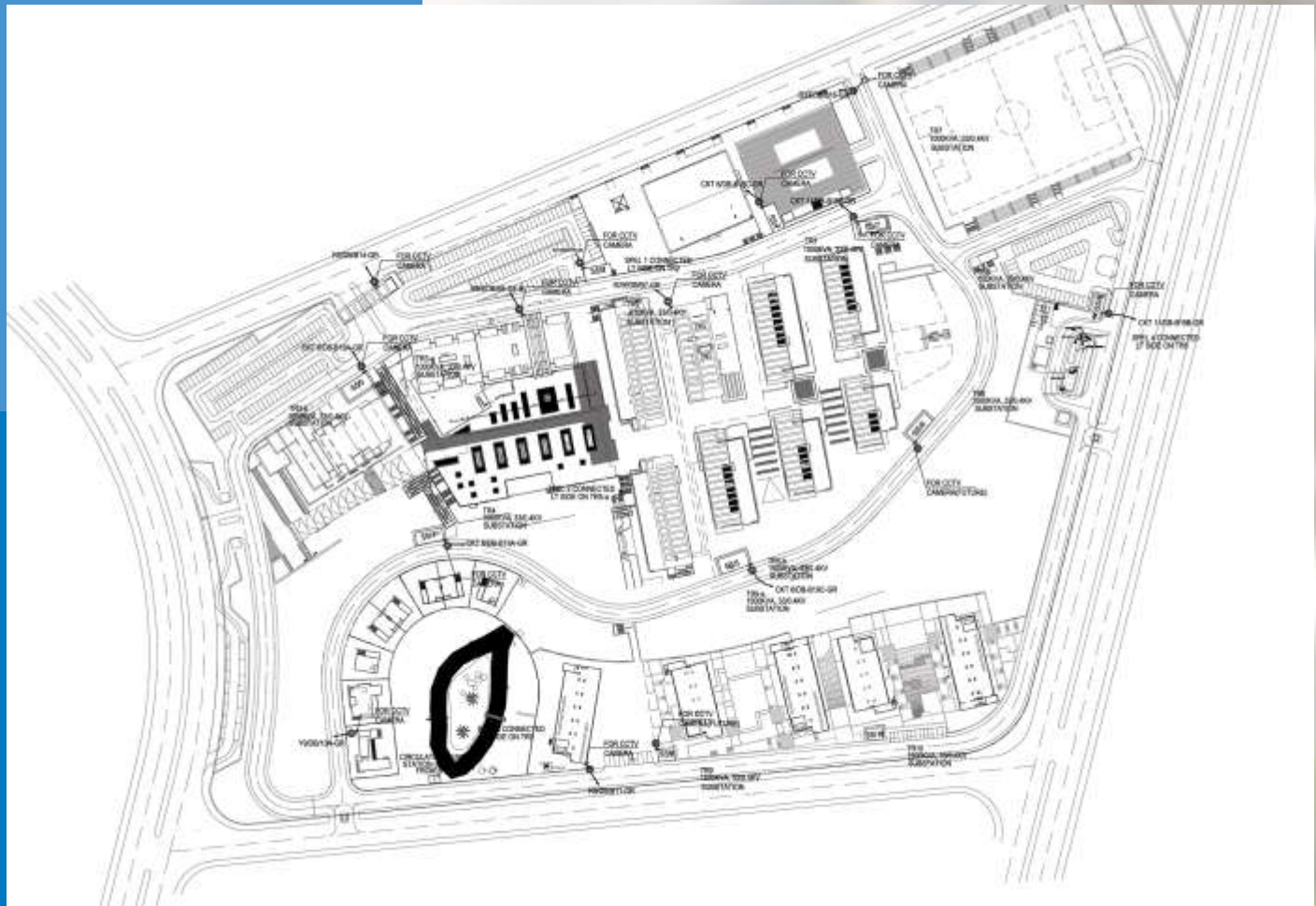
Storm water network is designed to drain part of rainwater out side the project area toward Al Qularaisy Sewage Network and the other part is collected in the lagoon to be used for irrigation.



MASTER SITE PLAN DESIGN

INFRASTRUCTURE

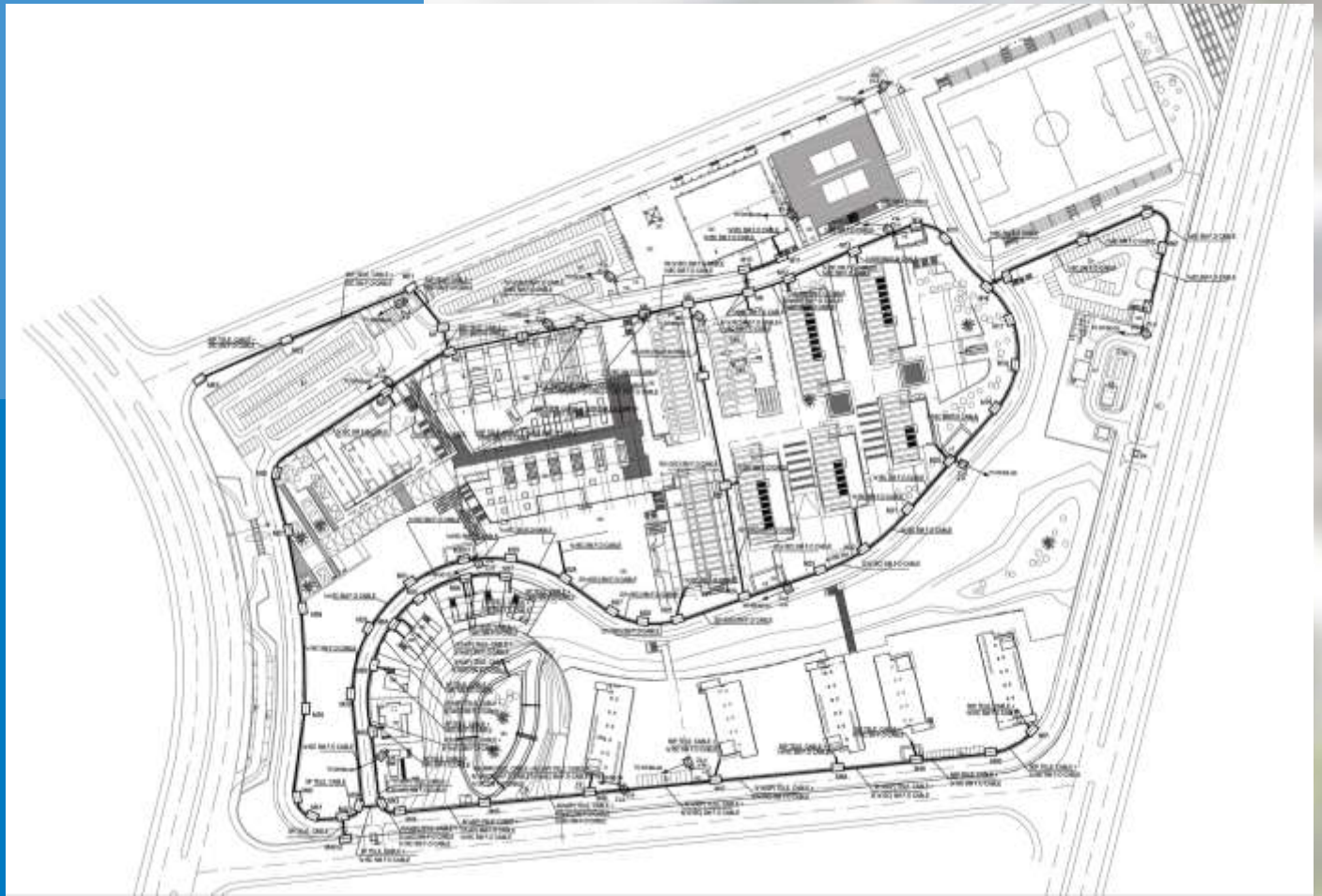
ELECTRICAL WORK



MASTER SITE PLAN DESIGN

INFRASTRUCTURE

TELECOM NETWORK LAYOUT



MASTER SITE PLAN DESIGN

INFRASTRUCTURE

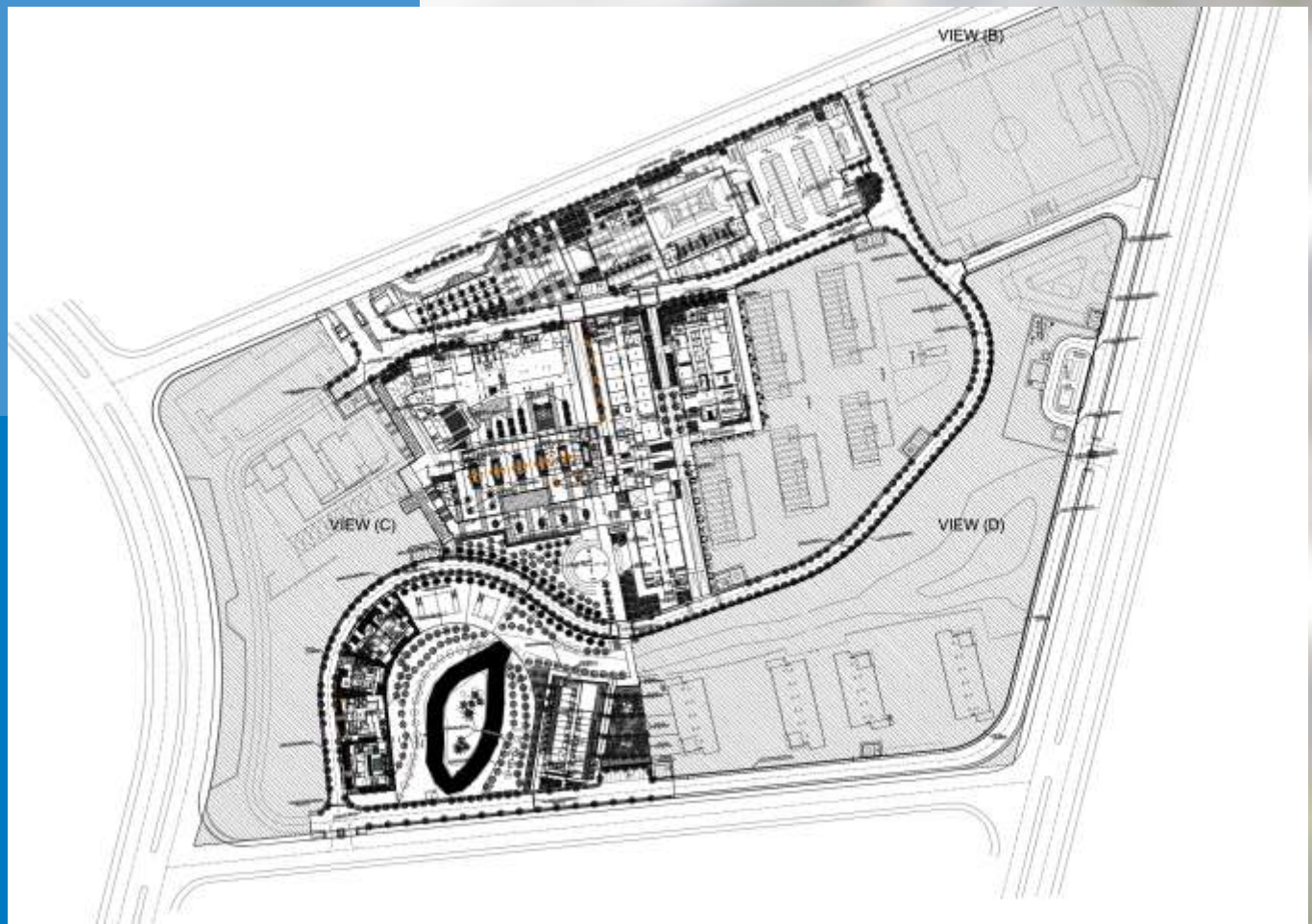
LANDSCAPE LAYOUT



MASTER SITE PLAN DESIGN

INFRASTRUCTURE

IRRIGATION LAYOUT



BUILDINGS DESIGN CRITERIA

STORMWATER NETWORK •

- Storm drainage system is integrated with project area grading to provide the maximum protection against storm water drainage for the entire site, individual blocks, and individual buildings.

- No more than 50% of the paved area localized by two opposite slopes may be flooded with zero to 100 mm deep water during very extreme storm conditions. Maximum spacing between catch-basins or manholes is 50 m for cleaning and maintenance point of view.

- Storm pipes are designed at two third-full condition with a minimum diameter of 250 mm and minimum pipe velocity of 0.60 m/sec. While minimum allowable pipe velocity at start header is considered as 0.4 m/sec. The maximum pipe velocity to avoid stability problems at joints is 5.0 m/sec.

An aerial photograph of a residential development, showing a cluster of buildings with grey roofs and some greenery. A vertical blue bar is overlaid on the left side of the image. The text 'BUILDINGS DESIGN CRITERIA' is centered horizontally across the blue bar.

BUILDINGS DESIGN CRITERIA

BUILDINGS DESIGN CRITERIA

ARCHITECTURAL DESIGN POLICY



One of the main architectural principles that govern the architectural design of KUST University is to carefully consider the Simplicity, economy, ease of constructability and of maintenance through using the proper materials.



BUILDINGS DESIGN CRITERIA

ARCHITECTURAL DESIGN POLICY

Project Name: Komar University for Science & Technology
Project No.: 2435
Consolidated Consultants
73 Al Mutanabi Street 4th circle
P.O.Box: 83 07 46
Amman 11183 Jordan

FINISHES SPECIFICATION

Catalogue Cut Sheet # 12

Item No.:	C2
Item Name:	Acoustical Mineral Fiber Ceiling Tiles
Area:	Offices & BOH
Manufacturer	
Description	600x600 mm Ceiling Tiles
Finish	Fine texture finish

Catalogue Cut:



Project Name: Komar University for Science & Technology
Project No.: 2435
Consolidated Consultants
73 Al Mutanabi Street 4th circle
P.O.Box: 83 07 46
Amman 11183 Jordan

FINISHES SPECIFICATION

Catalogue Cut Sheet # 3

Item No.:	F 5
Item Name:	Floor Tiles
Area:	Stores, Offices & Classrooms
Manufacturer	COOPERATIVA CERAMICA D'IMOLA Via V. Veneto, 13 - 40026 Imola BO - Italia Tel. +39 0542 601601 Fax +39 0542 31749 http://www.imolaceramica.it info@imolaceramica.it
Description	300x300x7.3 mm Tiles / ATLANTIS Collection - ATLANTIS 30B
Finish	Slate Cut Finish / Matt Glaze

Catalogue Cut:

ATLANTIS B



BUILDINGS DESIGN CRITERIA

STRUCTURAL DESIGN POLICY

- Cast in-situ reinforced concrete was employed for the construction of all structural members of the buildings, except for the Indoor sports building which consists of structural steel system.
- Slab system mainly consists of flat slab system; this system was chosen for the following reasons:
 - Provide appropriate clear spans for class rooms and open areas.
 - Time saving
 - Reduces losses in clear height inside the buildings.
 - Familiarity in local construction industry.
 - Simple and fast formwork and construction.
 - Flexibility of partition location and horizontal service distribution.

BUILDINGS DESIGN CRITERIA

HEATING, VENTILATION AND AIR CONDITIONING (HVAC) SYSTEM

- **Outside Design Conditions:**

The heating, ventilation and air conditioning system will be designed according to the following prevailing design conditions:

Wet Bulb Temperature °C	Dry Bulb Temperature °C	Season
22.0	46.0	Summer
-4.0	-2.0	Winter

Daily temperature range = 22.2 °C

- **Inside Design Conditions:**

Generally speaking the average design inside temperature will be with relative humidity of 50 5%.

BUILDINGS DESIGN CRITERIA

FIRE ALARM SYSTEM

- Analogue addressable fire alarm system will be designed to meet the international standards and local civil defense authority requirements and approval.
- Main fire alarm control panel (MFACP) will be located at the main data center in library building, each building will have its own slave fire alarm control panel (SFACP) which is connected to main fire alarm control panel in the library building through site manholes and 1 No., 4" UPVC.
- Fire cables shall be installed to connect each slave fire alarm control panel (SFACP) to the main Fire Alarm Control Panel (MAFCP).

An aerial photograph of a residential development, showing several large, modern houses with light-colored roofs and walls, interspersed with green lawns and trees. A vertical blue bar is overlaid on the left side of the image, with the text 'PROJECT IMAGES' centered within it. The bar has a gradient from a lighter blue at the top to a darker blue at the bottom.

PROJECT IMAGES



General view



General view



General view



General view

JORDAN



General view

JORDAN



General view

An aerial photograph of a residential neighborhood with several houses and streets. A vertical blue bar is overlaid on the left side of the image. The text 'THANK YOU' is centered within the blue bar.

THANK YOU